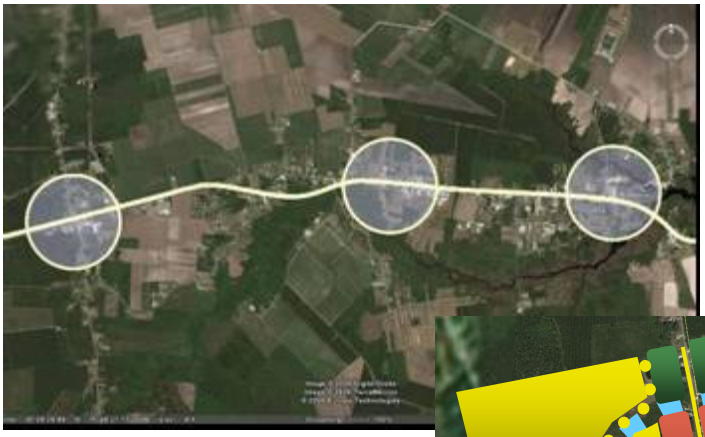
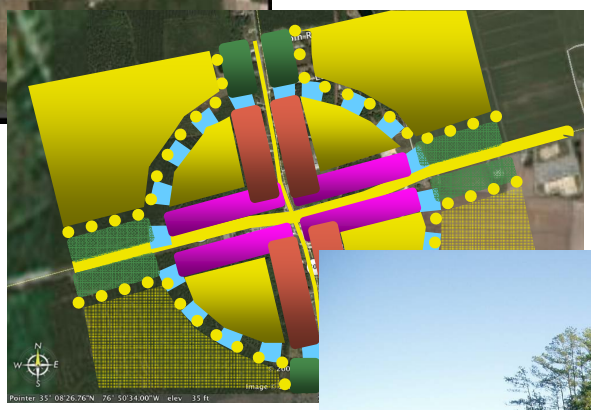
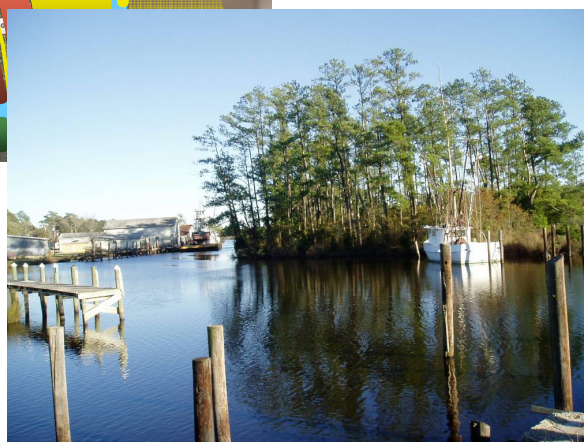
# Retaining Our Sense of Place
## by
# Managing Our Highway







**US EPA Smart Growth Implementation Assistance Program for Coastal Communities:**

**Pamlico County, North Carolina**

*With*

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# 1 EXECUTIVE SUMMARY

In December 2006, Pamlico County asked a U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) team to help the community produce a shared vision for the county's growth and specifically to address growth associated with the expansion of Highway 55. The county wanted strategies that would guide development along the highway expansion to fit with the county's vision and needs. Pamlico County also wanted to explore better development techniques for the entire county. The county asked the team to use the town of Grantsboro as a model for fostering distinctive, attractive communities through innovative policies and programs.

Pamlico County's citizens welcome the opportunities that growth will offer, but they want policies and principles to ensure that the growth is sustainable and to enable communities to improve their quality of life. The county and its towns can influence land use patterns, densities, and communities' character by better coordinating land use and transportation investments. Pamlico County can encourage community development that yields: active centers while maintaining each community's sense of place; more stores and housing choices; places that produce less driving; and less traffic congestion.

By encouraging regional cooperation, Pamlico County can manage traffic flow strategically. Managing access to Highway 55 can make it safer, and better connecting streets will make it easier to get around by foot, bike, or motorized vehicle. Finally, enhancing the corridor's natural environment and using it to create edges between towns and the surrounding countryside will enable communities to retain their distinct identities.

This report presents a vision that was informed by the views and comments of Pamlico County citizens. It is only the first step in a much larger process that Pamlico County elected officials, staff and practitioners, local stakeholders, and citizens must carry out. Some actions the county can consider include preparing a corridor plan for Highway 55; developing ordinances to implement the corridor plan; conducting an audit of Pamlico County's land development regulations; or preparing design guidelines.

Pamlico County is in a strong position to grow, enhance quality of life, and maintain its sense of place. In order to get the kind of development local citizens and officials want, a variety of tools need to be used and clear signals should be sent to the private sector about what will be accepted. Because Pamlico County is a desirable place to live, the county can insist on having development occur on its terms.

Pamlico County entered this process wishing to create a model that may be transferable to other communities. If the county remains true to its residents' vision, it can be a model for successfully implementing smart growth objectives in the immediate region, throughout the state, and across the nation. By adhering to the vision, Pamlico County's citizens can bestow a legacy to future generations that retains the values, pride, and sensibilities of growing up in a small town or living in rural America.

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# 2 INTRODUCTION

## 2.1 A Vision for Smart Growth in Pamlico County

Pamlico County has long been a rural community, where change has come slowly and the character of the community has been a constant that residents could rely on. Now that could be changing. Like coastal areas around the country, many parts of coastal North Carolina have recently experienced significant growth pressure. Pamlico County has seen some evidence that this trend is occurring locally. Recent development proposals in the town of Stonewall reveal the development community has discovered Pamlico County. The recent widening of NC Highway 55 from two to five lanes provides considerably more and higher speed access to coastal areas of Pamlico County. Between the increased accessibility and growth pressures, it is reasonable to believe that significant and comparatively rapid change may be in the county's near future.[1]

*Figure 1. Aerial photo of the study area, showing the towns of Grantsboro, Alliance, and Bayboro. Hwy 55 (represented by the meandering line that traverses the photo) connects the three towns.*[2]

In anticipation of these changes, Pamlico County applied to the Smart Growth Implementation Assistance for Coastal Communities program, run by the U.S. EPA and the NOAA. For more information on the program, see Appendix A. The county asked the EPA/NOAA Team (Team) to conduct workshops and public meetings that would help the community produce a shared vision for the county and address future growth associated with the expansion of NC Highway 55 (Hwy 55).

The study area for the technical assistance project was limited to a twelve-mile span of Hwy 55, extending from the Pamlico County line to Bayboro. This segment of the highway passes through

[1] Accessibility refers to the physical ability to reach desired destinations, services, and activities.
[2] Base map: Google Earth

three small towns: Grantsboro, population 734; Alliance, population 753; and Bayboro, population 716.[3] Currently, the study area exhibits a low population density, and the character elements that typify rural jurisdictions, such as widespread tracks of farmland, forestland, and open space, are ample. Bayboro, the county seat, has some aquatic amenities in the form of creeks and the Bay River.

The natural environment, rather than the built environment, primarily defines the sense of place within the study area. The towns lack tangible cores due to the absence of compact development patterns. There are no public gathering places like town squares. In addition, residential and commercial development within the study area is loosely dispersed along the span of Hwy 55, rather than concentrated or massed.

Median household income for Pamlico County is approximately $34,000, and the unemployment rate is 4.8 percent. Agriculture, forestry, and fishing have been a cornerstone of the local economy, and small businesses are important to the revenue stream. Over 20 percent of employment in Pamlico County comes from the government, education, social services, and health sectors. This is noteworthy because the study area included the county seat. Finally, construction represents a growing sector since the County has experienced an upswing in development of second-homes and retirement communities.

For the technical assistance project, the county asked the Team to:

1) Capture what residents' value about the community;

2) Identify the pitfalls that the county would like to avoid as new growth comes;

3) Inventory the improvements the county would like to leverage from new growth; and

4) Suggest to the county a vision for the future that accommodates new growth in a way that avoids its pitfalls, takes advantage of opportunities for improvement, and preserves what is best about Pamlico.

The county also requested that the ideas provided by the Team be both widely applicable within the county and tangible—so that residents could envision ideas applied to a specific place. To accomplish this, Pamlico County officials directed the Team to use the town of Grantsboro as a model for demonstrating how the county, and its incorporated areas, might grow and stay true to its character and values.

## 2.2 The Technical Assistance Site Visit

A well-articulated vision for the future, backed by public investments and policy, can leverage private-sector development by providing consistency, predictability, and stability for its investments. A vision is also necessary to guide planning, create public support, and give the community a shared foundation to fall back on when development disputes arise.

Before developing any growth options, the Team had to understand what Pamlico County public officials, businesses, and residents want the county to be like in the future—how it would function, what amenities it would provide, what it would look like, and how it would feel as a

[3] Annual Estimates of the Population for Incorporated Places in North Carolina, Listed Alphabetically: April 1, 2000 to July 1, 2005: www.census.gov/popest/cities/tables/SUB-EST2005-04-37.xls

place. The Team reviewed the county's comprehensive plans; examined current and proposed development projects; toured the towns of Grantsboro, Alliance, and Bayboro; and reviewed environmental, land use, and economic data. Most important, during the site visit, from December 5 to December 7, 2006, the Team conducted interviews with key staff and stakeholders and met with more than a hundred local residents in public meetings. From these interviews, a set of shared values and ideas about the future of Pamlico County communities emerged. Residents value:

- Pamlico County's rural character;
- The opportunity to walk to local destinations;
- Traditional North Carolina towns;
- A variety of housing choices;
- Maintaining each town's individual sense of identity;
- Avoiding congestion on Hwy 55 following the upgrade;
- Land development policies that are not cumbersome, rigorous, or overly prescriptive;
- Complementary land uses;
- Provision of proper facilities for youth such as community centers, recreational areas, or parks;
- Development that makes it easy for people to drive less if they choose and that reduces gas consumption;
- Development that is sensitive to the area's heritage;
- Reducing crime and the perception of crime;
- Clear direction from the county to facilitate better growth and development outcomes;
- Cooperation and collaborative problem solving, locally and regionally;
- Pamlico County's scenic assets;
- A local commitment to planning;
- Communities that are not enclosed or set apart by walls, fences, or controlled entrances;
- Walkable communities;
- Maintaining a sense of identity throughout the highway corridor as motorists drive from one community to the next;

- Retaining the natural aesthetic features such as wetlands, farm fields, and forests that make the edges of the corridor look appealing from the highway;
- Reducing billboard clutter; and
- Preventing hodgepodge development patterns.

In addition, certain potential futures were clearly undesirable to nearly everyone. For instance, participants identified the town of Havelock as an example of what they did not want to see happen to their community. The unrelenting retail development – gas stations, fast food restaurants, dollar stores, t-shirt shops, and auto parts stores – lining Hwy 55 from the county line in the west to Bayboro in the east was nearly universally deemed unacceptable. However, public officials and community residents recognize that, absent a positive alternative vision for the future, the pattern of development currently found in Havelock is the likely future for development along Hwy 55.

*Figure 2. Pearls on a Strand – A depiction of Grantsboro, Alliance, and Bayboro as nodes connected by Hwy 55.*[4]

[4] Google Earth

## 2.3 Structure of the Technical Assistance Report

During the technical assistance site visit, the Team used the term "pearls on a strand" — suggested by the way the towns are strung along Hwy 55 — to describe an overall vision for the county. In this vision, towns thrive economically, providing a range of housing choices; the ability to walk, bike, or drive from homes to parks, stores, and amenities; and a "small-town feeling" that is in keeping with the county's rural heritage. The areas outside the towns are rural and not a long strip of development lining the highway and interfering with traffic movement. The "pearls on a strand" description guided the Team's work and serves as the organizing theme for this report:

- *Building Towns* describes techniques for managing development in the towns (the pearls) to fulfill the goals of Pamlico County's residents;

- *Managing the Areas Between the Towns* describes options for maintaining the rural character of the areas along the highway between the towns (the strand);

- *Implementation Options* discusses actions the county can consider to get the type of development its residents want; and

- *Appendices* provide more in-depth information about the ideas discussed in the report.

The Team did not have to go far to find examples to illustrate important points. Eastern North Carolina has a tradition of building great communities. Edenton in Chowan County; Columbia in Tyrrell County; Jackson in Northampton County; and downtown New Bern in Craven County are communities within North Carolina's "Coastal Plain" that have successfully used techniques that Pamlico County could use to achieve its goals, such as: adding street grids; offering transportation choices; providing open space and public space; and encouraging compact development as well as a mix of uses that are easily accessible. In part, these elements have made these communities distinctive and memorable.

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# 3 BUILDING TOWNS

A town is a municipal body that is considered smaller than a city. The Team prepared this section to elaborate on some of the elements that are associated with towns that typify smart growth patterns of development. The rest of the section will offer discussions about:

- Edges and nodes;
- Town core;
- Streets in town;
- Housing; and
- Other elements for towns.

## 3.1 Edges and Nodes

The rural land surrounding a village, town, or city provides the separation essential to a freestanding community. However, communities can become indistinguishable when they grow together.

During the technical assistance meeting, the Team offered the observation that while residents know when they leave Grantsboro and enter Alliance, visitors may have no clue if it were not for the signs announcing the town limits. This comment was prompted by the residential and commercial development along Hwy 55, and interspersed among the widespread tracks of farmland and open space, especially in the areas that extend beyond the borders of the towns.

As the population grows, maintaining a clear edge between town and country is an important step Pamlico County can take to retain rural character. The opposite of maintaining a clear edge is haphazard development patterns that are inefficient and unattractive. Along some sections of Hwy 55 in Pamlico County, dispersed, decentralized, and auto-oriented strip development is already evident. Fortunately, it is not the prevailing development pattern in Pamlico County, and local officials could work cooperatively with each other to discourage patterns of development that are inconsistent with rural or small-town character.

The county can maintain separation between towns by directing new development to towns along Hwy 55 and accommodating limited development in the intervening areas. This type of "nodal" development directs growth toward existing communities that already have the infrastructure and facilities to accommodate new development efficiently.[5] The nodal pattern could be applied in the communities intersected by Hwy 55 (Grantsboro, Alliance, Bayboro, Stonewall, etc.) to create and reinforce distinct edges around towns. These nodes of higher-intensity, mixed-use residential and commercial development would be interspersed with stretches of open space.

Another means to distinguish the border of the town core along the right of way is to add a gateway. Community gateways represent the front door to a community. Community gateways can be defined through a variety of methods, manmade or natural. Structural gateways include

[5] Nodal development concentrates mixed-use development (such as commercial, office and higher density residential) to provide required densities and service to foster community hubs where daily services can be reached within walking distance.

roundabouts, gates, monuments, bridges, walls, a fork in the road, a general store, or a church. Natural gateways include river bends, valleys, a clearing, parks, landscaping, or hills.

Effective gateways are easy to recognize, and they are normally incorporated into the community's landscape as a landmark or a point of reference. In addition, gateways that capture the affinity of citizens can reinforce a sense of identity through branding. Therefore, communities can exercise their creativity when establishing gateways, and use the gateway as a means to make a bold statement about themselves.

*Figure 3. The communities of Bayboro and Stonewall share a gateway that consists of structural and natural elements in the form of the Bay River and the bridge traversing it.*[6]

## 3.2 Town Core

Concentrating development in a node does not guarantee there will be a "there there." At the public meetings, residents consistently frowned on communities that lacked a "sense of place." In addition to having a distinct edge, the towns identified by citizens as models for the future generally had an identifiable center.

A town core could be defined by a five-minute walking distance in all directions, radiating from a central point. A five-minute walk is approximately a quarter of a mile, and development makes walking convenient when it accommodates a mix of goods and services within that quarter-mile distance.

[6] Carlton Eley

In Figure 4, the dotted blue line shows the boundary for Grantsboro's town core, which extends a quarter-mile from the intersection of Highways 55 and 306. The photo shows that Grantsboro can accommodate additional development in the node while maintaining much of the natural landscape that residents value on the periphery of the node.

*Figure 4. The town of Grantsboro can encourage an efficient pattern of development by directing growth to existing communities.*[7]

Figure 5 compares the boundary for the node with the boundary for the town of Grantsboro. The area of the town core is modest in comparison to the rest of Grantsboro.

A well-defined town core offers a range of benefits. When designed well, the town core can accommodate complementary land uses such as residential and retail within walking distance of one another. By offering different types of development and different levels of density, a town core can help a community achieve its goals for more housing choices, more economic opportunities, and more transportation options.

In addition, building at higher densities consumes, or converts, less land. In contrast, lower-density development always requires more land than higher densities to accommodate the same amount of growth. By concentrating development within a smaller area, communities can reduce land consumption while protecting valuable open space, habitat, farmland, and ecologically sensitive areas.

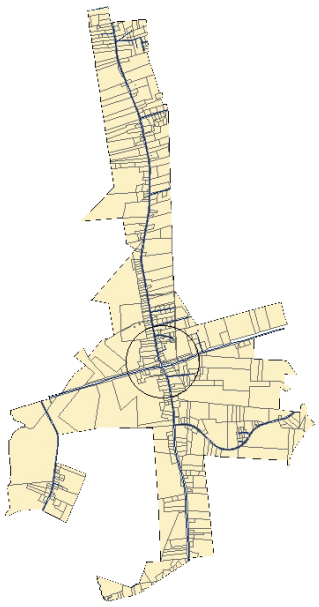


*Figure 5. Corporate boundaries for the town of Grantsboro. The circle represents the town core.*[8]

[7] Google Earth
[8] Pamlico County Department of Planning

**Town Core Segments**

A network of local streets, connectors, minor arterials, and major arterials serves Pamlico County. Even though Hwy 55 is the focus of the technical assistance project, the Team could not study it in isolation. This is certainly the case for the town of Grantsboro because two highways intersect at the heart of the community, Hwy 55 and Hwy 306.

Because Hwy 306 is a two lane arterial and Hwy 55 is being expanded to a five-lane arterial, the Team has to be sensitive to identifying options that are appropriate for the town core segments of each arterial. For example, the Team stressed that the popular techniques applied by the National Trust for Historic Preservation's "Main Street Approach" would be appropriate for the town core segment of Hwy 306, but they would be less suitable for Hwy 55.[9] In short, a "one-size-fits-all" approach may fall short of fulfilling the goals expressed by Pamlico County's citizens.

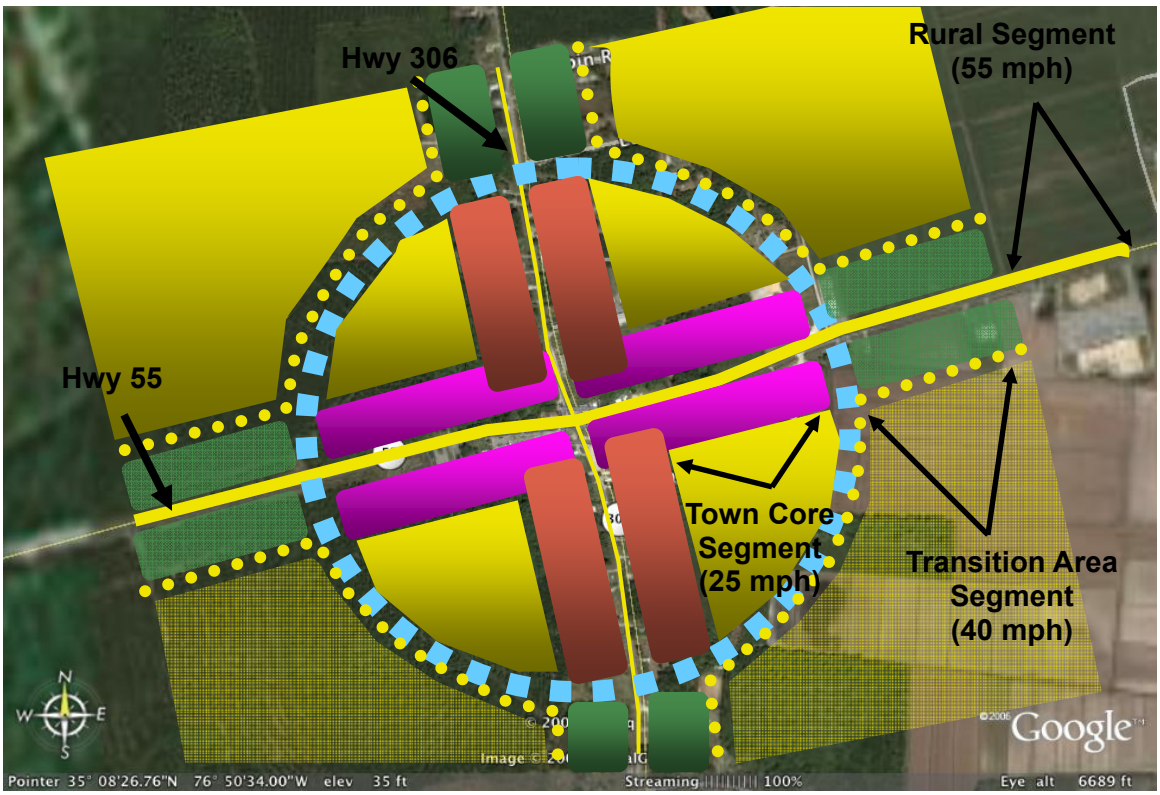



*Figure 6. Diagram of highway segments.*[10]

[9] The aim of NTHP's Main Street Approach is to rebuild traditional commercial districts based on their unique assets: distinctive architecture, a pedestrian-friendly environment, personal service, local ownership, and a sense of community. Traditional commercial districts do not feature five lane arterials. Arterials of this scale are more commonly associated with suburban commercial strips. Because Hwy 306 is still two lanes, the techniques of the Main Street Approach, especially creating a pedestrian friendly environment or establishing a sense of community, may be applied more successfully. To learn more about the Main Street Approach, go to www.mainstreet.org/content.aspx?page=3&section=2.

[10] Base map: Google Earth

Town core segments make up a relatively short amount of Hwy 55.[11] These segments include parts of the downtown, central business district, or town center and might be only 4 to 8 blocks long.

To function well, the town core segment of a major or minor arterial must balance local access and pedestrian safety with through travel on the highway. In the case of Hwy 55, the goal would be to encourage a development pattern that allows patrons to park once along the arterial and walk to stores, restaurants, and other businesses within the node. In addition, the town core segment should feature frequent street connections as well as a posted speed limit of 25 mph.

**Transition Area Segments**

Because the town core segments are short, the section of highway between a town core and the rural area is very important. Drivers who have been traveling on a relatively high-speed rural section need a transition area in which to decelerate to a speed appropriate for a town. In some instances, a gateway into downtown can reinforce the area of transition. Further, some of the context sensitive and town-oriented solutions that would be applied to the streetscape and building form within the town core could be used in the transition area to prepare drivers for what lies ahead. They include, but are not limited to:

- Encouraging pedestrian friendly design;
- Providing development that is human scaled;
- Using medians to reduce left turns;
- Calming traffic;
- Completing the street to facilitate multiple modes of travel; and
- Managing access.

These solutions will be discussed in the subsections *"Managing the Highway as it Goes Through Town"* and *"Managing Other Roads in Town."*

## 3.3 Streets in Town

Perhaps more than anything else, the street network — its pattern, frequency of intersections, and how the streets relate to the surrounding land uses — defines how the town feels and functions for both people and traffic. The Team heard that residents would like Pamlico's towns to offer convenient and safe transportation choices for drivers, bicyclists, and walkers, and that they want to preserve the new free-flowing capacity created on Hwy 55. Research and experience with similar communities suggest that the following factors will be important in accomplishing these objectives: *connectivity, context-sensitive design, access management, traffic calming, and walkability.*

[11] The Team designed the nodes based on a five-minute walk or the radius of a quarter-mile. The diameter of the node in Grantsboro is a half mile. In contrast, the Hwy 55 expansion is approximately 12 miles.

**Connectivity**

After a tour of Pamlico County and Hwy 55, the Team noted, "there are too many driveways and not enough intersections." In other words, there are no alternative routes to reduce congestion on the highway. Traffic is forced onto Hwy 55 because each residential and commercial property has its own entry/exit directly onto the highway, rather than an entrance onto a side or frontage street, which would then allow cars to get on and off the highway at fewer points.

*Figure 7. Aerial photo of Hwy 55 extending from Pamlico County High School to Fourth Street in the town of Bayboro. The arrows in this photo show twenty-two access points to Hwy 55 from commercial and residential properties for a 0 .3-mile span.*[12]

If the current access patterns continue, they will likely lead to the outcomes that workshop participants want to avoid — all the traffic using the state highway and slower, potentially more dangerous traffic due to all the turns on to and off the road.

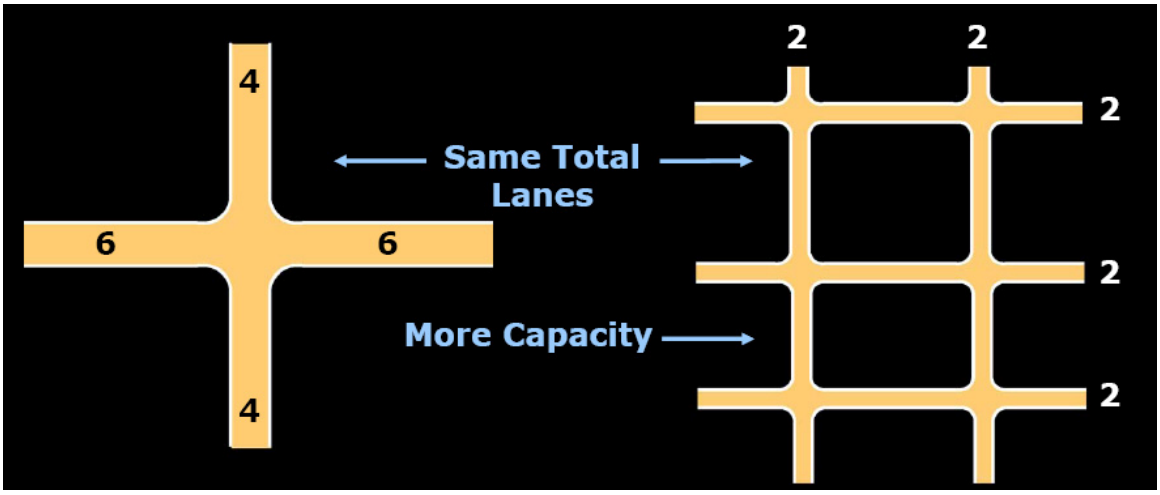



*Figure 8. A well-connected network of small streets has more capacity compared to a hierarchy of large streets. The network reduces travel time and congestion because traffic is not all on one arterial road.*[13]

[12] Base map: Google Earth
[13] Charlier Associates, Inc.

Multi-lane arterials have become a normal street pattern in towns and cities. Americans have almost forgotten that communities were traditionally platted based on a grid before ground was broken for construction of roads and sidewalks. For example, the city of Bayboro was built on a modified grid that filters local traffic (a partial grid is also evident in the neighboring town of Stonewall). A century ago, the grid facilitated pedestrian traffic as well as transport by horse-drawn carriage. Today, the street network continues to function well for automotive traffic.

As communities in Pamlico County begin to plan for their growth, it will be helpful to think 20 to 30 years into the future to identify and designate an interconnected network of roads, walkways, bicycle paths, and lanes. Doing this up front helps the private sector plan and can reduce conflict in the future by avoiding development that: is inconsistent with community goals; hampers farm production; affects ecologically sensitive areas; or does not optimize investment in existing infrastructure. The county can reinforce this network with connectivity standards requiring new roads in residential and commercial development to connect to the existing and future road networks. Then, as communities grow and develop within the road network, centers, districts, and corridors begin to create easily accessible mixed-use destinations.

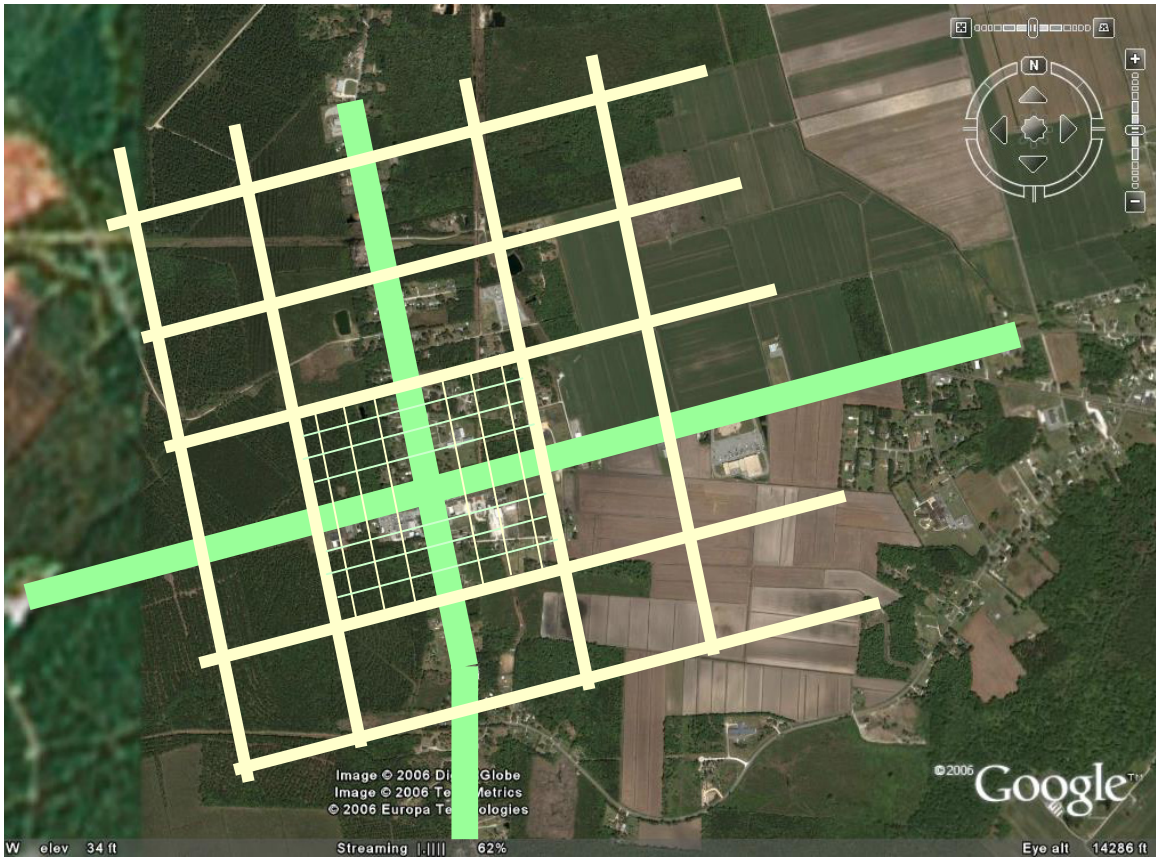



*Figure 9. Depiction of a street network, rich in connections, imposed on an aerial photograph of the town of Grantsboro. The network demonstrates how alternative routes could reduce congestion on highway arterials. In this photo, the new streets are conceptual only, rather than specific places where the Team is recommending new streets be built.*[14]

[14] Base map: Google Earth

The hierarchy of connected roads reduces travel time and congestion because traffic is not all on one arterial road. Drivers, cyclists, and pedestrians have more choices to reach their destinations, and they are safer because there is less traffic on any given street. A network of interconnected roads also improves access for emergency vehicles, allowing alternative routes in the case of a blockage or congestion.

Residents are distressed by the heavy traffic on Hwy 55. The Team noted that traffic on this arterial has increased in part because there are few route choices. Hwy 55 is the primary east-west route for Pamlico County. Residents have few options besides Hwy 55 for local trips, even very short ones, due to the lack of an extensive road network. Even bicyclists and pedestrians end up on the highway because there are few connections for them to use elsewhere. There are streets that intersect or parallel Hwy 55, but they rarely connect to each other, limiting their use as alternatives to the highway. Figure 10 illustrates the extra distance a person must travel, as well as turns he or she must make, to get to the same destination when roads are not adequately connected.

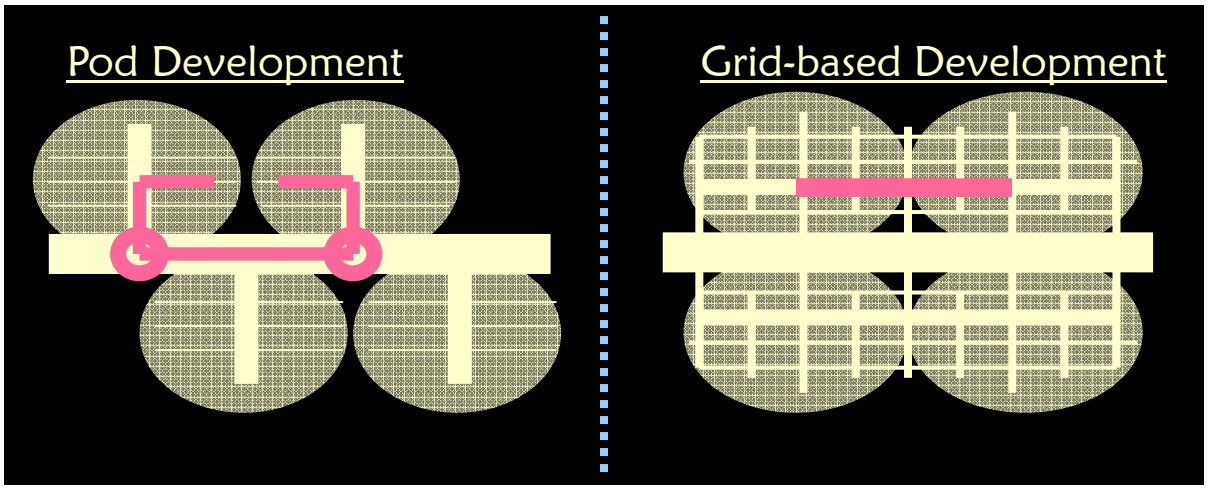



*Figure 10. Illustration of how well connected streets can shorten trip distance.*[15]

Incremental investments in a few connecting streets could improve the network dramatically. Each small segment that connects existing streets to the highway and to other neighborhoods will support a grid with more options for drivers, bicyclists, and pedestrians. This will allow residents to cross between neighborhoods without using the highway. It will also provide neighborhoods with direct access to the new shops and buildings that will eventually be added to the community nodes.

Highways are more efficient when there are consistent and adequate street connections that allow people and goods to move with as few impediments as possible. However, gated communities, private road systems, and disconnected cul-de-sac systems hinder this movement. With proper street connectivity, communities in Pamlico County can reduce the distance people must travel and make it easier for people to walk or bike.

It is difficult to create a street network where there is already development. Thus, each community must determine where it can work with property owners to get land for streets, where connections are most needed, and where it wants development to happen in coming decades.

[15] Charlier Associates, Inc.

**Managing the Highway as it Goes Through Towns**

Communities and regions generally experience changes to the landscape from development through incremental actions. However when local stakeholders are not attentive to the pace of development; where it occurs; or the pattern of the growth, the public gradually realizes that development has chipped away at amenities that are cherished by citizens or compromised the special attributes that once gave a community a sense of place. The following images are provided to illustrate the point.

*Comparing Rural and Suburban Highway Design*

Figure 11 shows a quaint two-lane highway in eastern North Carolina. Prior to the five-lane expansion, Hwy 55 exhibited similar dimensions. In this image, there is moderate change in land conversion because the highway is the only infrastructure imposed on the landscape.

*Figure 11. Highway 305 in Northampton County, NC. Two-lane rural highway bordered by mature trees. Auto-oriented snap shot of North Carolina's rural heritage. Moderate change due to land conversion (2006).*[16]

Figure 12 shows a five-lane highway with a continuous center turn lane in eastern North Carolina (Hwy 158). Hwy 55's form and appearance will be similar to this arterial once the expansion is completed. In contrast to the previous photo, the level of land conversion is noticeable. The highway is wider to accommodate regional traffic. The picture shows some decentralized settlement. The highway is not bordered by forest, but by working land. While the level of land conversion is pronounced, the features that are commonly associated with rural regions are still present.

*Figure 12. Highway 158 in Currituck County, NC (Mainland).Five-lane suburban highway (former two-lane highway) bordered by decentralized and rural settlement pattern. Noticeable change due to land conversion (2006).*

Figure 13 shows a different view, along the same highway in Figure 12, approximately 20 miles to the south. The level of land conversion and change in the landscape is significant. It is worth noting that the highway expansion in Figure 13 preceded the expansion in Figure 12. The settlement pattern and intensity of development shown is representative of a suburban landscape. For this segment of highway, residential and commercial developments are interspersed along the strip. The sense of place is no longer evident from the viewshed. Twenty years after being upgraded to five lanes, this suburban strip is indistinguishable from any other suburban strip in the nation.

[16] Both pictures, Carlton Eley

Roads are public infrastructure, and the function of infrastructure is to improve quality of life as well as facilitate meeting the lifestyle needs of the public that uses it. The goal is to provide infrastructure and encourage responsible development in order to complement a community or region's already charming character. The following sections in this report introduce strategies, options, and examples for achieving this balance.

*Figure 13. Highway 158 in Dare County, NC (Outer Banks).Five-lane suburban highway (former two-lane highway) bordered by decentralized and mature suburban settlement pattern. Rural character is no longer evident. Significant change due to land conversion (2006).*[17]

*Highway-Oriented and Town-Oriented Development Patterns*

Highway 55 is a narrow ribbon of asphalt, winding through the countryside, crossing Pamlico County from east to west. Local citizens have been adamant that, as the highway widening is completed, they do not want the county's rural character compromised by wall-to-wall commercial structures and billboards hovering at the edge of the roadway.

Conventional highway-oriented development patterns are based on dispersed, low-density development, which isolates various land uses, such as residential, office, and retail. Such patterns rely almost exclusively on automobiles as the mode of travel. Such uses facilitate mobility for vehicles at the expense of walking, biking, and other forms of travel.[18] As a result, citizens may be dependant on their cars for extremely short trips to satisfy basic day-to-day needs such as purchasing a gallon of milk.

In contrast, town-oriented development patterns are pedestrian friendly and human scaled, exhibit narrow and uniform setbacks, have locally owned shops, and include design elements to facilitate convenience for varying modes such as street furniture, bike racks, landscaping, and verandas/awning to reduce exposure of patrons to inclement weather.

Once the expansion is complete, Hwy 55 will no longer be a gentle country road in Pamlico County. It will function like a regional highway or principal arterial, and traffic will increase. However, the future character of the road and the landscape that borders it can still be shaped. Local participants in the community meetings were clearly seeking a future that maintains the rural character and sense of place. Working with localities and landowners, the county can retain its rural integrity by taking steps to manage the development that occurs along Hwy 55.

[17] Carlton Eley
[18] Mobility refers to the movement of people and goods within the transportation system.

*Figure 14. Visualization of town-oriented development along a two-lane highway in Clever, MO.*[19]

*Context-Sensitive Options for Highway 55 within Towns*

The essential challenge is to manage local and pass through traffic on Hwy 55 as it goes through the towns. Other states have done extensive work on how to manage similar design and planning challenges. Three guidebooks would be particularly useful resources as the communities think about the future of Hwy 55: the Maryland State Highway Administration's *When Main Street is a State Highway;* Oregon DOT's *Main Street…When a highway runs through it: A Handbook for Oregon Communities;* and the Federal Highway Administration's *Flexibility in Highway Design*.

At a basic level, context-sensitive design incorporates the input of a wide range of stakeholders in designing or revamping a road. The approach creates roads that fit with the physical, aesthetic, environmental, social, and historic context of an area. The goals of a context-sensitive design solution include open and honest communication with the public and a road design that moves traffic, offers other transportation options, is safe for all users, and adds lasting value to a community.[20]

This kind of thoughtful land use and transportation planning can provide viable and balanced opportunities to walk, bike, or drive a car. Fortunately, the difference between the new road's capacity and the current traffic demand gives Pamlico County the flexibility to apply a wide range of context-sensitive design solutions. The traffic volumes along the highway could be easily accommodated by several designs that are supportive of a walkable, town-oriented environment. For example, two lane road designs, similar to the pocket park option in Appendix C, are capable of handling 13,000 to 14,000 vehicles per day with free flowing traffic, while four lane designs consistent with the other alternatives can accommodate roughly 35,000 vehicles per day.[21] Still, it is worth noting that the highway capacities referenced above

[19] Urban Advantage
[20] For more information on context-sensitive design, see www.contextsensitivesolutions.org.
[21] Florida Department of Transportation (2002) Quality / Level of Service Handbook, Table 4-1.

exceed the 2005 reported traffic volumes for segments of Hwy 55, which ranged from 2,700 to 10,000 vehicles per day.[22]

When the expansion is complete, Hwy 55 will be a five-lane arterial. Each lane will be approximately 12 feet wide, and each paved shoulder will be about four feet wide. From shoulder to shoulder, the upgraded highway will be 68 feet wide. However, the right of way (ROW) for Hwy 55 is 100 feet. While this leaves enough room to accommodate any of the design alternatives, even with wide sidewalks, the communities must decide what kind of dimensions fit with the character of each town. At a minimum, experience in other towns suggests that the current design of Hwy 55's upgrade will make it difficult to achieve county and citizen goals for economic development, walkability, community character, preservation of road capacity, and motorist, bicyclist, and pedestrian safety.

*Design Alternatives*

The Team developed design alternatives to compare with the planned highway design. In each case, the alternative seeks to improve walking and biking conditions while keeping traffic flowing smoothly along the highway, as the community wants. Depending on the design choices made, the alternatives could require a right of way of 80 to 100 feet. Right of way constraints are often an issue when implementing context sensitive solutions. Even when adequate right of way exists, communities must decide what design best meets their needs. Ultimately, the community must work through any tradeoffs in a collaborative design process with the North Carolina DOT. A process for envisioning the evolution of Hwy 55 would be well suited for the Strategic Highway Corridors Initiative currently run by the State DOT. Table 1 summarizes the tradeoffs for road design alternatives featured in this report.

[22] In 2005, the North Carolina Department of Transportation (NC DOT) reported average daily traffic (ADT) for highway segments in Pamlico County as follows: west of Grantsboro, ADT on Hwy 55 is 10,000; east of Grantsboro, ADT on Hwy 55 is 8,900; east of Bayboro, ADT on Hwy 55 drops to 2,700; and east of Bayboro, ADT on Hwy 304 (which converges with Hwy 55) drops to 4,300.

*Table 1. Evaluating Road Design Tradeoffs Across the Alternatives*

| **Multi-modal** | **Commuter-centric (High Traffic Volume)** | **Main Street (Lane Removal)** | **Main Street (Pocket Park)** |
|---|---|---|---|
| Pros<br>• Accommodates bicycles<br>• Improves left turn safety<br>• Improves traffic flow by limiting left turns<br>• Median serves as a pedestrian refuge at intersections | Pros<br>• Dual use of outside lane for parking and peak hour travel increases flexibility<br>• On street parking and wider sidewalks support street front retail / commercial development | Pros<br>• Curb extensions and parking lanes reduce crossing distance at intersections by 40 percent<br>• Drivers perception of road and lane width reduces speeds<br>• On street parking and wider sidewalks supports street front retail / commercial development | Pros<br>• Creates a significant community public space and opportunity for "placemaking"<br>• Curb extensions and parking lanes reduce crossing distance at intersections by 40 percent<br>• Drivers perception of road and lane width reduces speeds<br>• On street parking and wider sidewalks supports street front retail / commercial development |
| Cons<br>• Sidewalks may be too narrow for a downtown setting | Cons<br>• Wider sidewalks needed to buffer pedestrians from high speed / high volume traffic<br>• Peak hour parking restriction would require enforcement<br>• Cyclists must share travel lane with vehicles<br>• Right of way required for wider sidewalks might be more than desired by the community | Cons<br>• Traffic volumes above 13,000 vehicles per day may lead to congestion<br>• Cyclists must share travel lane with vehicles<br>• Right of way required for wider sidewalks might be more than desired by the community | Cons<br>• Traffic volumes above 13,000 vehicles per day may lead to congestion<br>• Cyclists must share travel lane with vehicles<br>• Cost of creating and maintaining pocket park |

The report includes several options because Hwy 55 looks and functions differently in Alliance and Bayboro than in Grantsboro. While Hwy 55 is the physical center of Grantsboro, in Alliance, Hwy 55 was diverted around the town. In Bayboro, Hwy 55 is the primary arterial, and its official designation is Main Street within the city limits. All of the options presented in this report are intended to respond to the locations and role of Hwy 55 in the different towns, thereby reflecting the context.

The multi-modal option (Figure 15) illustrates a less significant departure from what Hwy 55 will look like when completed. The primary difference is the addition of a landscaped median, left turn bays within the median, bike lanes, and sidewalks.[23]

*Pros and cons of a multi-modal design option*

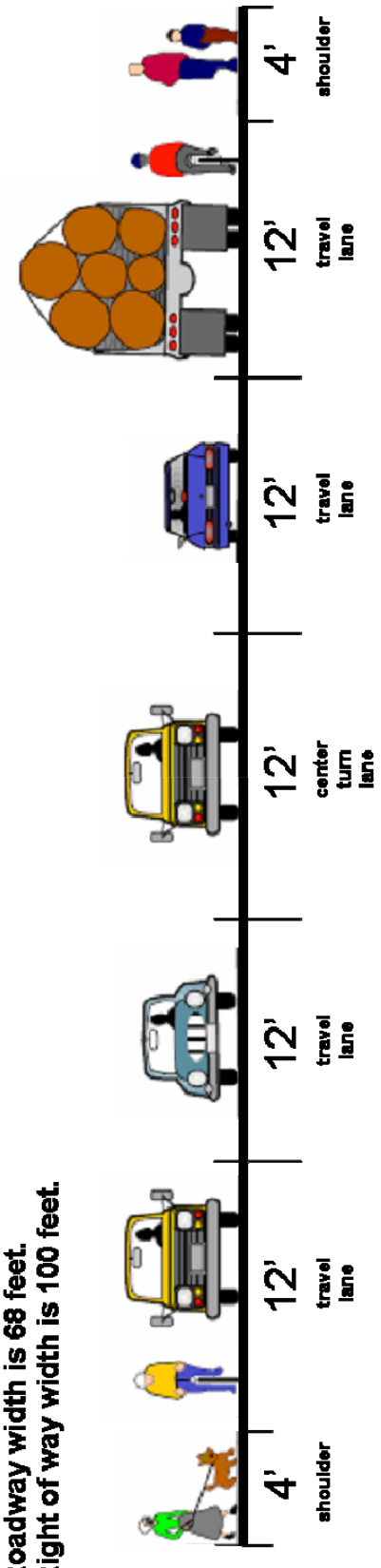
- Pros: The multi-modal approach accommodates bicyclists with a separate lane. The left-turn bays in this option would be safer than the current continuous left-turn lane. The addition of the landscaped median and left-turn bays will reduce the potential for crashes. In addition, the median reduces the number of lanes that pedestrians must cross, and it can serve as a refuge for pedestrians. Further, four travel lanes will be adequate capacity for vehicles.

- Cons: If a narrower roadway design is pursued (closer to 80 feet), the sidewalks provided in this option would likely be too narrow (six feet) for a downtown arterial to create an engaging pedestrian environment. In a downtown setting, the ideal width would be 13 to 16 feet. Using more of the 100 ft. right of way could allow the option to have the space for an ideal frontage or furnishing zone. Without a furnishing zone, pedestrians are not buffered from traffic on the street. In addition, the approach does not incorporate many measures for traffic calming, although Pamlico County is permitted by the State to adopt such measures if desired by the public.

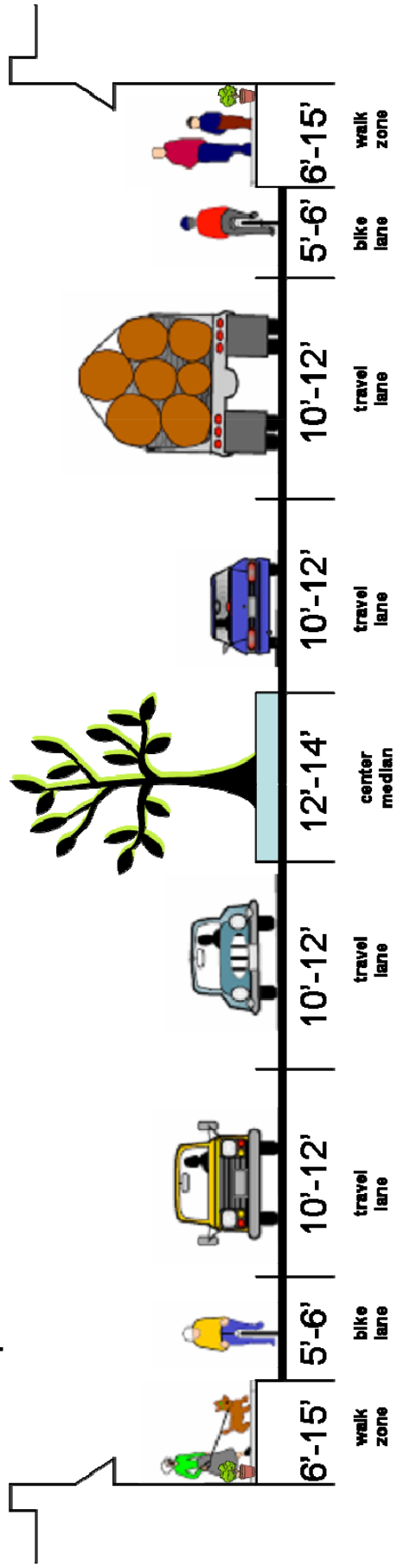
[23] Oregon Department of Transportation. "Main Street…..when a highway runs through it: A Handbook for Oregon Communities." Oregon: State of Oregon, 1999. Vehicular and pedestrian graphics were extracted from the ODOT report and incorporated into street cross-sections for Figures 15, 22, 50, 52, and 53. *www.contextsensitivesolutions.org/content/reading/main-street/resources/main-street-when-a-highway/*

Figure 15.

**Current Design - -**
**Roadway width is 68 feet.**
**Right of way width is 100 feet.**




**Multi-modal option**




**Comparison between a standard arterial and an arterial with enhancements based on the "multi-modal" approach. Widths for the enhanced option represent typical dimensions, but specific designs could vary.**

The other alternatives presented in Appendix C represent different scenarios for how Hwy 55 could function as it moves through town. As with any redesign, a community could consider only some of the design elements included in each option; recommend different travel lane and roadside dimensions; or develop completely new design concepts to determine which is most appropriate for Pamlico County and its towns. Beyond local and county cooperation, some of these options may present opportunities to collaborate with regional authorities and state entities. For example, the County can pursue options to make Hwy 55 safer for bicyclists and pedestrians through NC DOT's Safe Routes to School Program.

Finally, Pamlico County could consider the following elements to enhance the pedestrian environment in the town areas along major arterials:

- Seating – Every block of a downtown street needs places to sit, such as benches, low walls, planter edges, or wide steps;
- Lighting – Lighting for sidewalks needs to be lower, pedestrian scale, and more closely spaced than conventional "cobra head" street lights;
- Cleanliness – Trash receptacles are essential for a clean street because they silently remind people that the place for trash is in the bin, not on the sidewalk;
- Bicycle parking – Bike racks are important to encourage bicycling and to reduce pedestrian obstacles caused by cyclists chaining bikes to other objects;
- Miscellaneous street furniture – There are many kinds of street furniture that complement the character of the downtown, including drinking fountains, newspaper racks, clocks, kiosks, tree grates, and public art;
- Trees – Trees give streets a distinctive identity, provide shade and natural beauty, filter and slow rain before it reaches the ground, and provide seasonal interest while blooming in the spring or when leaves change color in the fall;
- Landscaping – Attractive landscaping that is close to the highway or on medians can make drivers more aware of their immediate environment and slow their speed, making streets safer; and
- Utilities – Utilities need to be positioned well out of the walking area of the sidewalk or placed underground.[24]

[24] Oregon Department of Transportation (1999) Main Street…when a highway runs through it. pp. 63-65, 67.

## Managing Access on Highway 55

*Access Management*

During the workshop, the Team noted, "Hwy 55 has too many driveways and not enough intersections." As a result, access management was a critical discussion point.

Good access management improves safety and efficiency on roadways by limiting and controlling access points. It entails the careful planning of how, where, and when vehicles can turn onto or off a road, by providing access to businesses and residences while simultaneously keeping traffic flowing on the road system. The result is a roadway that functions safely and efficiently and a more attractive corridor.

Access management involves both land use and transportation issues. By managing access, government agencies can increase public safety, extend the effectiveness of capacity increases, reduce traffic congestion, support multiple modes of transportation, and even improve the appearance and quality of the built environment.

The Team suggested access management techniques that reduce the number of driveways and better connect streets in the nodes and along the open highway.

Reducing Driveways within the Nodes

In Grantsboro, Alliance, and Bayboro, the Team noted many of the businesses and homes along Hwy 55 have their own driveway or multiple driveways connecting directly to Hwy 55. Many driveways on a busy street can create more potential for crashes between vehicles, hinder traffic flow, and interrupt the sidewalk. They may also make it harder for pedestrians to cross the street safely because motorists entering the road from driveways fill gaps in traffic. In addition, wide driveways allow faster turns and put pedestrians at more risk.

*Figure 16. Four driveways along a segment of Hwy 55 in Bayboro. The business on the left has three points of access to the highway (two from the front and one from the side).Sharing access with the adjacent parcel (foreground) or limiting access to a side street (the top arrow indicates the position of a local street that connects to Hwy 55) would reduce two or three highway access points featured in this photo.*[25]

Restricting driveways can be one of the most important improvements for pedestrian and bicyclist safety and for general street function. Limiting or closing driveways may be unpopular to landowners who have become accustomed to unlimited access. However, the technique can improve highway capacity and safety within downtown areas. This is usually done by limiting driveway access to right turns in and out only, or through a combination of closing driveways and shifting property access to shared driveways and side streets. To make these changes more acceptable to land owners, some communities require the driveway changes to occur upon the sale of the property.

Rear parking access and parallel street networks would permit communities to remove most of the driveways along Hwy 55 and improve the streetscape for pedestrians and bicyclists. Fewer driveways could help to improve the flow of traffic on Hwy 55 because it reduces the number of points at which cars turn onto and off the road. Finally, communities could remove some turn lanes from Hwy 55 and limit left turns to major intersections. (Please see Figures 54-60 in Appendix C for more on reducing driveways.)

[25] Charlier Associates, Inc.

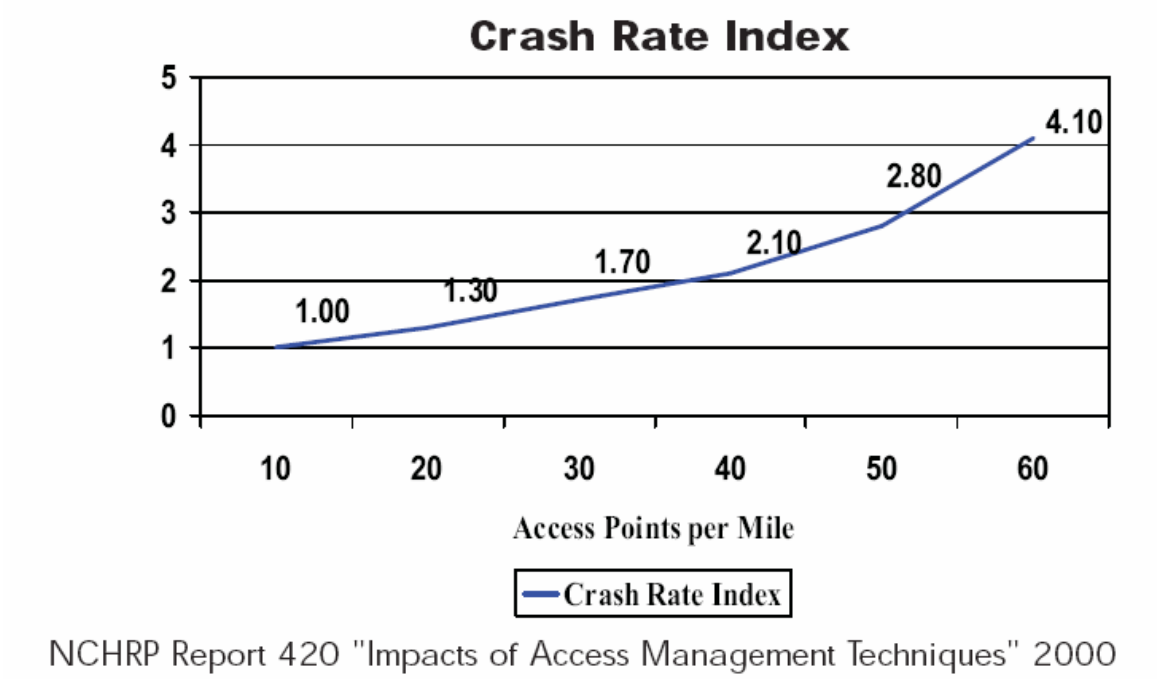



*Figure 17. Research from the National Cooperative Highway Research Program finds that crash rates increase as access points per mile increase.*[26]

Multiple driveways encourage development that is primarily accessible by automobile. Lots adjacent to the highway can be served by a backage road or local access road parallel to the highway and connected to the existing street network in certain locations.[27] A local access road would reduce the need for driveways off Hwy 55 and thus decrease turns on and off the highway. Because a local access road allows local trips to be made without using Hwy 55, the buildings along the access road could be closer to the road and create a streetscape that is more walkable and compact. Finally, the backage roads or local access roads would allow the highway to be used mostly for through traffic, which keeps traffic flowing more smoothly.

Without appropriate access management measures and strategies to manage surrounding development, Hwy 55 could experience an increase in vehicle crashes, congestion, longer commute times, ubiquitous commercial strip development, and conversion of scenic landscapes. Corridor access management strategies will extend the useful life of the highway and reduce the need for costly improvements.

Using Medians to Reduce Left Turns

Using medians to limit left turns is another technique for managing access. Studies show that, with strategic left-turn opportunities within the median, medians can make traffic flow more smoothly and safely without causing significant impacts on uses adjacent to the highway.

[26] National Cooperative Highway Research Program, Impacts of Access Management Techniques, 2000
[27] A backage road provides alternative access at the rear of properties and can help to decrease the amount of turning off the primary road.

*Figure 18. An example of retrofitting a thoroughfare into a boulevard.*[28]

Medians provide a physical separation between travel lanes, a refuge area for pedestrians, and a space for attractive landscaping. Raised medians protect pedestrians because they allow pedestrians to cross only one direction of traffic and fewer lanes at a time. In addition, medians allow a safe haven for resting while crossing if necessary. Being able to stop in the middle of crossing the road helps elderly and disabled pedestrians who might not be able to cross four lanes quickly.

A vegetated median would offer several benefits, including but not limited to: returning natural beauty to the highway corridor; reducing the amount of impervious cover for the expanded road; and traffic calming by narrowing the road. If a median is landscaped with plants, the plants should be spaced far enough apart to allow passage of pedestrians. Low-growing plants allow pedestrians to be seen by motorists.

*Figure 19. West of Columbia, NC, U.S. Highway 64 is designed as a "rural boulevard" and provides limited controlled access.*[29]

[28] North Carolina Department of Transportation (2007) "Corridor Vision," Strategic Highway Corridors. www.ncdot.org/doh/preconstruct/tpb/shc/vision/

[29] Carlton Eley

Wrap-up for Access Management

Center medians, fewer driveways, and parcel access through better connectivity and intersections can together form a comprehensive approach to manage the interactions between the highway and adjacent development, and thus fulfill the dual goals of providing efficient traffic movement and access to property.

Towns might consider an access and circulation study to determine the most effective locations for driveways, new intersections, connectivity, and left-turn lanes. With this information, towns could work with new developments to acquire access easements and site projects to accommodate desired circulation patterns. For existing properties, towns could negotiate with business and property owners to secure rear and side connections. For some property owners, the benefits of improved access will be obvious. Others may require incentives from the town or county. A Business Improvement District or a strong local chamber of commerce can help facilitate these negotiations, allowing merchants and property owners to sort through their priorities. In redevelopment areas, local and county government may have the authority to require additional access easements on existing properties, but compensation might be required for any loss of value that such an easement would create.

## Managing Other Roads in Towns

*Opportunities for Minor Arterials*

Although Hwy 55 is the main east-west route in Pamlico County, other state highways traverse the county. State highways like NC 306 and NC 304 were not the focus of the workshop. Neither was the two-lane segment of Hwy 55 east of Bayboro. However, within the town core, the minor arterials must safely and reliably accommodate local and through traffic, including pedestrians and bicyclists, and encourage driving behavior that is defensive, alert, responsible, and courteous. Such driving behavior is important in downtown locations because it reinforces the impression that the downtown is a calm, inviting, and hospitable place. For this reason, many of the approaches introduced in the previous section are applicable here as well. To avoid redundancy, this section will mainly discuss additional ideas that are more applicable for two-lane minor arterials.

Two-lane highways are narrower and carry less traffic. Drivers on two-lane highways tend to be more aware of their surroundings because they are traveling at lower speeds. These characteristics create more pedestrian-friendly communities. However, there are still more opportunities to improve the street design to make walking a viable and attractive option.

For example, understanding the relationship between the street and the buildings that line it is important for creating successful, pedestrian-friendly environments. A human-scale street reinforces a sense of place and encourages a sense of enclosure; a feeling that adds to a walker's sense of comfort. Sometimes these areas are referred to as "street rooms." The treatment of the right of way (street and sidewalks), attractively designed building facades, and ornamentation such as street lamps or banners work with the building-to-street ratio to create distinctive surroundings that people like to visit. When the front of the building is not located at the property line, building height may be less effective at creating a sense of enclosure. In such cases, a row of trees can help enclose the street (See Figure 20).

*Figure 20. Rendering and photo of "street rooms." In the photo on the right, Christ Episcopal Church (not captured in this photograph) is set back to the left of the right of way. Instead of a building wall, the mature trees along the property line of the church reinforce the sense of enclosure along this section of Pollock Street in downtown New Bern.*[30]

Within the node, the minor arterial could be treated as an extension of public space. Meaning the right of way (ROW) includes the street as well as the sidewalk, and the sidewalk portion of the ROW can serve multiple purposes. The primary purpose is to facilitate walking, but to also accommodate other forms of street-life in the form of socializing, gathering, or even dining. Street-life is a sign of vitality in a community.

Figure 22 compares a standard two-lane highway in Pamlico County and a highway with streetscape enhancements. According to NC DOT Highway Division 2, the ROW for state highways is 100 feet. For standard two-lane highways, each lane is approximately 12 feet wide, and each paved shoulder is approximately four feet wide. From shoulder to shoulder, the paved section of the ROW is 32 feet wide. In contrast, the two-lane highway with streetscape enhancements is wider to accommodate on-street parking and sidewalks.

- For the two-lane highway, the "public-friendly" approach would retain the lane widths of the standard approach (12 feet each).[31] Within the town core, the traffic lanes would be bordered by on-street parking, and sidewalks would border the parking.
    - Pros: Within the town core, the "public-friendly" streetscape is consistent with the resident's value for development that is attractive and makes it easier for people to drive less. The streetscape is now wide enough to incorporate landscaping such as a planting strip or the addition of street furniture. By adding the sidewalk, pedestrians can walk comfortably; otherwise, they would have to walk on the shoulder of the highway. In addition, the on-street parking serves as a buffer between the vehicular lane and the sidewalk. Having the parking lane next to the travel lane makes the travel lane seem narrower, which helps to calm traffic.

[30] Seth Harry and Associates, Inc. (rendering), Carlton Eley (photo)
[31] Public-friendly streets represent streets that are treated as an extension of public space and support street-life in the form of socializing, gathering, dining, and the like.

- Cons: The public-friendly streetscape falls short of being a "complete street" because it does not feature a bike lane. The term complete streets, routinely, means accommodate travel by all modes. As a result, bicyclists will have to share the travel lane with motor vehicles. Fortunately, slower speeds and less traffic normally mean fewer accidents between cars and bike riders. When the right of way will not permit a separate lane for bikers, signage can encourage drivers to share the lane with bicyclists. See Figure 21. The Team is not aware of any restrictions on bike lanes. Pamlico County is free to deviate from the design presented in Figure 22.

*Figure 21. "Share the Road" signs increase bicyclists' visibility without designating the signed roadway as a preferred route.*[32]

[32] *home.swbell.net/mpion/sharesigns.html*

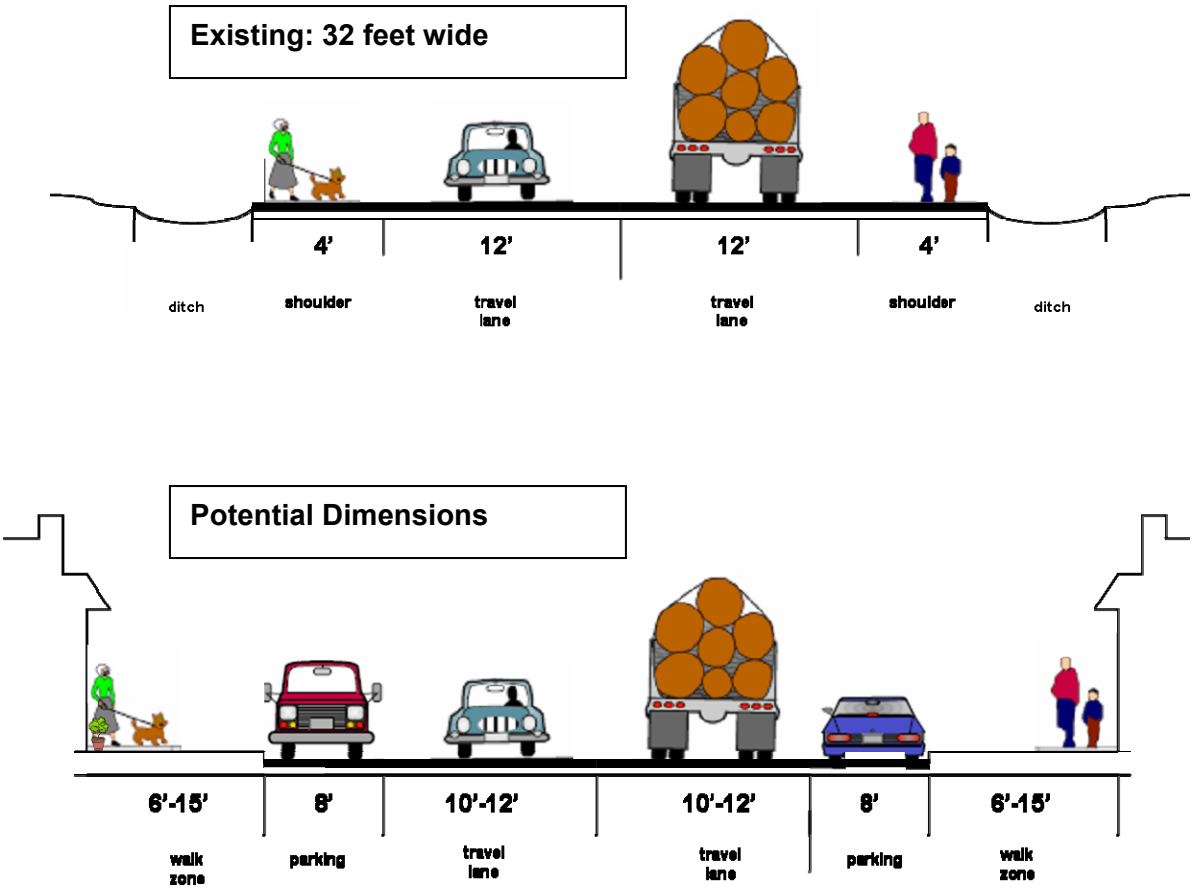



*Figure 22. Comparing an existing cross-section for a two-lane arterial with a similar arterial that is designed to calm traffic and accommodate other modes of travel for segments of the road that are within town areas.*

Along minor arterials, the edge of the node should incorporate a transition area to warn motorists that they are about to enter a new area where slower speeds are required. It should feature sidewalks as well. Another effective transition element is a gateway, such as a sign, special landscaping, or a piece of artwork.

*Opportunities for Local Streets*

Building functional towns within the nodes will require building local streets, and attention to design will be important. Most of these new local streets would be narrow neighborhood streets, designed for a mostly residential area with low traffic volume at slower speeds. (Figure 23 shows how one of these streets might look.) They should have sidewalks, on-street parking, and strips of grass, trees, or other vegetation between the sidewalk and the street. These design elements support drivers, pedestrians, and quiet residential living. The narrow lanes and on-street parking encourage drivers to drive slowly and look out for oncoming cars. The on-street parking and vegetation between the sidewalk and street protect the sidewalk to make bikers and pedestrians feel more comfortable. The street could be 8 to 10 feet wider if the town wants to allow parking on both sides of the street.

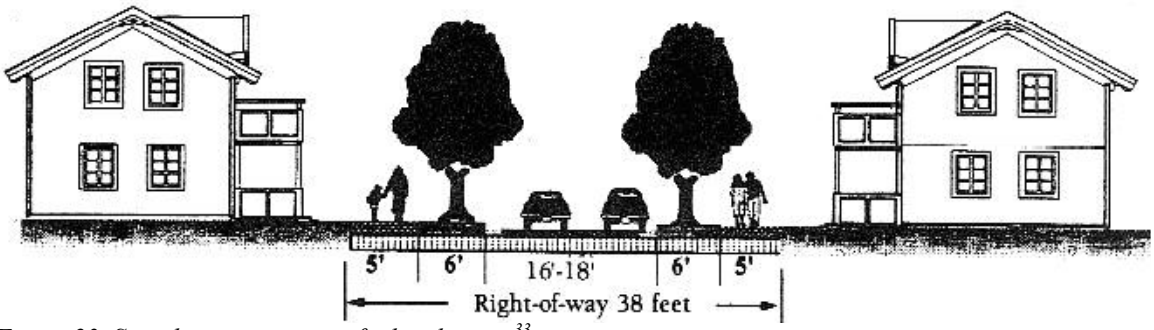



*Figure 23. Sample cross section of a local street.*[33]

Where a town thinks that street width, on-street parking, street trees, and sidewalks will not be enough to slow traffic, additional design techniques may be considered. For instance, design techniques can be used to calm streets and make them more pedestrian friendly. Traffic circles or roundabouts, raised islands at the center of an intersection, can slow high-speed traffic on neighborhood streets. The city of Seattle has found that traffic circles reduce motor vehicle accidents by 90 percent at intersections.[35] The Institute for Transportation Engineers has more information about traffic circles at www.ite.org/traffic/circle.htm.

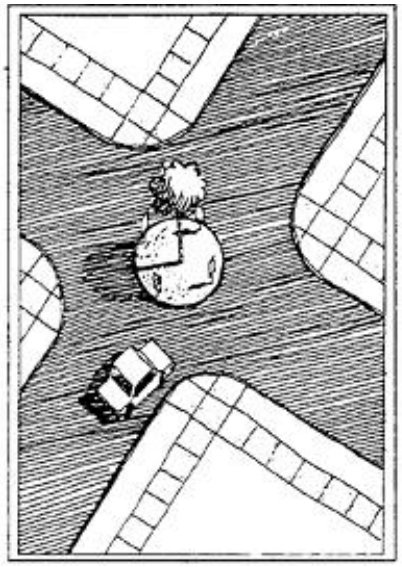


*Figure 24. Residential traffic circle at four-way intersection.*[34]

Alternatively, street connections can be designed at a slight offset to help keep neighborhood-serving streets safe and to minimize cut-through traffic. Offset intersections help ensure that approaching drivers must stop before proceeding to the next street. Details on additional traffic-calming techniques can be found in *Creating Walkable Communities: A guide for local governments.*

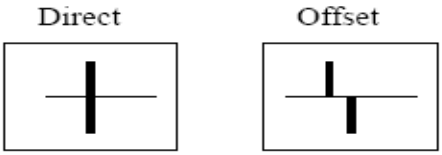



*Figure 25. Illustration of a direct versus an offset intersection.*

## Making the Streets Walkable

The Team consistently heard that making walking safer, easier, and more appealing is a priority for the county and its residents. Moreover, for many people "walkable communities" implied or evoked a number of other attributes that were also desirable.

[33] Dan Burden et al. Street Design Guidelines for Healthy Neighborhoods, Local Government Commission, 1999.
[34] Washington DOT
[35] Mid-America Regional Council [MARC], (1998) *Creating Walkable Communities: A guide for local governments.* Washington, DC: Bicycle Federation of America Campaign to Make America Walkable, p.72. www.marc.org/Community/pdf/walkable_communities.pdf

*What is "Walkable"?*

Creating a pedestrian environment involves more than laying down a sidewalk or installing a signal. A truly walkable community involves both the big picture and the smallest details – from how a town is built, to creating an inviting environment that makes people feel safe from traffic or crime, to what materials are used for footpaths. For example, the connection between land use planning and transportation planning is critical, but all too often ignored. When homes are separated from complementary land uses such as parks, offices, and stores, there will be fewer pedestrian trips because destinations are not close enough for walking. Integrating land use and transportation planning enables development of communities that meet the varied needs of residents by encouraging viable and balanced opportunities to walk, bike, or drive a car.

During the workshop, the Team described and illustrated a continuum of pedestrian environments. At one end of the spectrum are "pedestrian places and districts," and the opposite end features "pedestrian intolerant environments" (Table 2).

*Table 2. Pedestrian Environment Continuum*

| Pedestrian Environment Continuum | | | |
|---|---|---|---|
| **Pedestrian Place/District** | **Pedestrian Supportive Environment** | **Pedestrian Tolerant Environment** | **Pedestrian Intolerant Environment** |
| • Mixed use with retail<br>• Gathering place – identifiable as a PLACE<br>• Significant pedestrian presence<br>• Supportive transportatio n required (parking, transit, bike) | • Mixed use including residential<br>• May include gathering PLACES<br>• Pedestrians present at busy times<br>• Motor vehicles present, do not dominate | • All land uses except freeway & certain special uses (airport runway, garbage dump, etc.)<br>• Utilitarian walking and rambling only<br>• Motor vehicles present, may tend to dominate | • Any land use<br>• Little or no walking<br>• Motor vehicles dominate<br>• Unsafe, unpleasant |
| **Pedestrian Friendliness** ⟷ | | | |

It is neither realistic nor necessarily desirable that all of Pamlico County be walkable. This section will explore how to be strategic in making improvements to achieve walkable communities within the nodes.

*Walkable Districts*

The first step in providing both utilitarian and strolling environments for pedestrians is good sidewalk design.[36] The preferred sidewalk width in a downtown is 12 feet. This width allows pairs of pedestrians to walk side by side or to pass each other comfortably. It generally provides enough width for window-shopping, some street furniture, and places for people to stop. More width is desirable to accommodate sidewalk cafes and other outdoor retail (a minimum of 15 feet).

In general, the wider the sidewalk, the more pleasant the pedestrian experience. Where it can be justified and all other measures have been examined (such as eliminating medians or travel

[36] Utilitarian represents a form of walking where the objective is to accomplish a task rather than serve as structured exercise.

lanes), the sidewalk width can be as narrow as 8 feet. A narrower sidewalk would be appropriate along minor arterials such as Hwy 306.

*Figure 26. Sidewalks along Main Street in Edenton provide ample space to accommodate displays, planters, windows.*[37]

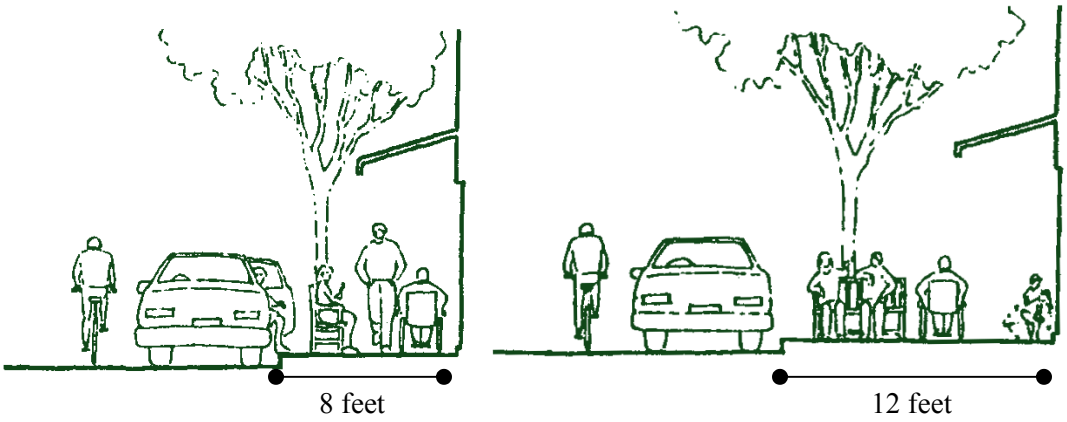



*Figure 27. Renderings compare sidewalk width and the effect on pedestrian comfort.*[38]

[37] Carlton Eley
[38] Oregon Department of Transportation, 1999.

While sidewalks are important to make walking easier and safer, managing public sidewalk space, lighting, landscaping and trees, and maintenance is critical to making sidewalks serve their intended purpose.

In managing sidewalk conditions in downtowns and village centers, it can be helpful to look at the space between the edge of the roadway and the right-of-way line in terms of three functional zones (See Figure 28):

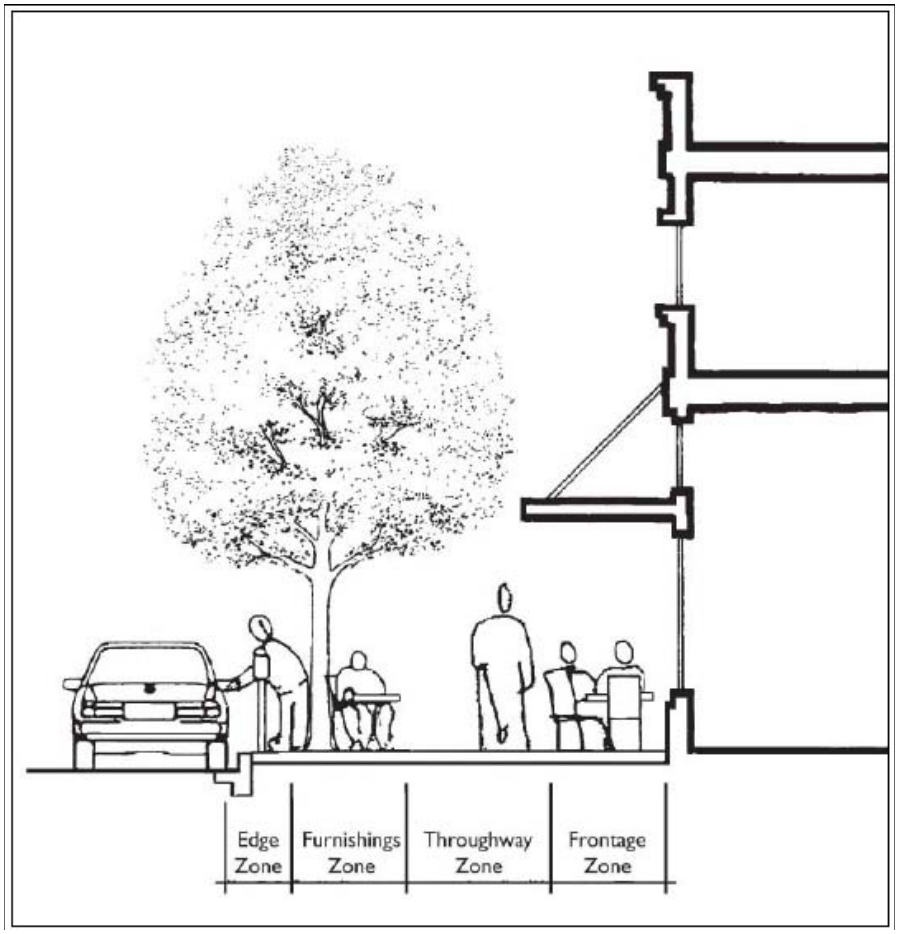



*Figure 28. Diagram of the three pedestrian zones. The buffer zone consists of the "edge" and "furnishings" zones.*[39]

1. Buffer Zone. Also, know as the "roadside zone" or "fixture/furniture zone." This area buffers pedestrians from the roadway and provides a place for trees, signal poles, signs, streetlights, and bicycle parking. It includes all features between an adjacent travel lane and the pedestrian through zone, including on-street parking and green strips. This is the area where people enter and exit parked cars and may be part of the paved sidewalk or an unpaved green strip.

2. Pedestrian Through Zone. Also known as the "pedestrian travel zone." This is where most people walk. It should be clear of any objects or intrusions, permanent or temporary.

[39] Community, Design + Architecture

3. Building/Right-of-way Zone. Also known as the "building frontage zone." It is the area between the pedestrian through zone and either the front wall or adjacent buildings or the edge of the right of way. In downtowns, it is where people window-shop, enter and exit buildings, and sit at outdoor cafes.

The pedestrian through zone is the most critical element for pedestrian travel. In downtowns and village centers, adequate buffer and building zones are necessary to maintain a usable pedestrian through zone. While the pedestrian through zone is important, the three zones must function together. For example, the buffer zone makes the walk feel comfortable or safe, and the building/ ROW zone makes the walk interesting and appealing. The synergy of the three components produces an active streetscape that functions as an exciting destination as well as a corridor.

*Figure 29. Labeling the sidewalk functional zones along Main Street in Edenton.*[40]

In many districts, commercial and residential buildings are intentionally set back from the street. However, good downtown buildings on commercial streets, with few exceptions, face the street and are located at the property line. In other words, there is little space between the front of the building and the sidewalk. The front entrance faces the street and is usually emphasized by the building's architecture.

Windows and entrances right along the sidewalk are critical for a comfortable pedestrian environment. A continuous row of buildings with windows and entrances along the street creates an interesting and secure walking environment. People will often walk longer distances if their route takes them along visually interesting buildings.

[40] Carlton Eley

*Figure 30. Active ground floors and charming building design make downtown walks interesting and entice citizens to get to know their community by foot.*[41]

Picturesque images of main-street life in small towns include structures that are two to three stories tall, forming an unbroken wall of buildings along a block. Building heights have a strong influence on the feeling of the downtown. Architects and planners tend to agree that the best building height to street ratio is 1:2 to 1:3. This provides a pleasant sense of enclosure to the street. When downtowns do not already include taller buildings, ordinances can be revised to encourage and accommodate new buildings that support pedestrian friendly design.

In contrast to downtown settings, development in residential neighborhoods may exhibit greater setbacks (but still not very large), and the windows of homes tend to be raised to give occupants privacy. As a result, the principles introduced in this section are subject to change when applied to residential streets within the town core. For example, sidewalks in residential neighborhoods may be a minimum of 5 feet wide.

In addition to adding sidewalks in residential neighborhoods, it is important to make the places people walk attractive by providing shade trees, lighting, and benches at appropriate places. It also means keeping sidewalks well maintained and free from encroachment from shrubs or parked cars.

Other techniques for residential neighborhoods include connecting streets to facilitate movement throughout the neighborhood. A highly connected street pattern in a walkable community is composed of smaller block sizes to minimize walking distances between destinations. The scale of residential lots and ownership patterns lends itself to smaller blocks than commercial areas. Cul-de-sacs are discouraged because they fragment the neighborhood, isolating homes from other activities. Finally, the street width can be narrowed to calm traffic and make the streets safer. See Figure 23 for a sample cross section of a residential street.

[41] Carlton Eley

**Other Elements for Town Streets**

Most people think of streets as a means to move traffic, and they are. However, close study of streets reveals that when they are done well they perform several functions at the same time. The key is to create streets that recognize and respect their context—this means that a street in a neighborhood is different from a downtown street, which is different from a connector and different from the highway. Downtown streets can become destinations worth visiting, not just routes to and from work. Neighborhood streets can be places where parents feel safe letting their children play. In addition, commercial strips can be redeveloped as boulevards, safe for walking and cycling, allowing for faster through traffic as well as slower local traffic.

*Figure 31. Rendering of a town streetscape that balances the needs of creating a great place for visitors and patrons as well as conducting traffic.*[42]

The following principles are often used to create great streets that respect their community context, fit the community's vision, and move people as well as vehicles.

*Resist the Urge to Plan for Speed Everywhere*

Speed diminishes the sense of place. Town centers are destinations, not drag strips. Town center commerce needs traffic: foot traffic and slower auto traffic.

[42] Michael B. Morrissey

There is an inverse relationship between the speed of an automobile and the likelihood of a pedestrian surviving a collision (Figure 32). For example, a pedestrian struck by an automobile traveling at 30 miles per hour has a 55 percent chance of surviving; however, the survival rate increases to 95 percent if the car is only going 20 miles per hour. Slower traffic also provides more time for pedestrians and automobiles to avoid a collision.

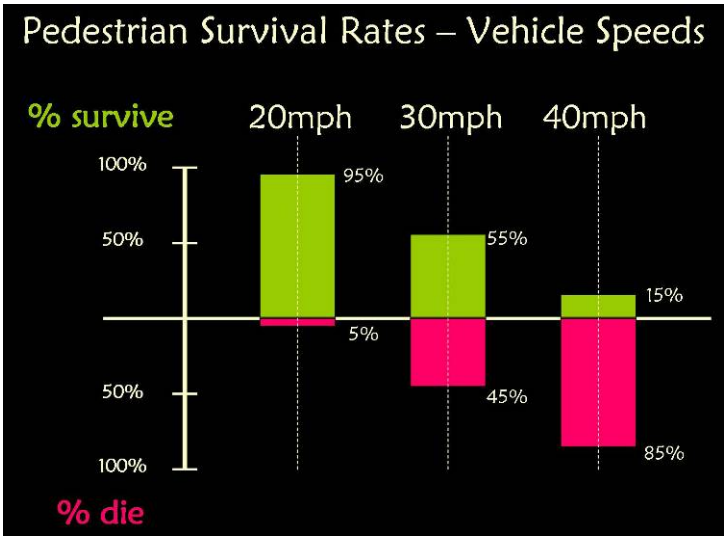



*Figure 32. Relationship between traffic speeds and pedestrian survival rates.* [43]

Fast-moving vehicles can intimidate pedestrians, and drivers moving too quickly are less aware of their surroundings. Streets can be designed to create an environment where drivers will realize that to drive too fast or too aggressively is inappropriate, anti-social, and uncomfortable. Access, not automobiles, should be the priority in town centers. To be sure, cars have their place in town centers; however, they should respect the town center atmosphere, and the pedestrian should have equal or greater attention.

*Think of Streets as Public Space*

Sidewalks, roads, and parking lots can serve more than one mode and one purpose. Sidewalks are conduits for pedestrian traffic. Making them wide, well lit, stylish, and accommodating with benches, outdoor cafes, and public art can enhance the pedestrian experience and make walking more attractive. Roads can be shared spaces with pedestrian refuges, bike lanes, and on-street parking. Parking lots can become public markets on weekends.

*Naturalize the Street*

Trees are one of the few elements of a street, along with well-designed buildings, that can be large and yet still effectively be of human scale. Trees help create places where people want to be, and they make places inviting and memorable. Trees can create a frame around a street, and such "outdoor rooms" enhance the environment for non-motorists. Where climate and soil conditions permit, trees can line the

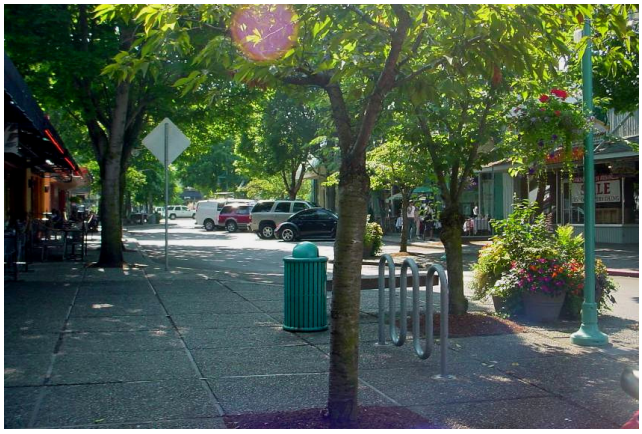


*Figure 33. Town center corridor incorporating "Great Street" elements in Kirkland, WA.* [44]

[43] Charlier Associates, Inc.
[44] Charlier Associates, Inc.

streets. A planting strip at the curb and parallel with a street can provide some additional buffering to adjacent land uses and non-motorists.

*Select Proper Illumination*

Neighborhood character can be enhanced using more frequent, smaller lights scaled to the pedestrian level as opposed to fewer high-intensity lights (such as cobra-head light poles). This is consistent with the goal of keeping elements of a street at a human scale. In addition, it allows for aesthetic goals, such as permitting residents to see the night sky (which is not possible under large lights).

*Engage Visual Senses through View Termination*

The terminated vista — a view that focuses on a consciously chosen object or scene — is one of a number of tools that are useful to town center design. Historically, the terminated vista was usually reserved for important civic buildings. The technique bestowed dignity and prominence on community facilities such as post offices, libraries, city halls, churches, convention centers, and performing arts centers. Additionally, terminated vistas make walking more pleasant by giving the pedestrian a "goal" to walk toward or a destination to reach. As a result, the walk does not seem endless. Such vistas also make trips easier by helping to orient people.

*Figure 34. Rendering of a terminated view.*[45]

[45] James Wassell

## 3.4 Housing

By creating a wider range of housing choices, communities in Pamlico County can use their infrastructure resources more efficiently and better accommodate the housing needs of all residents. Housing is a critical part of the way communities grow, as it constitutes a significant share of new construction and development.

Changing demographics mean the standard post-World War II approach — one that emphasized the construction of single–family, detached homes — may no longer adequately meet Pamlico County's changing housing needs. While the single-family, detached home will remain the preferred housing product for many, demand is growing for alternatives.

There are many opportunities to expand the range of housing choices. Housing choices in new developments can be diversified by modifying land-use patterns for greenfield sites. Existing neighborhoods can benefit from a wider range of choices by increasing the type and quantity of units provided. For example, many communities are rediscovering the virtues of cottage housing, which allows local officials to increase the number of housing units without sacrificing community character. The Mill Village in Edenton is a prime example of cottage-style housing.

Opposition to compact communities is sometimes based on the perception that buildings will be ugly or poorly designed and will offer little or no privacy to residents. Careful design can ensure that compact development blends in with the community around it and serves the needs of those that reside or work in the community. When buildings are designed well, residents and building users can benefit from the amenities that accompany attractive, compact communities, without sacrificing personal privacy. See Figures 36-38 for illustrations and photographs of appealing compact design.

*Figure 35. Originally constructed as housing for workers and supervisors of the former Edenton Cotton Mill, these cottages have been restored and are now occupied by new owners.*[46]

During the workshop, participants raised concerns about the lack of affordable housing. The citizens of Pamlico County are receptive to growth and the opportunities that change provides, and they believe that Pamlico County is a great place to live. Equally important to citizens is a housing strategy that understands and responds to the community's needs. Stakeholders felt that teachers, nursing aides, store clerks, emergency responders, and service and restaurant workers should be able to afford residences near where they work.

Pamlico County officials can consider the following policies to help ensure an adequate supply of affordable housing.

- Streamline the development review process when projects include affordable housing units. Affordable housing production can be hampered by cost and time delays due to regulations and administrative oversight. Municipalities can ease the process by granting

[46] Carlton Eley

quicker approval if a certain percentage of housing units in a development is affordable to lower-income households. Assurance of a high-quality finished product and engaging stakeholders to determine the rules for granting streamlined permits are vital to the success of this strategy.

- Create a regional program to encourage all communities to include a fair share of affordable and moderate-range housing. Fair-share housing-allocation plans can ensure that adequate housing opportunities exist regionally. When all local governments within a region comply with their "fair share" of affordable housing (as determined by population, projected job growth, existing jobs-housing imbalance, and the like), the risk of clustering low-income households in only a few areas drops. It also ensures that the potential costs to localities of providing low-cost housing are equally distributed between the region and that lower income citizens have a chance to live near job centers.

- Enact ordinances that require a certain percentage of affordable housing in new housing developments. Inclusionary zoning offers a way to both create affordable housing units and achieve a great range of choice in housing location for below-median-income households. The distribution of housing that inclusionary zoning can help achieve throughout a region ensures that more opportunities exist for households to live near jobs, services, and other resources.

**Housing in Towns**

The housing market is not monolithic, and a one-size-fits-all approach to subdivision building will not meet the demand for greater choice in Pamlico County. For example, demand nationally is strong for the types of neighborhoods that were common before World War II — compact, walkable neighborhoods with access to shopping and services, as can be seen in towns like Davidson, Belmont, or Franklin. The demand is driven by a shift in demographics — the surge in empty nesters and smaller families -- and changing consumer preferences. Established neighborhoods within existing communities are being rediscovered in Eastern Carolina. For example, the towns of Edenton and Columbia are textbook examples of "traditional neighborhood design" and represent a popular alternative to conventional subdivision patterns of development.

*Figure 36. Rendering of town dwellings of varying styles.*[47]

Pamlico County has the opportunity to encourage residential infill. During the workshops, community members expressed support for a range of housing choices, including some that people of more modest incomes can afford. Town dwelling development could take the form of small-lot, single-family housing. Figures 37 and 38 show small-lot town dwellings from Edenton and Columbia.[48]

For many people, the character of the neighborhood is more important than the size of the lot. By setting clear expectations for high quality and place-responsive development, communities can encourage building projects so that their scenic, aesthetic, historic, and environmental resources are preserved. Poorly designed projects feed public frustration. Well-designed infill projects can create great places and give residents the opportunity to live in neighborhoods that meet their lifestyle and economic means.

[47] Duany Plater-Zyberk & Company, LLC

[48] The planning director for Edenton reports that residential density within the town limits is approximately seven to eight units per acre. The town manager for Columbia reports the town's density is approximately six units per acre.

*Figure 37. Town dwellings of varying architectural styles in Edenton.*[49]

[49] Carlton Eley

*Figure 38. Attractively designed homes in a dense neighborhood in Columbia, NC. The town's density is approximately six units per acre.*[50]

A greater emphasis on high-quality design that respects the neighborhood's character can greatly alleviate opposition to innovative new development. In addition, slightly higher densities enable the mix of housing options. Other types of dwellings Pamlico County communities could consider include town homes, live-work units, or granny flats.[51] A greater range of housing types allows residents to choose housing that meets their changing needs and preferences over their lifetime.

More dwelling types at different price points puts housing within reach for more people. Higher densities means less land per unit, reduced site preparation, and lower per unit infrastructure costs. These factors reduce the hard costs of construction and expand reasonably priced housing.

**Housing in Rural Areas**

As noted earlier, a one-size-fits-all housing strategy will not meet market demand in Pamlico County. While some prospective buyers will appreciate the convenience, social interaction, and freedom of transportation choice afforded by living in the town core, others may desire homes outside of town.

[50] Carlton Eley

[51] A live-work unit is a building or spaces within a building used jointly for commercial and residential purposes where the residential use of the space is secondary or accessory to the primary use as a place of work. A granny flat or accessory dwelling unit (ADU) is an additional rental unit on a single-family lot. It may be attached or detached from the primary residence.

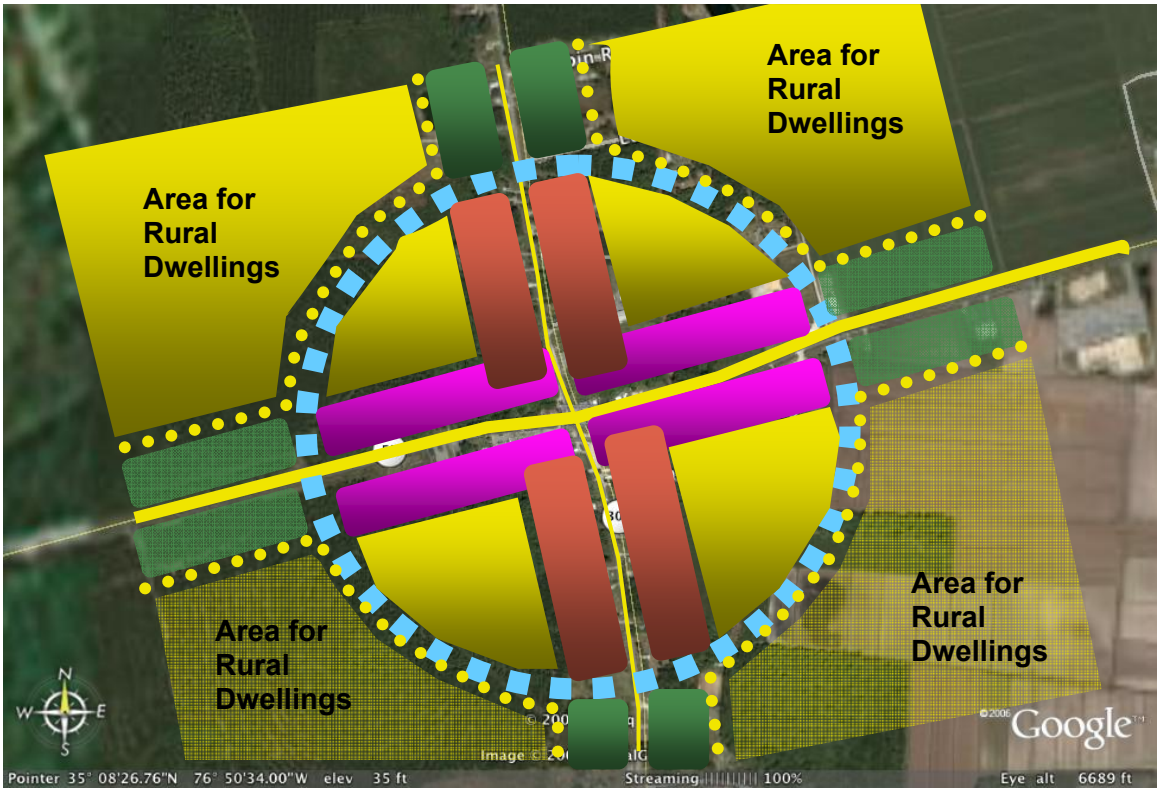



*Figure 39. In the Grantsboro diagram, land for rural dwellings borders the periphery of the town core. The radius of the town core (see dotted blue line) is a quarter-mile.*[52]

The most common theme in all of the meetings with citizens and county officials was: people want to maintain the area's rural character. Unrelenting development in the areas between towns along the corridor is inconsistent with this desire. How housing development happens in the rural areas—the areas between the towns—is as important as how it proceeds in town cores. Using citizen feedback as a guide, future development of rural dwellings should support the following goals:

- Retain the identity of local communities;
- Preserve the bucolic aesthetics and feel along Hwy 55;
- Steer clear of a haphazard pattern of development;
- Encourage development that complements Pamlico County's historic character and heritage fabric;
- Honor the county's traditional economic drivers such as farming and commercial fishing;
- Maintain the sense of place as defined by accessible open space and rural vistas;
- Supply a range of housing choices and opportunities that people can afford;

[52] Base map: Google Earth

- Avoid contributing to five lanes of congestion on Hwy 55; and
- Use taxpayer money wisely.

To meet these goals, Pamlico County can designate areas around the town cores for rural dwellings. This in combination with land preservation can relieve pressure for the noncontiguous or "pod-based" residential settlement patterns that are inconsistent with citizens' goals.

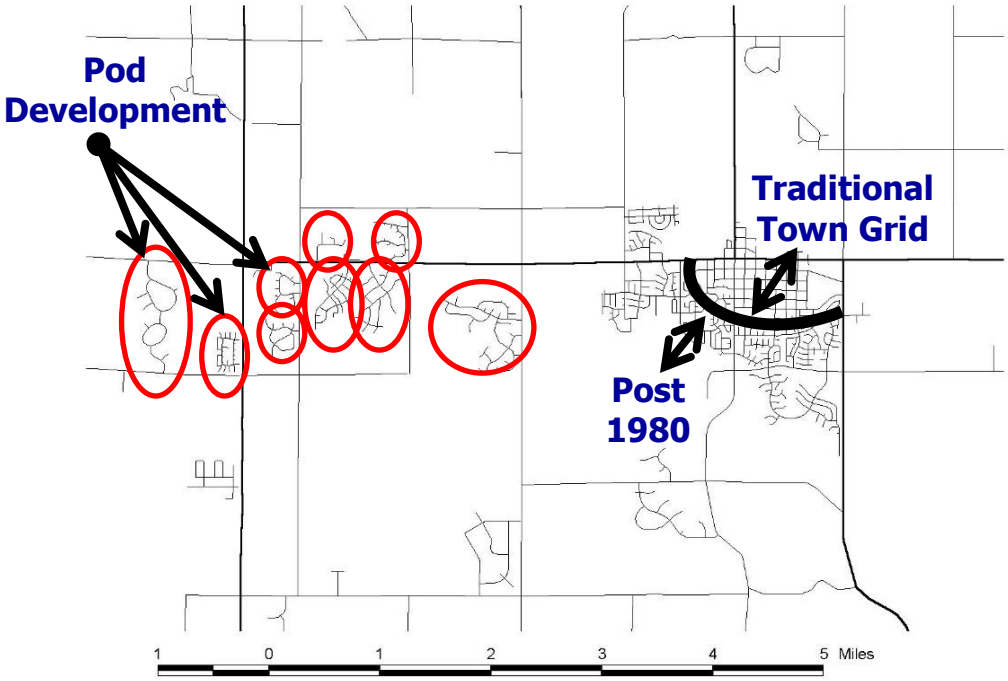



*Figure 40. Comparison of settlement patterns in Weld County, CO: Traditional Town Grid; Post 1980s Suburban; and Pod Development. The pod development pattern consumes more land and fragments the landscape.*[53]

This mode of accommodating the demand for more rural living avoids fragmenting the landscape, which has both aesthetic and economic value. According to Pamlico County's department of economic development, seafood processing, agriculture, boat design (building and service), and tourism are key components of the business base. This business base may be difficult to sustain if development converts and fragments large areas of open space, habitat, farmland, and ecologically sensitive areas.

[53] Charlier Associates, Inc.

## 3.5 Other Elements for Towns

**Special Places**

Communities are defined by more than the physical and natural elements that comprise them. They have special places that are infused with the values of their residents and reflect the unique historical, cultural, economic, and geographical context of the area.

According to the Project for Public Spaces, special places provide a range of things to do; are easy to get to and connected to the surrounding community; are safe, clean, and attractive; and are places to meet other people. Without great special places, there would be no great communities. Consider Edenton without the Courthouse Green or New Bern without Bear Plaza.

*Figure 41. Rendering of a "special place" beside a photo of a special place. On the left, a town plaza incorporating green space and water features, surrounded by mixed-use development. On the right, the Courthouse Green in Edenton.*[54]

Open spaces, whether built or natural, active or passive, help create distinctive communities. Pocket parks, playgrounds, plazas, promenades, social gathering places, and other publicly accessible open spaces contribute to the aesthetic quality of the surrounding area and to the feeling of "community." These spaces must be managed and designed in a way that ensures their users' safety so that the public spaces remain viable and desirable over time.

Public places provide opportunities for all kinds of interaction among neighbors: sidewalks might host outside shopping or art displays; closed-off streets become havens for block parties or markets; parks and plazas become open-air theaters for music or performances; and boardwalks or promenades that border water bodies. These encourage a sense of public ownership by connecting people with the resources that capture their affinity. Festivals that celebrate local produce, historical events, or cultural traditions can become a vibrant and ongoing reminder of a community's unique nature.

Broad constituencies benefit from such events and can be tapped. For example, schools may support such activities as learning opportunities for their students and as a means to share with the broader community the skills and talents of local youth. Pamlico County leaders, citizens, and high school students commented on the lack of places or facilities for teenagers. Some residents suggested towns in the county need to create engaging, constructive places for teenagers to reduce crime and misbehavior.

[54] Michael B. Morrissey (rendering), Carlton Eley (photo)

In Edgecombe County, NC, Princeville created the Riverside Heritage Park with these goals in mind. According to the Trust for Public Land, the town wanted to provide local kids with a place to play as well as give young people something to do. The park was developed on 11 acres of land and features playgrounds, picnic areas, sports fields, and a community center. Local officials stated the recreational center already should expand to accommodate programs targeting older teenagers. The new park also serves as a primary access point to the Princeville Heritage Trail, a historic walking trail along the Tar River that is envisioned as both a town commons and economic engine drawing tourists interested in the area's culture and sense of place in American history.

In Pamlico County, an inventory of built and natural assets may reveal ideal locations to establish or expand parks and trails. Since 1995, town officials in Bayboro have implemented projects to improve their waterfront. According to locals, the waterfront park projects demonstrate there was an unmet demand for public open space based on the frequency of users who come to eat lunch, read books, recreate, or relax. Projects for creating special places present opportunities to unite citizens around initiatives to improve quality of life as well as the prosperity of Pamlico County.

*Figure 42. This photo was taken from an undeveloped parcel of land on Hwy 304. Bayboro leaders have considered adding the parcel to the town's park system so that citizens and visitors can enjoy the space and scenery.*[55]

Although specials places by themselves may not be a strong enough "pull factor" to draw older teenagers and young adults back to Pamlico County, their creation may restrain the "push factor" prompted by a perception that Pamlico County lacks destinations or places of interest for teenagers.

**Stewardship at the Water's Edge**

Like most coastal communities, Pamlico County has an amazing mix of green and blue space. People tend to presume that natural assets, like rivers, bays, sounds, or waterfront property, will take care of themselves or remain accessible as "public treasures" in perpetuity. However, waterfronts and water bodies are an aquatic form of open space. As mentioned earlier (see Special Places), open space must be managed to remain viable and desirable over time. Moreover, waterfront property is highly prized real estate. Therefore, citizens should not presume that shorelines currently accessible to the public would be available to future generations without careful planning.

[55] Charlier Associates, Inc.

*Figure 43. Rendering of a public promenade along the water's edge.*[56]

Pamlico County may want to improve and increase access to coastal and inland waterways. Creative partnerships among public and private entities can assist in these efforts. Individual public open spaces can be connected through a system of greenways and blueways or water trails. In addition, the county may want to protect and maintain existing public access.

To improve access at the water's edge while maintaining other important uses such as fisheries or recreation, Pamlico County may want to consider the following.

- *Create a shared community vision for the waterfront* – A waterfront vision developed through a citizen-led initiative outlines a set of goals or ideals to strive for and sets the stage for people to think boldly about new possibilities for their waterfront. The vision should be adaptable and implemented gradually so that it can be expanded and improved as needed.

- *Encourage public access* – It is essential that the waterfront be accessible for as many uses as possible (swimming or fishing, dining dockside, or feeding ducks). Waterfronts with continuous public access are more desirable than those where the public space is interrupted. While the private sector is usually inclined to privatize water access, maintaining public use of great waterfronts may create higher real estate values taken together. In this scenario, like properties that enjoy private waterfront access, properties that directly abut a waterfront park achieve high real estate values. However, unlike the privatized scenario, the properties nearby but not abutting the waterfront property also gain significant value because, with only a short walk, they also enjoy access to the waterfront amenities. The property around the waterfront park in Charleston, SC, is a striking example of this principle in action. According to the American Society of Landscape Architects, Charleston's waterfront park remains a catalyst for investment in the city, creating far more value than private development alone.

[56] Seth Harry and Associates, Inc.

- *Ensure new development fits with the community's vision* – When the public's vision comes first, new developments can be tailored to be both profitable and to meet the community's shared goals and expectations. To be clear, this is not to say that private development should be unwelcome or discouraged. Instead, whatever is built must contribute to the goals set forth by the community, not detract from them.

In Edenton, homes are set back approximately 100 to 150 feet from the downtown harbor. Water Street separates homes from the water's edge, and a public promenade borders Edenton Harbor on the opposite side of Water Street. Through this approach, homeowners maintain their views of the waterfront, and citizens enjoy access to the harbor. Sharing the waterfront improves the sense of public ownership and stewardship.

**Compact Mix of Uses**

Mixing land uses – commercial, residential, recreational, educational, and others – in neighborhoods or places that are accessible by bike and foot can create vibrant and diverse communities. A mix of uses attracts people to shop, meet friends, and take leisurely walks. Mixed land uses are critical to achieving great places to live, work, and play.

Local officials can designate mixed-use districts that blend residential, commercial, business, and service uses in limited areas along major traffic arteries, in town cores, and at key intersections near residential neighborhoods to provide convenient access for residents. By establishing development standards, local officials can ensure that new construction in the district complements residential character and use regulations can control for nuisances such as lighting that is objectionable to surrounding residences; development that visually detracts from the overall appearance of communities; obnoxious noise; and the like.

When homes are within walking distance of grocery stores or employment centers, alternatives to driving, such as walking or biking, again become viable. Mixing land uses can enhance the vitality and perceived security of an area by encouraging more people to walk around on the streets. Furthermore, a mix of uses helps streets, public spaces, and retail stores become places where people meet, thus helping to revitalize community life.

Communities in Pamlico County can encourage and support a compact mix of uses through a variety of approaches:

- *Adopt comprehensive plans and sub-area plans that encourage a mix of land uses* – Comprehensive plans may inform infrastructure decisions and economic development strategies that can be used to promote mixed uses. Including an explicit goal to increase the mix of uses in specific areas can be an important step in making it happen. Developers can visualize the type of development the locality is looking for and what is likely to be approved. Where conflicts arise, the comprehensive plan is necessary for justifying local government action such as requirements for housing in a downtown area, and other similar decisions.

- *Facilitate financing of mixed-use properties* – If local government perceives financing as a barrier to developing new mixed-use buildings in a community, it can provide support by offering credit assurance, equity investment in the project, or soft second loans to the developers who are pioneering this type of development. Localities can also work with private developers, foundations, and pension funds to identify new sources of financing for such projects.

- *Provide examples of mixed-use development at scales that are appropriate to the community* – Mixed-use development looks different in various settings. Communities that cannot easily envision it may be skeptical of such development and may initially oppose it, creating delays and challenges for developers. By creating clear concepts through prototype designs and by providing clear examples of what is considered appropriate or desirable mixed-use for their area, a local government or a community group can shape the projects that developers propose.

**Safe Routes to School**

Not so long ago, children routinely roamed their neighborhoods on foot or bicycle. Today, parents chauffeur their children to nearly all their activities. The common sight of children walking and cycling has vanished in many communities. For instance, where roughly 50 percent of students walked to school as recently as the 1960s, now less than 15 percent of all trips to and from school are by foot or bicycle. There are many reasons for this trend including distance to schools, school siting decisions, busing, and safety concerns, familiar to many parents in Pamlico County.[57]

Two Pamlico County public schools are on Hwy 55. Many parents are, quite rightly, concerned about allowing their children to walk to schools on high-speed, high-volume streets.

Many communities are now making safe walking and biking routes to school a priority. Pamlico County can pursue this goal by installing sidewalks and walkways that clearly define the routes to and from all county schools. Vertical separation (with curbs) and horizontal separation (through side paths, shoulder bike lanes, planting buffers, ditches, and swales) from vehicle traffic can improve pedestrian and bicyclist safety in places where sidewalks are not appropriate.[59]

*Figure 44. Pamlico County High School. Hwy 55 in the foreground.*[58]

[57] Reid Ewing, William Schroeer, and William Greene, "School Location and Student Travel: Analysis of Factors Affecting *Mode Choice," Transportation Research Record: Journal of the Transportation Research Board, No. 1895,* TRB, National Research Council, Washington, D.C., 2004, pp. 55-63.
[58] Charlier Associates, Inc.
[59] MARC, p. 80.

*Figure 45. Wide paved shoulder/bike lane in Duck on NC Hwy 12 (left).*
*Side path along U.S. Hwy 64/264 in Manteo (right).*[60]

For obvious reasons, pedestrian and bike safety experts caution against having children walk to school on road shoulders. Still, it happens, especially in rural areas where sidewalks are not provided due to cost or right-of-way constraints, or where the area is so remote that it has little pedestrian and vehicle activity. The bottom line is to make the street and areas for biking or pedestrians as safe as possible. To learn more, see Vermont Agency of Transportation Pedestrian and Bicycle Facility Planning and Design Manual.[61]

Effective street improvements do not always require substantial funds. For example, signs and paint are relatively inexpensive and can make a big difference. Completion of these projects can build momentum and community interest in making other improvements. Easy-to-implement, low-cost, small projects done concurrently with larger, more expensive projects will keep safe street upgrades before the public and build continuous interest and support from the community.

Parents and neighborhood groups, schools and local officials, law enforcement officers and traffic engineers can work together to make streets safer for pedestrians and bicyclists along heavily traveled routes to school in Pamlico County. According to the National Center for Safe Routes to School, identifying the safest and most direct route for a student's journey is an important first step. Communities can identify safe routes using school route maps, neighborhood walk-abouts and bike-abouts, walking and bicycle audits, and school traffic control plans.

NC DOT has a Safe Routes to School Program, and the program offers grants periodically. To learn more about the grant program or safe route strategies, Pamlico County can contact North Carolina's Safe Routes to School Coordinator, *www.ncdot.org/transit/bicycle/saferoutes/contact.html*. The coordinator can also conduct workshops to help communities develop individual programs.

saferoutes toschool
north carolina

[60] NC DOT (photo of bike lane), Carlton Eley (photo of side path)
[61] Especially pgs 3-12, 3-13. Available at: *www.aot.state.vt.us/ProgDev/Documents/LTF/FinalPedestrianAndBicycleFacility/PedestrianandBicycleFacilityDesignManual.pdf*

# 4 MANAGING THE AREAS BETWEEN THE TOWNS

During the technical assistance site visit, the Team used the phrase "pearls on a strand" to describe the highway and the towns that occur along its route. This image is useful to describe the vision the Team developed through input from Pamlico County citizens.

Options for managing the towns (pearls) were presented in Part 2 of the report. This section focuses on options for managing the highway and adjacent lands (the strand) between the nodes. The following topics are addressed:

- Managing the road through context-sensitive design and access management;
- Managing the land between towns through open space conservation and other strategies; and
- Adapting subdivision regulations to make them work for Pamlico County's goals.

## 4.1 Managing the Road

**Context-Sensitive Design for the Open Highway – Maintaining Rural Character Between the Nodes**

During the technical assistance workshop, Pamlico County citizens reiterated that open space preservation and rural character are vital to maintaining the quality of life that so many residents desire. Further, the county understands that maintaining the scenic, historic, agricultural, and natural setting of rural Pamlico County also offers tourism and economic benefits.

Pamlico County can achieve its goals along the rural sections of the road by using context-sensitive design. For example, local officials could view the upgraded roadway as a scenic route, blending the highway corridor with rural features such as large stands of trees; open fields; rustic structures like a general store, church, farmhouse, or barn; and views of creeks, streams, and wetlands.[62]

Pamlico County could work with private and public partners such as the Nature Conservancy to protect significant areas by purchasing land bordering Hwy 55. This approach was applied along U.S. Highway 17 in Bertie County to protect land that eventually became the Roanoke River National Wildlife Refuge. This approach will be discussed in more detail in subsection "*Open Space Conservation Strategies*."

Alternatively, Pamlico County could negotiate with NC DOT. Prior to the approval of the four-lane expansion of U.S. Hwy 17 in Chowan County, the town of Edenton negotiated that the highway be controlled access with exits as a means to preserve the rural vista.

**Access Management Along the Open Highway**

Outside of the downtowns, Hwy 55 conveys traffic between the communities and from the communities throughout Pamlico County and beyond. Residents and the county want to see the traffic in those areas flow freely and safely. They also want to avoid an unending string of

[62] See, for example, Kendall County Scenic Route Guidelines: http://www.co.kendall.il.us/zoning/pdf/new%20Appendix.pdf.

development along the highway that eliminates any distinction between town and country. Limiting access to the highway in these areas can help achieve both of these goals.

To keep rural areas rural, Pamlico County could opt to provide no more access points to the highway than it is required to do by law. For example, limitations on new driveways may be established through a "corridor overlay" approach, which adds new requirements to existing ordinances. This method would require identifying and mapping the boundaries of all existing lots and parcels along the highway corridor as well as assigning one driveway to each mapped parcel by right. If the land were further subdivided, all new lots would need to obtain access from the existing access point.

Another approach Pamlico County could consider is driveway spacing standards to establish the minimum distance between driveways along the highway. Spacing between driveways and/or farm-field entrances is especially critical in rural areas because travel speeds tend to be higher compared to town cores. Higher vehicle speeds mean that driver reaction and stopping distances are longer.

Driveway spacing standards encourage sharing access for smaller parcels and can improve community character by reducing the number of driveways. The number of driveways along an arterial is relevant to community character because driveway cuts interrupt the natural edges of the highway. Too many driveways can slow traffic. Further, an increase in driveway cuts represents another form of visual clutter. Lack of consistency in driveway management is not attractive; and irregularity in the number of driveways, on opposite sides of an arterial, disrupts the sense of symmetry.

In addition to the spacing standard, county officials could encourage a maximum driveway density standard for rural sections of Hwy 55. According to the Center for Transportation Research and Education at Iowa State University, a standard of four access points per mile per roadway side is appropriate on many rural arterial roads.[63]

Spacing and density standards for driveways do not limit development. Instead, they reduce the potential for conflict by controlling the number of points to enter or exit the roadway. To facilitate development that complements Pamlico County's bucolic character, officials may wish to apply these standards while encouraging deep setbacks along the rural segments of Hwy 55. If local officials receive development proposals for the rural areas between the towns and want to avoid isolated and pod-based development, they can evaluate whether the site location is consistent with the county's preservation priorities as well as its connectivity standards and plans for future road networks.

## 4.2 Managing the Land Between Towns

Growth in rural areas offers communities the challenge and the opportunity to develop with sensitivity to preserve the sense of place. Pamlico County has an opportunity to connect the increments into a meaningful whole that reflects residents' goals and vision for the future. Citizens, town officials, and county representatives all said they wanted to avoid a future where strip development is the dominant pattern along Hwy 55 and the rural character of the road is lost.

[63] Center for Transportation Research Education (2000) "Driveway Density and Driveway Consolidation," Access Management Handbook. Ames, IA: Iowa State University.

Techniques for keeping rural areas rural and directing growth to towns can reduce impacts to natural resources, and can also help economically. Working lands are a significant source of economic activity in many areas; converting these lands decreases this base. Conversely, clustering new development in towns preserves working lands and can create economic synergies between nearby uses.

A wide variety of tools can be used to establish clearly defined edges to the towns and preserve rural heritage outside the towns:

- Green edges and scenic view sheds along the highway;
- Rural corridor setbacks;
- Open space conservation strategies; and
- Designated rural districts.

**Green Edges and Scenic View Sheds**

During the technical assistance workshop, citizens and town mayors expressed that maintaining each town's individual sense of identity is important. Pamlico County officials can help preserve those unique identities by retaining green edges. At the border of a town, the green edge helps to define where the town ends and the country begins based on a noticeable change in the landscape. Sections of the green edge, especially areas that border the highway, could function like a gateway to a community through proper beautification and maintenance.

In between communities, local officials can take steps to reinforce the county's rural image by protecting the view shed of the countryside or landscape along the road.

In the case of Pamlico County, the view shed would be the mosaic of farmland, aquatic systems, and distant piney woods that can be seen along the open highway between the towns of Grantsboro, Alliance, and Bayboro. The importance of Hwy 55's view shed will not be lost on persons who are driving because there are expanses that are visually attractive and unobtrusive. Pamlico County's "road less traveled" sensibility, combined with the interspersing of natural resources like rivers, fields, forests, and wetlands, is an asset that draws visitors and new residents to the area. It is an important placemaking element that distinguishes "Eastern Carolina" communities from other North Carolina regions such as "The Triangle," "The Piedmont," or "Appalachia." Protecting views from the road makes the highway corridor more scenic, and it accentuates the character and heritage that Pamlico County citizens value and associate with their sense of place.

*Figure 46. Hwy 42 in Bertie County, NC, juxtapose to U.S. Route 1 in Prince William County, VA. The photo on the left shows a bucolic view shed. The photo on the right shows a view shed following years of land conversion and strip development.*[64]

**Rural Corridor Setbacks**

Strategic use of setback requirements can promote rural uses along Hwy 55 in a way that balances public and private uses. With an overlay zone, Pamlico County could specify deep setbacks for areas along Hwy 55 outside the towns. A setback of 1,000 feet from the center of the right of way, with requirements to screen the development from the street, would make strip commercial development relatively unattractive while still allowing property owners the ability to develop other uses. For example, the town of Edenton and Chowan County both require screening to buffer parking and loading areas from public streets and adjoining land uses.[65] An application of the screening approach is shown in Figure 47.

*Figure 47. After twenty years, the screen of trees masks the adjacent shopping center from the viewshed of Hwy 17. The screen also reinforces a natural edge along the highway.*[66]

[64] Carlton Eley (photo of view shed in Bertie County), Geoffrey Booth (photo of viewshed in Prince William County)
[65] The Edenton-Chowan Planning Office is responsible for staffing the Town & County Planning Boards.
[66] Carlton Eley

Rural corridor setbacks and screening could help maintain rural character and distinguish the town environment from working lands and other open space. However, these measures could apply only to properties of a certain minimum size. By themselves, setbacks and screening would not likely keep the rural areas rural, but combining these with other techniques described below could be quite effective.

**Open Space Conservation Strategies**

Open space is an integral component of rural lands and community character. There are several different types of open space:

- Working lands, such as farms and ranches;
- Natural undeveloped areas that provide environmental benefits, scenic vistas, recreation, and economic value; and
- Parks, whether privately or publicly maintained.

All of these types of open space can be subject to enormous market pressure to be developed into more profitable uses such as residential or commercial development. Several strategies can help the county protect valuable open space:

- *Regulatory tools:* Some regulatory tools can be used to conserve these areas while allowing property owners to enjoy a reasonable economic return. Transfer of development rights, purchase of development rights, and special tax assessments are several examples within a larger suite of tools that can help preserve these rural open spaces.

*Figure 48. Working land and pine forest in Pamlico County.*[67]

  - Transfer of development rights is a mechanism that allows development rights to be transferred from areas designated for protection to areas designated for future growth. Such programs encourage open space protection while allowing for anticipated development. To learn more, see the following summary, *www.townofcary.org/depts/dsdept/tdrconcept.pdf*.
  - Purchase of development rights is a land protection tool that pays landowners to protect their land from development. Under this program, the development right is retired upon purchase rather than transferred. As a result, the parcel remains as agricultural land or open space permanently. See the following summary to learn more, *www.gatheringwaters.org/documents/land_owner_info_sheets/PDR.pdf*.

[67] Carlton Eley

  - Special tax assessments levy taxes based on current use rather than highest and best use. The land is not subject to special assessments for sanitary, water, lights, and the like if the parcel(s) remains as open space or agricultural land. These lower rates relieve pressure to convert land to pay for taxes. For more information, review the following fact sheet, *www.farmlandinfo.org/documents/29479/DA_8-06.pdf*.

- *Land acquisition:* Pamlico County could consider buying the land it wants to preserve, either on its own or in partnership with another entity. For example, in Bertie County, the Nature Conservancy purchased a 3.5-mile stretch of land along U.S. Highway 17 that includes uninterrupted swamp, wetland, and forest. This acquisition was part of a larger effort to buy land in Bertie and Martin counties to create the Roanoke River National Wildlife Refuge and add land to the state-owned Roanoke River Wetlands. Another program to consider is the North Carolina Department of Environment and Natural Resources' "Million Acre Initiative." The Million Acre Initiative is a collaborative, endeavor to accelerate the rate that land is protected in North Carolina and to preserve an additional one million acres of land permanently by the end of 2009. The Initiative has researched local government funding programs for open space protection. To learn more, visit the following website: *www.onencnaturally.org/pages/home/home.html*.

  Pamlico County most likely cannot afford to buy all the land it wants to conserve along Hwy 55. To make the most of its limited funds, the county can prioritize land for acquisition. The county can develop a process to select the most desired open space, based on protecting the water supply, keeping development out of the floodplain, supporting water-related recreation, improving access to outdoor resources, and protecting wetlands and native plants and animals. The Trust for Public Land has resources that describe how to prepare a conservation vision or conduct green printing. To learn more, visit the following website, *www.tpl.org/tier2_pa.cfm?folder_id=3130*.

- *Determining where not to build:* Part of planning for development includes deciding where it does not make sense to build. Pamlico County can protect open space while also avoiding property damage by identifying land that is subject to flooding and discouraging development in these areas. The county can get flood maps from the Federal Emergency Management Agency to determine which lands are prone to flooding. For North Carolina floodplain map information, visit the following website, *www.ncfloodmaps.com/default_swf.asp*.

- *Protecting land through the development process:* County officials can also protect valued open space during the land development process. Once they identify lands they want to protect, they can encourage compact development to conserve as much open space as possible rather than encourage pod-based development that would fragment the countryside through leap-frog land use patterns.[68] The county can also set development back along the rural sections of the highway (one-quarter mile to two-thirds of a mile) to

[68] Pod-based development characterizes a development pattern that is structured by separating land uses, including complementary uses such as homes, shops, restaurants, schools, offices, and civic centers. Complicating the development pattern is each land use is serviced by separate streets that are not well connected. In effect, the poor street connectivity isolates each land use. The detached land uses or land use clusters are often called "pods." Cookie-cutter or look-a-like subdivisions represent a residential form of pod-based development.

maintain the scenic integrity of the rural viewshed and reduce interruption of working lands and open space.

Pamlico County's residents clearly value open space very highly. Open space remains a signature feature of the area. Further, the strength of Pamlico County's economy, whether agriculture; fishing; construction; or recreation, is linked to the quality of its open space. Stewardship of this treasure will be important for meeting the needs of current and future generations.

**Designate Rural Districts**

Another option for maintaining the rural character of the Hwy 55 corridor, and the county at-large is to designate rural districts in the planning or subdivision ordinances. The Town of Huntersville, NC, which is 12 miles from the City of Charlotte, experienced explosive growth during the early 1990s, and this prompted elected officials and town planners to engage citizens in a discussion about growth options. An outcome of this dialogue was a policy to establish rural districts.

The rural districts help to preserve the natural features that reflect the town's rural heritage and to maintain vestiges of rural appearance with clear, definitive edges.

In Huntersville, "rural heritage features" are identified and set aside from buildable areas at the outset of project design, and development is clustered on the remaining land.

Within the district, development density is regulated on a sliding scale, and permitted densities rise with increased open space preservation. Through density bonuses for compact development, the town has preserved open space in outlying areas. A density bonus is an incentive that allows developers to build in specified areas densities that are higher than normally allowed in exchange for preserving open space elsewhere.

Huntersville's model features a range of development typologies: farms, single houses, the conservation subdivision, the farmhouse cluster, and the residential neighborhood. New residential neighborhoods are encouraged to feature small, walkable village centers. To learn how the Town of Huntersville's ordinances encourage traditional town planning, visit the following site: *www.huntersville.org/planning_1.asp*.

To avoid decreasing the value of farmland or creating an economic loss for landowners, the county could adopt a transferable development right (TDR) system. Under the TDR system, landowners in "contributing" or rural areas retain development rights that can be sold to developers interested in building in "receiving" areas in towns. Pamlico County, in cooperation with the towns, would need to designate TDR receiving areas. The county would also need to establish the permitted density of the contributing (or rural) zone. The owner in the contributing zone could then sell his or her excess development rights. TDRs are a market-based approach to retain rural zones, preserve farmland and open space, and encourage growth where the community wants it. To learn more about TDRs, visit the Nature Conservancy's web site (www.nature.org) or read the following fact sheet: *www.nature.org/wherewework/northamerica/states/georgia/files/etowah_02_16_2004.pdf*.

## 4.3 Adapting the Subdivision Regulations

Communities are not static places. They are constantly changing and growing. Economic drivers, demographic shifts, and the need for services stimulate the change.

Because the factors that stimulate growth (geography, natural resources, human, and intellectual capital, etc.) differ from place to place, communities develop in different ways.

The pace and location of development affects citizens' choices for housing, transportation, lifestyle, and goods and services. Much of this growth is governed by subdivision regulations. These regulations affect the layout of communities, and they can determine how well communities meet the needs of residents.

**Making the Regulations Work for Pamlico County's Goals**

Many subdivision regulations are outdated and can lead to unintended consequences. They may preclude the achievement of goals that are important to officials and citizens:

- bike lanes and walkable blocks;
- creation of traditional towns;
- wide sidewalks, street-level retail, and other characteristics of pedestrian-friendly areas;
- the ability to manage traffic and reduce congestion on Hwy 55 with good street connectivity;
- mixed uses that are complementary;
- clustered development; and
- aesthetic improvements like placing utilities below ground or lining a corridor with trees.

**Summary of Findings from the Pamlico County Subdivision Ordinance**

To identify possible conflicts between the subdivision ordinance and the county's goals, the Team briefly reviewed the Pamlico County Subdivision Ordinance. Table 3 in Appendix D summarizes the Team's findings.

The Team found that the existing subdivision regulations might not allow development that is consistent with Pamlico County's vision. The declaration of purpose states, "the procedures and standards…are necessary and appropriate in order to promote the elimination of unsafe conditions arising from the overcrowding and concentration of population…" Depending on the interpretation, this provision may prevent higher density development that is high quality and place-responsive.[69] It is also unclear whether the ordinance is flexible enough to permit a broader range of housing choices for consumers in the local market. Pamlico County's subdivision ordinance is written in a way that encourages conventional subdivision development which: segregates the development from complementary land uses; is based on cookie-cutter housing design; utilizes a cul-de-sac street pattern rather than a grid; and limits affordable housing options. As a result, opportunities to introduce traditional neighborhood development and other innovative forms of housing, in towns and in rural areas, may not be possible.

[69] Place-responsive suggests development reinforces the community's sense of place or development is harmonious with the important features valued by residents.

The parameters for block sizes in the ordinance are large and may not create better conditions for walking or create a street network with high connectivity. Block sizes of 500 feet to 1500 feet are equivalent to one and a half football fields on the low end or five football fields on the high end. The extremity of these parameters is not consistent with developing walkable neighborhoods and more consistent with commercial strip shopping center development.

The subdivision ordinance requires streets to comply with standards of the county and NC DOT, but it is not clear whether the existing standards will permit the context sensitive solutions presented in this report. For example, the subdivision ordinance requires cul-de-sacs at the end of public and semi-improved roads. However, cul-de-sacs are not designed to achieve goals for high connectivity. As a result, travel is constrained to motorized vehicles.

The Team found that the "density of development" and "lot size" requirements would yield a low-density settlement pattern. In addition, the requirements do not allow for a variety of housing types.

This discussion was provided to share some of the Team's findings and to highlight some things that the county may wish to consider changing most urgently. Review Appendix D to learn more.

If development regulations go unchanged, it is unlikely that development will change. However, subdivision regulations can be amended to foster:

- Healthy communities: that provide families with a clean environment.
- Strong neighborhoods: that provide a range of housing options.
- Neighborhood revitalization: by making existing neighborhoods better.
- Transportation choices: that give people the option to walk, ride a bike, or drive.
- Economic development and jobs: by improving the local tax base, providing neighborhood services and amenities, and creating economically competitive communities.

Finally, Pamlico County can consider conducting an in-depth review of the subdivision ordinance and other land development regulations.[70] Many local governments have reviewed and amended or replaced their subdivision regulations. They engaged citizens in setting goals for balanced growth, and they tackled the hard work of revising their plans and regulations to achieve those goals. This has yielded greater clarity about what the community wants and greater efficiency and certainty for the development community in many places.

## 4.4 Final Thoughts on Managing the Highway 55 Corridor

U.S. Highway 158 was referenced earlier in this report because it is a major arterial that connects North Carolina's coastal plain to the tidewater region of the Outer Banks. In addition, the highway was upgraded from two lanes to five lanes, similar to Hwy 55's expansion. Following

[70] The Smart Growth Leadership Institute's Smart Growth Code and Zoning Audit Tool may be useful for this review. See http://www.sgli.org/tools.htm.

the December 2006 workshop, the Team learned from NC DOT Highway Division 1 the timeline for the U.S. Hwy 158 bypass expansion.[71]

- Circa 1957, 1958 – Hwy 158 bypass was two lanes.
- Circa 1983 – Some three-lane sections were installed for turns along the bypass.
- Circa 1984 – The bypass was upgraded to three lanes with the exception of Kill Devil Hills and Nags Head, which were five lanes.
- Circa 1987 to 1989 – The bypass was upgraded to five lanes.

Twenty years later, the rural landscapes that once existed along U.S. Highway 158 in Dare County are no longer evident. From Kitty Hawk to Nags Head, the highway is bordered by decentralized commercial strips and pods of subdivisions.

Twenty years is not a long time. Many in the workshop expressed the fear that if Pamlico County does not guide and manage growth well, in twenty years, the county's east-west route will be a congested 12-mile commercial strip from the county line to Bayboro, and its rural, scenic, and agrarian character will be a distant memory. To guard against this future, experience suggests that Pamlico County will need to reexamine and align its development patterns, practices, and policies to send a clear signal to the market about the development it wants. Judging by what the Team heard in the workshop, in discussions with citizens, and in talks with local officials, this will mean using traditional North Carolina town-building techniques that can support a variety of housing and transportation choices. It will mean capturing the benefits of growth within the development nodes and keeping the county's rural areas rural—in a way that is fair to land owners, taxpayers, and community members alike.

The vision presented in this report reflects the ideas, passions, and values of Pamlico County's citizens: young and old, elected officials and laypersons, county and municipal leaders, long-term residents, and new arrivals. The citizens of Pamlico County want development that fosters great places. Experience shows this vision is achievable, but it will require commitment to policies and practices that advance community goals and guide conservation and development to benefit the community, environment, and economy.

[71] North Carolina Hwy 12 (Virginia Dare Trail) was the original U.S. Hwy 158. Until 1988, the arterial currently known as U.S. Hwy 158 was split between "business" and "bypass" designations on the Outer Banks.

# 5 Summary Of Implementation Options

The expression "Rome wasn't built in a day" may resonate for many of the citizens who attended the Pamlico County technical assistance workshop. To help Pamlico County get started quickly and to address the county's request for clear, attainable implementation options, the Team developed a list of steps the county can take.

Short-term options could be implemented within a year. Long-term options may require more examination and planning and may not be implemented for a year or more in the future, although they are not dependent on the completion of the short-term actions. These strategies can apply to Pamlico County as a whole, not only Hwy 55.

Short-term Implementation Options

- Devise an open space plan
- Revise land development regulations to facilitate small-town development and manage growth along Hwy 55
- Prepare an overlay code to guide development along Hwy 55
- Devise approaches for supplying sufficient affordable housing
- Educate citizens to make informed decisions about property
- Arrange site visits to referenced communities to learn by example
- Establish new partnerships
- Inventory the vernacular architecture of Pamlico County

Long-term Implementation Options

- Prepare a corridor development plan
- Prepare ordinances for a corridor development plan
- Retrofit Hwy 55 with a landscaped median
- Apply smart growth methods to manage stormwater
- Create bicycle facilities
- Manage billboard signage
- Manage the appearance of the Hwy 55 corridor through landscaping
- Manage light pollution through "dark sky" policies
- Design against crime

## 5.1 Short-Term Implementation Options

**Devise an open space plan**

Pamlico County can protect and conserve land and aquatic resources for current residents and future generations. Many places that have experienced rapid growth find themselves wishing that they had pursued open space preservation before market pressures increase land costs. A plan can help to put this process in motion. The plan could identify clear goals and objectives to target specific parcels of open space to preserve strategically. Such as protecting a minimum of 40 percent of the county's land area over 20 years. Public and private sector partnerships can help implement an open space plan.

Pamlico County can look to the following resources to help guide an open space plan or strategy.

- Wake County's Consolidated Open Space Plan guides the county's open space program. The plan presents policy recommendations, program guidelines, and suggested methods for the county and its partners to conserve open space. The plan is available at *www.wakegov.com/parks/openspace/consolidatedplan.htm*.

- The Nature Conservancy strives to preserve plants, animals and natural communities by protecting the lands and waters they need to survive. The Nature Conservancy can work with stakeholders in Pamlico County to encourage stewardship through land acquisition. In 2006, the Nature Conservancy protected 76,500 acres in four project areas in eastern North Carolina. To learn how partnerships with the Nature Conservancy can complement open space planning efforts in Pamlico County, visit *www.nature.org/wherewework/northamerica/states/northcarolina/contact/*.

- The North Carolina Clean Water Management Trust Fund (CWMTF) makes grants to local governments, state agencies, and conservation nonprofits to help finance projects that specifically address water pollution problems. As a coastal community, CWMTF can support projects in Pamlico County that enhance or restore degraded waters, protect unpolluted waters, and/or contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits. The strategies introduced in this report will support the County's quality of life and economy. Additionally, they are good environmental best practices. To learn about CWMTF funding programs that will advance Pamlico County's objectives for clean water and smart growth, visit *www.cwmtf.net/*.

**Revise Land Development Regulations to Facilitate Small-Town Development and Manage Growth along Hwy 55**

Land development regulations (codes, ordinances, and statutes) set parameters for how development looks and how physical structures and/or space can be used. Many local governments are amending their land development regulations (LDR) to match them better with community goals and to encourage coordination across jurisdictions.

Moreover, local governments are working with citizens to set clear goals for growth and revising their plans and regulations to achieve those goals. The result in many places is greater clarity about what the community wants and greater efficiency in reviewing and approving proposed development projects. As Pamlico County evaluates its LDRs, the county can compare its goals with the development its regulations allow to see if future development is likely to meet the

county's goals for walkable communities with efficient traffic management, rural character, housing opportunities for a variety of incomes and life stages, preservation of natural resources, and greater economic opportunity.

There are many resources to help Pamlico County revise its ordinances:

- The American Planning Association has model smart growth codes available at *www.planning.org/smartgrowthcodes*. These codes encourage mixing land uses, preserving open space and environmentally sensitive areas, providing choices in housing and transportation, and making the development process more predictable.

- The Local Government Commission's *Smart Growth Zoning Codes: A Resource Guide* studies codes that have been implemented in communities around the country. Its main areas include "traditional neighborhood design," which encourages walkable, mixed-use neighborhoods; mixed-use and live/work codes, which help diversify land uses; street and block design that makes it easy and comfortable for people to walk, bike, or drive; parking guidelines that use land more efficiently; and design regulations that help maintain or create attractive, distinctive, safe places. The resource guide is available on the LGC Web site, *www.lgc.org*.

- Davidson, NC, has not become a memorable and distinctive community by accident. Several ordinances help the town maintain its small-town character while keeping up with the times. Davidson is the first municipality in the nation to incorporate affordable housing into its adequate public facilities ordinance. The town's planning ordinance seeks significant public involvement and provides charrettes for every new development. The ordinance also includes a form-based code as well as policies for streets and greenways that may be applicable to small towns or rural communities. The planning ordinance for the town is accessible at *www.ci.davidson.nc.us/units/planning/ordinance/default.asp*.

- Huntersville, NC, overhauled its development regulations to accommodate a growing population while protecting its small-town, friendly character. The town's ordinances facilitate development based on the principles of traditional town planning, transit-oriented development, and high-quality urban design. The zoning and subdivision ordinances for Huntersville are available at *www.huntersville.org/planning_4.asp*.

- Edenton passed a unified development ordinance that regulates all development in the town. In recent years, local officials have noted the spillover development into Camden and Pasquotank counties from Virginia's Tidewater region. Edenton passed the ordinance to manage growth in anticipation of increased development pressure. To review Edenton's unified development ordinance, visit *www.townofedenton.com/index.asp?Type=B_BASIC&SEC={A103D656-5449-40A9-9A43-B06B9CB7F05A}*.

**Prepare an Overlay Code to Guide Development Along Hwy 55**

Overlay codes provide development rules for specific areas and work in cooperation with an area's existing LDRs. They provide additional standards and regulations based on conditions such as environmental factors, historical features, or neighborhood preservation. Communities and the county can work together to create a multi-jurisdictional overlay district. Pamlico County has the statutory right to establish a zoning overlay district (North Carolina General Assembly -- G.S. 160A-382).

To learn more about overlay codes, consult:

- The city of Kanab, UT, passed a corridor protection overlay zone to maintain community character, preserve scenic view corridors, create a buffer between development and highway uses, encourage access management, and facilitate transportation choice. *kanab.utah.gov/artman/publish/ordinance/article_198.shtml*

- The city of Graham, NC, established a zoning overlay district to prepare growth management regulations that will accomplish the community goals of maintaining Graham's atmosphere and improving quality of life, safety, welfare, well being, and aesthetic character. See Article XI Highway Corridor Overlay Districts, *www.cityofgraham.com/misc/cityofgrahamdevelopmentordinances.pdf* (256 pp).

- The New Jersey Department of Transportation worked with Warren County planners and residents to develop a coordinated land use and transportation plan for a 21-mile span of the Route 57 corridor. One of the products of this effort was scenic corridor overlay zoning, which is a promising technique for preserving the corridor's picturesque ambience. *www.state.nj.us/transportation/works/studies/rt57/pdf/ScenicCorridorOverlayZoning..pdf* (2 pp)

**Devise Approaches for Supplying Sufficient Affordable Housing**

Nearly every part of the nation faces the challenge of providing housing that is affordable to low- and moderate-income families and accessible to jobs and essential services. No single type of housing can serve the varied needs of today's diverse households. Integrating single- and multi-family structures into new housing developments can support a more diverse population and create more choices for households of all income levels.

The following strategies can expand the range of housing choices:

- Many communities are adopting inclusionary zoning ordinances, which either require or encourage affordable housing in market-rate development, typically through density bonuses and other incentives. Communities with such ordinances recognize that, in some real estate markets, there may be no other way to get affordable housing in new developments. Inclusionary zoning ordinances increase opportunities for critical service employees like teachers, nurses, and emergency responders to live in communities where they work despite their low pay. The American Planning Association has compiled inclusionary zoning ordinances to encourage affordable housing through density bonuses. *www.planning.org/smartgrowthcodes/pdf/section44.pdf* (12 pp)

- The town of Cary, NC, has LDRs that allow single-family homes to include accessory dwelling units (ADUs). The policy used to restrict occupation to relatives, but an overhaul of the zoning ordinance has removed the limitations. As a result, more ADUs can be built and more people can take advantage of them. ADUs can increase the supply of affordable rental units. In Cary's case, the ADU provisions give residents and workers more chances to find affordable housing. *www.townofcary.org/depts/dsdept/P&Z/ldo/chapter5.pdf* (53 pp)

- The town of Edenton intervened to save 70 homes owned by a local cotton mill from demolition in 1995. Eventually, the homes were resold with conditions for owner

occupancy and for the home exteriors to be renovated within two years of purchase. Strict limits were also placed on the size of additions so that small houses would not morph into big houses. Although the protective covenants seemed quite strict, they contributed to saving historic homes that were also affordable. The original sales prices ranged from $17,000 to $100,000. Today, the former mill homes, *marketed as cottages*, are safe, durable, and dignified dwellings that were built through traditional construction methods rather than prefabricated construction or mass-produced as kits homes. Pamlico County officials can assess whether structures like the Edenton Mill houses can be built for increasing the supply of affordable housing. Before and after photos of the restored homes can be accessed at Preservation North Carolina, visit *www.presnc.org/seerestorations/edentonmillvillage/edentonmillvillage.html*.

**Educate Citizens to Make Informed Decisions about Property**

*Caveat venditor* is Latin for "let the seller beware." For property owners, capacity building and financial literacy are great equalizers. There are many public policy tools that can protect underserved populations and vulnerable groups during hot real estate markets, but they work only when target audiences know about them and how to use them.

- Elderly homeowners and households on fixed incomes may resist the urge to sell their homes if they are informed about tax deferment programs. To be effective, city staff may need to think and act like marketers rather than regulators.

- Home-buying workshops are a frequent component of strategies to increase homeownership. Their counterpart, home-selling workshops, are much less common, yet are critical to ensuring that lower-income homeowners get full value for their homes.

- Predicting future economic performance and trends at the neighborhood level can be difficult. Still, an array of indicators may help to signal shifts in local markets. Real estate and retail development specialists use some variants of these indicators for investment decisions. Citizens should be just as well informed about the prospects of their neighborhoods or the potential of their property.

**Arrange Site Visits to Referenced Communities to Learn by Example**

Site visits give local officials an opportunity to explore communities and gain insights into architecture, town planning, and development. In addition, they enable participants to evaluate a place and personally assess whether on-the-ground conditions line up with their descriptions.

Further, site visits facilitate the transfer of lessons learned and community best practices.

Discussing the conditions that influence development will prompt participants to consider whether the codes and policies of their locale will enable building the types of places that citizens want.

This report references many North Carolina communities that are applying interesting approaches to planning and development. By arranging site visits, Pamlico County officials can see eastern North Carolina's tradition of building great places in action.

**Establish New Partnerships**

Collaboration takes many forms and can be either formal or informal, but it is distinct from other forms of engaging stakeholders and the public, such as informing, consultation, involvement, or empowerment. In all of its forms, collaboration can foster superior outcomes.

For example, Sustainable Environments for Quality of Life (SEQL) was conceived in 2000 to promote a healthy environment, a strong economy, and a high quality of life for the citizens of the 15-county Charlotte, NC – Rock Hill, SC region. SEQL pulls together diverse groups into facilitated discussions aimed at solving problems and creating policy. The project supports efforts to develop integrated long-range plans to ensure economic development and a good quality of life for the region. The project is a cooperative undertaking of local elected officials and is managed by the Centralina and Catawba Council of Governments.

For Pamlico County, the transferable lesson is that many groups have a stake in the success of the county's smart growth initiatives because conventional development patterns will not create the kind of places people want. Pamlico County may be able to establish partnerships with groups like the North Carolina Clean Water Management Trust Fund, the Division of Community Assistance in the North Carolina Department of Commerce, the Small Town Main Street Program of the North Carolina Main Street Center, the Albemarle-Pamlico National Estuary Program, the North Carolina Rural Economic Development Center, or the National Endowment of the Arts.[72]

To meet affordable housing goals and encourage development that is more equitable, local officials could collaborate with the Local Initiatives Support Corporation, the Enterprise Foundation, Fannie Mae, or community development financial institutions like Self-Help Credit Union. Establishing new partnerships will present Pamlico County and other stakeholders with mutual benefits as well as results beyond those any single organization or sector could realize alone.

**Inventory the Vernacular Architecture of Pamlico County**

According to the Urban Land Institute, consumers are turned off by cookie-cutter development and the sameness of houses. Increasingly, buyers are attracted to vernacular and historical house styles that characterize their immediate area or region. A vernacular house design is generally defined as "a type of construction native to an area or region that is shaped by environmental and cultural considerations as well as by locally available materials." By preparing a photo survey of home types in the region, Pamlico County can inventory vernacular home design. Through facilitated discussions, local officials can learn what type of town or rural dwellings citizens would like to see in the nodes or along the periphery of the town cores.

Distinct architectural styles contribute to the sense of place for communities, and they can contribute to the economy as a draw for tourists. Knowledge of vernacular architecture is important because it is key to understanding the past. Vernacular architecture also provides inspiration for contemporary architects. By developing an inventory of architectural types, Pamlico County will be in a better position to influence development projects. Pattern books or sketchbooks are useful for identifying architectural styles found in different communities and detailing key components with illustrations. For an example, see "A Sketch Book of Manteo

[72] Your Town: The Citizens' Institute on Rural Design, is a program of the National Endowment for the Arts. It was founded in acknowledgement of the environmental and cultural values embedded in America's natural, agricultural, and small-town landscapes, which are endangered by both economic stagnation and poorly planned growth. See http://www.nea.gov/partner/design/cird.html.

Houses". *manteo.govoffice.com/vertical/Sites/{FA5B00D1-7FF5-44C9-8717-2CCB2DD41EDC}/uploads/{9852CA26-D6A4-4951-ABFC-76D2C4CC11AF}.PDF* (49 pp).

## 5.2 Long-Term Implementation Options

**Prepare a Corridor Development Plan**

The Pamlico County technical assistance effort is one-step in a much larger process. When Pamlico County submitted an application to the Smart Growth Implementation Assistance for Coastal Communities program, local officials identified several needs that were beyond the scope of work, one of which was a corridor development plan for realizing the county's vision.

Local officials may want to consider hiring a consultant for this important task. Through a corridor development plan, the county can integrate the vision citizens developed during the technical assistance workshop. As the plan is developed, the county will probably need to conduct fact-finding or problem analysis to identify, clarify, and quantify existing and emerging problems or conditions of which the community may be unaware or faintly aware.

**Prepare Ordinances for a Corridor Development Plan**

Local officials may wish to hire a consultant to examine Pamlico County's Coastal Area Management Act (CAMA) Land Use Plan and supportive documents. The review could consider each municipality's regulatory structure for development, which might include local land use ordinances, zoning, transportation requirements, and other codes and ordinances. Following the review, ordinance development would highlight specific provisions within existing LDRs that create barriers or disincentives for implementing the vision Pamlico citizens articulated.

Sometimes communities wish to have a single document that includes all development-related ordinances rather than many regulations. In this instance, a unified development ordinance (UDO) may be an appropriate option. A UDO could protect and develop various physical elements in the county in accordance with a comprehensive plan. If county or local jurisdictions lack the staff to implement the UDO, the consultant could develop strategies and templates to help the participating communities enact the UDO elements.

**Retrofit Hwy 55 with a Landscaped Median**

In recent years, NC DOT created the Strategic Highway Corridors Initiative to provide a network of high-speed, safe, reliable highways throughout the state. The Strategic Highways Corridors Initiative has identified access management techniques as crucial to achieving its goals and applies them to corridors participating in the program. One such technique is converting highways with continuous center turn lanes into median-divided highways, which NC DOT believes improves safety and increases traffic capacity on state highways.

Currently, Hwy 55 is not designated as a strategic highway corridor. However, as discussed earlier, adding a median to the existing upgrades might deliver the safety and capacity benefits cited by the NC DOT initiative as well as help to meet Pamlico's broader goals for development. Pamlico County officials may want to appeal to NC DOT for entry to the program.

**Apply Smart Growth Methods to Manage Stormwater**

As Pamlico County contemplates how and where growth should occur, it can also consider strategies for growth that will protect water quality. Watershed hydrology suggests three primary land use strategies can help to ensure adequate water resource protection:

- preserve large, continuous areas of absorbent open space;
- preserve critical ecological areas, such as wetlands, floodplains, and riparian corridors; and
- minimize overall land disturbance and impervious surface associated with development.

For communities, these strategies can be the basic steps that preserve watershed function and serve as a framework for development. Through open space planning and nodal development, Pamlico County can protect water resources and reduce stormwater runoff.

EPA reports that identify approaches to manage stormwater through development include:

- Protecting Water Resources with Smart Growth - *www.epa.gov/dced/pdf/waterresources_with_sg.pdf* (120 pp);
- Protecting Water Resources with Higher Density Development - *www.epa.gov/smartgrowth/pdf/protect_water_higher_density.pdf* (46 pp); and
- Using Smart Growth Techniques as Stormwater Best Management Practices - *www.epa.gov/smartgrowth/pdf/sg_stormwater_BMP.pdf* (112 pp).

**Create Bicycle Facilities**

Bicycling is a fun way to get around for people of all ages, whether for transportation or fitness. In 2000, the North Carolina Board of Transportation adopted a resolution to improve conditions for bicycling and integrate bikes into its long-range transportation systems.[73]

NC DOT has also made it easier for local governments to implement traditional neighborhood street networks in new developments. In 2002, NC DOT approved street design guidelines that include bicycle and pedestrian amenities.

To make bicyclists safer, the Division of Bicycle and Pedestrian Transportation has undertaken many projects: off-road facilities and on-road highway improvements; safety and education programs; bicycle route designation and signing; and other projects. Typically, these projects are divided into two categories: independent projects, which are not related to a scheduled highway project; and incidental projects, which are.

NC DOT can clarify for which projects Pamlico County is qualified. Although the Hwy 55 expansion has already started, officials can still ask about incidental projects. Moreover, Hwy 55

[73] According to the NC DOT Division of Bicycle and Pedestrian Transportation, the "long-range transportation system" generally refers to the desired future transportation system in NC to serve all modes of transportation adequately, including bicycle and pedestrian.

may qualify for incidental project support if the county implements strategies for access management. To learn more, visit *www.ncdot.org/transit/bicycle/*.

**Explore Strategies Targeting Billboard Signage**

Participants in the workshop expressed their desire to maintain the rural character of the county and placed a high value on scenic assets. Some communities are preserving their vistas by controlling billboard placement. Four states — Alaska, Hawaii, Maine, and Vermont — have banned billboards completely, in part because they rely on their natural beauty for the tourism-based portion of their economies. On the other hand, some jurisdictions have opted to limit the location, type, or frequency of billboard placement rather than prohibit them completely.

Communities interested in billboard regulation can begin by reviewing their current sign ordinance and conduct a billboard survey by counting, photographing, and mapping the locations of existing billboards. A model ordinance for billboards is available at Scenic America, visit *www.scenic.org/billboards/model_ordinance*.

**Manage the Appearance of the Hwy 55 Corridor Through Landscaping**

Landscaping commonly describes highway roadside planting projects. Although laypersons may view it as simply "beautification," the work goes beyond aesthetics. Landscaping also can help to meet one or more of the following goals:

- Restore the roadside to pre-existing conditions following construction or maintenance activities by introducing native and naturally self–sustaining plants in areas where soils and vegetation have been disturbed;
- Prevent infestations of noxious weeds, invasive plants, and other undesirable vegetation by using desirable plants that are naturally competitive, which lowers maintenance costs and reduces herbicide use;
- Prevent soil erosion and stabilize slopes;
- Enhance stormwater storage capacity;
- Improve water quality through natural filtration processes that remove pollutants from roadway runoff before it enters waterways;
- Improve air quality by adding more trees and shrubs, which remove pollutants from the air; and
- Make communities and scenic areas more attractive.

To learn more about NC DOT's programs for landscaping or beautification, visit *www.ncdot.org/programs/*.

**Manage Light Pollution Through "Dark Sky" Policies**

Pamlico County's sense of place is shaped by how it feels during the day and night. While the county offers picturesque scenes from land and water, the nocturnal sky also offers scenic views. The nighttime sky is a fundamental part of a rural feeling.

The glare and upward leakage from streetlights obscure less prominent stars that are usually visible in the dark. In some instances, the glare of bright streetlights may actually hamper visibility, especially for older drivers.

Several jurisdictions in North Carolina have adopted street lighting standards to provide adequate lighting while limiting leakage into the night sky. In 2001, the city of Raleigh passed a lighting ordinance that limits illumination spillovers across property lines and requires shielding parking lot fixtures so their light travels only down. As of May 2007, all residential fixtures were supposed to comply, even those installed before the rule passed. Orange County, NC, passed similar ordinances in 2003. By adjusting approaches to nighttime lighting, communities can preserve dark skies, foster a more pleasant and comfortable nighttime environment, and conserve energy. To learn more about lighting ordinances, visit *www.darksky.org/mc/page.do?sitePageId=56442&orgId=idsa*.

**Design Against Crime**

No community is crime proof. However, the county can encourage planning and designing in a manner that deters criminal elements, sometimes called Crime Prevention through Environmental Design (CPTED). Communities should be designed to be attractive, friendly, and engaging, but CPTED can add a layer of security without making a community seem less welcoming. CPTED includes three basic and overlapping strategies: natural surveillance, natural access control, and territorial reinforcement.

Natural surveillance, also known as "eyes on the street," designs development to make sure there is always activity and always people around to prevent the opportunity for crime. Some communities achieve this by mixing land uses within a structure—for instance, residential units above street-level retail. Traditional neighborhood design, with moderately high densities, street grids and blocks, and diverse land uses, makes walking more pleasant and convenient, meaning more people are out walking and can provide additional surveillance. Finally, designing homes with front porches can lead to more eyes on the street as people relax and socialize on their porches.

Natural access control focuses on limiting and guiding access. Properly located entrances and exits, fencing, landscaping, sidewalks and roadways, signage, and lighting can direct both pedestrian and vehicle traffic in ways that discourage crime.

Territorial reinforcement promotes a sense of ownership and responsibility. People living, visiting, or working in or around an area that is physically designed to protect designated space are more likely to challenge intruders or report suspicious activity. Such an environment also causes strangers or intruders to stand out. Fencing, seating areas, pavement treatments, art, signs, landscaping, and good maintenance of facilities and grounds show that these defined areas are civil and controlled. As a result, territorial reinforcement can reduce the perception that an area is not safe.

To learn more about CPTED, review SafeScape: Creating Safer, More Livable Communities Through Planning and Design, *www.planning.org/apastore/Search/Default.aspx?p=1889*.

# 6 CONCLUSION

This report presents a vision that was developed using Pamlico County residents' ideas and input. As a vision, it is only the first step in a larger process. It will require an investment of time, energy, preparation, and planning from Pamlico County's elected officials, government staff, local stakeholders, and citizens. As plans move forward, Pamlico County can take advantage of the lessons learned by other North Carolina communities that have created healthy, vibrant, and diverse places that achieved environmental, community and economic objectives.

Pamlico County is in a very good position to grow, enhance its quality of life, and maintain its sense of place, particularly if the county can get ahead of the pace of development with a positive vision. By creating clear expectations about the type of development the county and citizens want, and facilitating that development with a predictable and fair development process, the county can create a good environment for development and better outcomes for its citizens.

*Figure 49. Contrasting scenarios of unbridled development on the rural landscape (left) versus capturing the benefits of growth through nodal development (right).*[74]

[74] Wallace Roberts and Todd LLC and The Delaware Valley Regional Planning Commission granted permission to use the previous renderings. The images were prepared for the report *Managing Change Along the US 322 Corridor: Land Use & Transportation Issues, Policies and Recommendations, Volume 2: Framework Plan.*

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# APPENDIX A: EPA SMART GROWTH IMPLEMENTATION ASSISTANCE PROGRAM

Communities around the country want to get the most from new development and to maximize the return on their investments. Frustrated by development that gives residents no choice but to drive long distances between jobs and housing, many communities are bringing workplaces, homes, and services closer together. Communities are examining and changing zoning codes that make it impossible to build neighborhoods with a variety of housing types. They are questioning the fiscal wisdom of neglecting existing infrastructure while expanding new sewers, roads, and services into the fringe. Many places that have been successful in ensuring that development improves their community, economy, and environment have used smart growth principles to do so (see box). Smart growth describes development patterns that create attractive, distinctive, and walkable communities that give people of varying age, wealth, and physical ability a range of safe, convenient choices in where they live and how they get around. Growing smart also means that we use our existing resources efficiently and preserve the lands, buildings, and environmental features that shape our neighborhoods, towns, and cities.

As these approaches have grown in popularity, more and more communities want to pursue them. In many cases, they may need additional tools, resources, or information to achieve these goals. In response to this need, the Environmental Protection Agency's Development, Community, and Environment Division (DCED) has launched the Smart Growth Implementation Assistance Program to provide technical assistance—through contractor services—to selected communities. The goals of this assistance are to improve the overall climate for infill, brownfield redevelopment, and the revitalization of non-brownfield sites—as well as to promote development that meets economic, community, and environmental goals.

EPA, with its contractor ICF International, assembles Teams whose members have expertise that meets community needs. While engaging community participants on their aspirations for development, the Team can bring their experiences from working in other parts of the country to provide best practices for the community to consider.

*Principles of Smart Growth*

1. Mix land uses.
2. Take advantage of compact building design.
3. Create housing opportunities and choices.
4. Create walkable communities.
5. Foster distinctive, attractive communities with a strong sense of place.
6. Preserve open space, farmland, natural beauty, and critical environmental areas.
7. Strengthen and direct development toward existing communities.
8. Provide a variety of transportation choices.
9. Make development decisions predictable, fair, and cost-effective.
10. Encourage community and stakeholder collaboration in development decisions.

From the Smart Growth Network, www.smartgrowth.org

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# APPENDIX B: EQUITABLE DEVELOPMENT

Pamlico County residents and officials expressed concerns about the equity impacts of future development. In interviews, some citizens voiced concern about vulnerable residents being displaced as new residents move into Pamlico County. Interestingly, interviewees did not limit their perspectives on displacement to people. Some voiced apprehension of "new money displacing old money" through either higher property taxes and county taxes or policy decisions that appear to be tailored to accommodating the influx of new residents.

These concerns should not be dismissed. Community objectives for social equity should not be treated as an afterthought when the county considers strategies to manage the built environment. These considerations should be included in any discussion of economic development, transportation, land use, and environmental objectives.

Equitable development approaches are being applied in communities around the country.[75] The Team's objective is to provide Pamlico County with ideas for a development future that meets all their goals, including equity. The following options are provided for the county's consideration.

- *Encourage inclusionary zoning* - Inclusionary zoning is being successfully adopted in many communities. These places are changing their regulations to require or provide incentives for private developers to include more affordable housing choices. In return, development costs are reduced through variances, density bonuses, development rights, or expedited permits. Montgomery County, Maryland, passed the first inclusionary zoning ordinance in 1974. Since then, numerous jurisdictions such as Sacramento, California; Santa Fe, New Mexico; Denver, Colorado; and Cambridge, Massachusetts, have found inclusionary zoning to be an important tool to both produce and equitably distribute affordable housing in line with smart growth principles. To learn more, see the translation paper "Regional Equity and Smart Growth." *www.fundersnetwork.org/usr_doc/Regional_Equity_and_Smart_Growth_2nd_Ed.pdf* (24 pp, 359KB).

- *Help citizens with fixed incomes make home improvements* – In North Carolina and across the nation, volunteers are helping to preserve and revitalize houses and communities. In the process, they are assuring that low-income homeowners, from the elderly and disabled to families with children, live in warmth, safety, and independence. Mountain Housing Opportunities (MHO), a rural home rehabilitation program, increases safety, longevity, and energy efficiency of homes in Buncombe County, NC. Since 1991, MHO has completed over 110 rehabilitations of homes for low-income homeowners. Improvements may include roof replacement, windows, doors, insulation, siding, heating repair/replacement, electrical and plumbing updates, and improving the structural integrity of the house. MHO's objective is to bring participating homes up to federal housing quality standards. The MHO programs keep homeowners safe; reduce monthly energy costs; invest in the community; and instill a sense of pride in the homeowner.
  Mountain Housing Opportunities: *www.mtnhousing.org/*

- *Enable more citizens to participate in economic growth through capacity building and financial literacy* - Capacity building occurs through outreach, education, and technical assistance. The objective of capacity building is to develop a certain skill or competency.

[75] Equitable development is defined as an approach to meet the needs of distressed communities through projects, programs, and/or policies that reduce disparities while fostering places that are healthy, vibrant, and diverse.

Financial literacy programs represent a vital method for capacity building, and many are designed to reduce the wealth gap in distressed communities. The Durham based Self-Help Credit Union worked to enact North Carolina's landmark anti-predatory lending mortgage law in 1999. Self-Help then created the Center for Responsible Lending to protect home ownership and family wealth by working to eliminate abusive financial practices. Through its programs, Self-Help has demonstrated that low-income borrowers pose no greater credit risk than others as borrowers. Moreover, such borrowers are determined to repay their loans, build their businesses, and improve their communities.
Self-Help Credit Union: *www.self-help.org/about-us*

- *Support apprenticeships to build skills and transfer knowledge* – Apprenticeships provide an opportunity for young people to learn an occupation through on-the-job training and related instruction. Youthbuild shows young people how to build new homes for people in need and new lives for themselves. Each year, participants in Youthbuild receive a combination of academic instruction and job skills development as well as on-site training in a construction trade. With support from the U.S. Department of Housing and Urban Development, Youthbuild participants enhance their skills as they construct and/or rehabilitate affordable housing for low-income and homeless persons or families. Since the program began in 1993, it has awarded more than $485 million in grants, enabling more than 47,000 young people to construct or rehabilitate more than 13,000 affordable housing units in their communities.
  Youthbuild: *www.hud.gov/offices/cpd/economicdevelopment/programs/youthbuild/index.cfm*

  Communities also have the option of preparing community benefits agreements, to expand opportunities for apprenticeships for youth or adults who are economically disadvantaged and seeking opportunities for more gainful employment. To learn more about community benefits agreements, visit
  *www.goodjobsfirst.org/accountable_development/community_benefit_vic.cfm*.

- *Design multi-pronged outreach strategies to engage a broader segment of the community* – Leading up to the technical assistance site visit in Pamlico County, the EPA/NOAA Team encouraged the local organizing team to aim for visioning workshops that would include citizens from all walks of life. Local organizers were also briefed about other community visioning charrettes that did not yield diverse participation.

  Learning from these efforts, the organizing team applied an outreach strategy developed by Larry Charles of ONECHANE, a United Way funded community organization in Hartford, Connecticut. The ONECHANE strategy encourages reaching beyond political and professional stakeholders and including churches, parents, senior citizens, schools, retirement centers, and community service organizations. In the end, Pamlico County's organizing team was pleased with the results of the outreach strategy as demonstrated by broad representation reflected in the community workshops and the participation of attendees from varying backgrounds.

- *Consider faith-based economic development* - Through coalition building, resourcefulness, and leveraging human capital, faith-based institutions have stepped in to fill voids left by government and the private sector. The community outreach focus of ecumenical institutions has helped them to understand local needs. In some instances, faith-based institutions have opted to address voids in their immediate communities by creating new ministries that target entrepreneurship, education, social services, and homeownership. Many mainstream groups recognize the successful record of accomplishment of religious institutions in supporting

community and social initiatives and consider it smart business to involve faith-based institutions in rehabilitation and development.

Working across denominational and racial lines to address the needs of rural people, the North Carolina Rural Economic Development Center launched the Communities of Faith Initiative in 1993. The initiative built an alliance among some of the most prevalent, powerful institutions in rural communities – rural churches – to support those most in need. Under the Communities of Faith umbrella, the Rural Center conducted several projects, including the Church Child Care Initiative and the Work First Job Retention and Follow-Up Model Program. To learn more, go to Communities of Faith Initiative, *www.ncruralcenter.org/research/faithcommunities.htm*

Please note, if a church opts to create a faith-based economic development corporation whose services include neighborhood construction projects, attention to high-quality design will be as important as improving quality of life.

- *Create parks* – The high rates of obesity and related chronic illnesses have reminded the public about the importance of recreation and physical activity. According to the International City/County Management Association (ICMA), lower income households face barriers to healthy lifestyles, including physical inactivity, limited access to fitness gyms or recreational clubs that support healthy and active lifestyles, and differences in the ability to afford and make time for active lifestyles. In some cases, the lack of proper pedestrian infrastructure complicates the problem because the absence of sidewalks or community trails makes it more difficult to incorporate physical activity into one's daily routine. ICMA also argues that as local governments plan and design healthy communities, they need to take extra steps to ensure that the most vulnerable populations have access to the same choices and opportunities for healthy lifestyles as the population at large.

  Princeville, NC, was the nation's first town founded by African Americans. The town was devastated by Hurricane Floyd in 1999. Determined to rebuild, the town, in cooperation with the Trust for Public Land, received a grant to acquire an 11-acre tract of land to create the Riverside Heritage Park. The park will serve as an access point for a heritage trail. Moreover, the new park will be large enough to accommodate a variety of sports activities, a playground, and a community center, *www.tpl.org/tier3_cd.cfm?content_item_id=9780&folder_id=589*.

- *Promote cultural tourism* – Pamlico County's citizens can work cooperatively to guide future growth as well as strengthen a tourism economy that builds on the "shared story" of the people that populate the county. Preservation can extend beyond historic buildings, monuments, and sites -- landscapes can tell a story. Landscapes are an important part of a community's heritage, and citizens feel strong connections to landscapes that reflect their history. Frequently, the public must go to museums, libraries, or archives to learn about a place's heritage, but with appropriate care, promotion, and interpretation, landscapes can contribute significantly to local economic development through cultural tourism.

  In Tyrrell County, North Carolina, citizens of all racial and economic backgrounds worked together to create Vision 2000, a plan intended to revitalize the county and to improve the quality of life for all residents. Vision 2000 has spawned a number of successful projects. One of the most popular elements of the plan was the idea of creating a single, community-wide event. This recommendation became a reality in 1991 when a waterfront festival was established to celebrate the entire community, the Scuppernong River Festival.

- *Apply the Environmental Justice Collaborative Problem Solving (CPS) Model* – The problems plaguing distressed communities can be big – too big for one person, one community organization, or one government agency. In these instances, collaborative problem solving may be an effective way for multiple groups to work together to resolve problems.

  EPA's Office of Environmental Justice (OEJ) created the CPS model as part of its ongoing commitment to ensure environmental justice for all communities. Communities can apply the model to achieve multiple goals, such as empowerment, strategic planning, education, good government, and sustainable development. The CPS model has been used effectively in Spartanburg, South Carolina, where a community-based organization called ReGenesis brought together the public, government, and industry to overcome tremendous obstacles to address long-standing local government, public health, and socio-economic ills. In doing so, the stakeholders worked together to improve the community's quality of life and promote economic growth and sustainability. OEJ also provides direct financial and technical assistance to community-based organizations through a cooperative agreement program around the framework of the CPS model. To learn more about opportunities for assistance, go to *www.epa.gov/Compliance/environmentaljustice/grants/ej-cps-grants.html*.

- *Be proactive, and anticipate change* – Communities should develop strategies to encourage equitable development before market forces overwhelm them. Unfortunately, many communities don't focus on the social impacts of land use and economic development decisions until there are reports of unanticipated challenges such as:

  - "mom and pop stores" that go out of business because they can no longer keep up with increasing rents or property taxes;
  - historic assets that are jeopardized or demolished due to failures to engage citizens who could have properly identified them; or
  - minority farmers feeling pressured to sale heir property because they are unaware of the spectrum of options that could help them to retain it.

  The benefits of smart growth cannot be realized if communities overlook the needs of incumbent residents. Local governments can conduct a strategic assessment or community impact assessment to inform officials of the impacts of proposed development projects upon their communities and underserved groups. The findings from the assessments can help communities to make fully informed decisions about development or prepare strategies to offset undesired outcomes. Equitable development can help vulnerable populations to enjoy the benefits that investment brings to a community.

To learn more about equitable development, visit the following sites:

- In 2006 and 2007, U.S. EPA issued awards to recognize community projects that achieve the objectives of equitable development. Summaries for the projects are online at *www.epa.gov/smartgrowth/awards.htm*.

- Collaborative problem solving is a strategy being applied in distressed communities to address local environmental, health and economic issues. This report presents EPA's Environmental Justice Collaborative Problem-Solving Model and features Spartanburg, SC, as a case study to demonstrate how the model was applied to bring about remarkable changes in the community,

http://www.epa.gov/compliance/resources/publications/ej/grants/cps-manual-12-27-06.pdf, 44 pp).

- PolicyLink has compiled a comprehensive set of policy options to advance economic and social equity. The tools in the Equitable Development ToolKit have been crafted to help community builders achieve diverse, mixed-income neighborhoods, *www.policylink.org/EDTK/default.html*.

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# APPENDIX C: CONTEXT-SENSITIVE OPTIONS FOR HIGHWAY 55 WITHIN THE NODE

To reduce redundancy, the Team opted to present the remaining context-sensitive design options for Hwy 55 in the Appendix. The presentation of the "multi-modal option" in the body of the report does not suggest it is the preferred option. Stakeholders in Pamlico County may consider an option in the appendix to be desirable, or they may wish to explore additional alternatives. The remaining options developed by the team include:

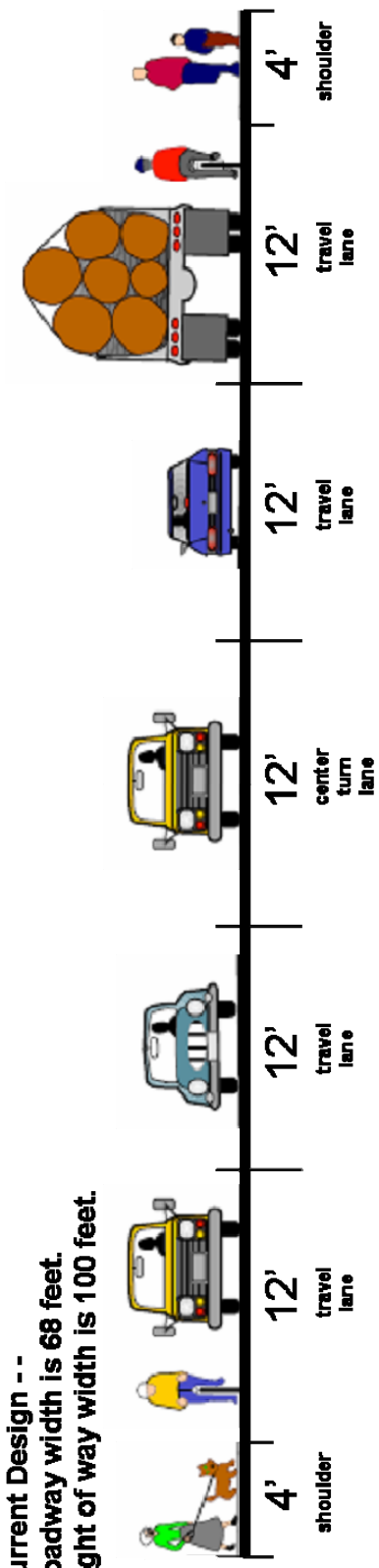
- commuter-oriented approach;
- lane removal approach; and
- pocket park approach.

These options were prepared in response to local concerns for: avoiding congestion; increasing traffic calming; and reinforcing the local sense of place.

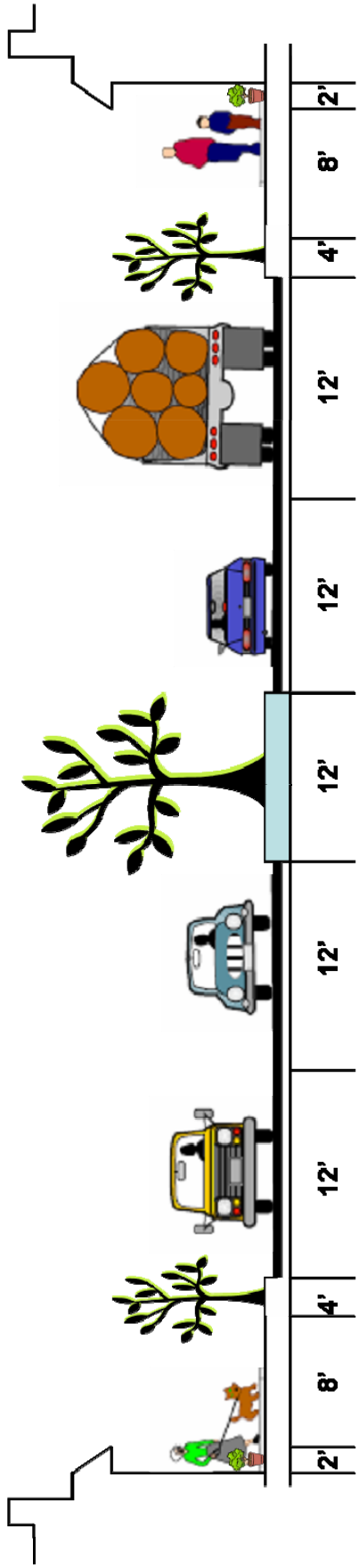
- The "commuter-oriented" approach (Figure 50) addresses residents' concern about rush hour traffic. This approach retains the lane widths associated with the current upgrade (12 feet each). The sidewalks would be enlarged to 14 feet to accommodate a frontage and furnishing zone. The exterior traffic lanes would accommodate motorized travel during rush hours (7:00 a.m. to 9:30 a.m. and 4:30 p.m. to 6:00 p.m.). During off-peak hours, the exterior lane would be used for on-street parking. Travel on the interior traffic lanes would be uninterrupted. In Figure 50, the paved section of the ROW for the current upgrade is 68 feet wide, and the paved section of the ROW for the commuter-oriented approach is 88 feet wide.
    - Pros: The commuter-oriented approach has a wider sidewalk with space for a furnishing zone to allow street trees or benches to buffer pedestrians from the street. Cars and larger vehicles are fully accommodated during rush hours. Using the exterior lane for parking during non-peak hours will reinforce the buffer for pedestrians, and it may encourage new business to locate along the street.
    - Cons: This approach does not feature a bicycle lane, and the Team is not aware of any restrictions to bike lanes. If this option were implemented without bike lanes, bicyclist and cars would have to share the exterior lane. During peak traffic periods, law enforcement officers will have to monitor and enforce the use of the exterior lane as a travel lane

Figure 50.

**Current Design - -**
**Roadway width is 68 feet.**
**Right of way width is 100 feet.**




**Commuter-oriented option**




**Comparison between a standard arterial and an arterial with enhancements based on the "commuter-oriented" approach.**

**Exterior lane could serve as a shared lane. During non-rush hours (9:30am to 4:30pm), it could accommodate parking.**

**Widths for the enhanced option represent typical dimensions, but specific designs could vary.**

The "lane removal" approach (Figure 52) manages traffic by restricting the number of lanes within the node, and it integrates additional measures for traffic calming. In this model, the sidewalks are 16 feet wide. In addition, streets are narrower at intersections because the curb extends into the exterior lane by 8 feet. The extension means the exterior lanes would be used for on-street parking rather than as travel lanes. In addition, the center turning lane will be replaced with a vegetated, raised center median. The interior lanes will each be 12 feet wide, including the center median. For this option, the paved section of the ROW is 84 feet wide.

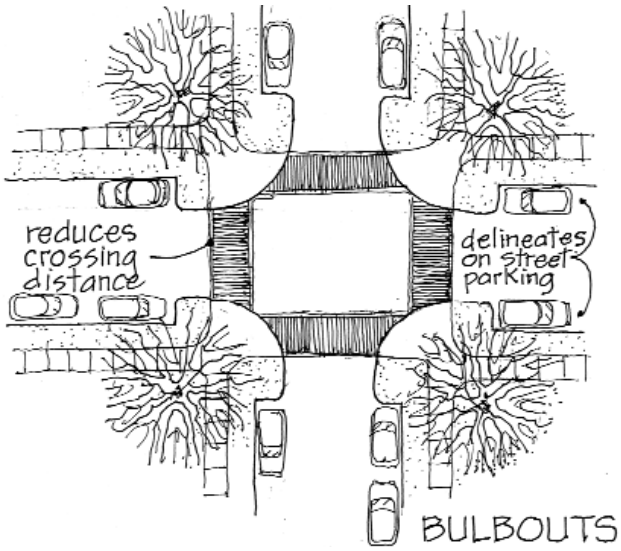



*Figure 51. Rendering of a curb extension from the Davidson, NC, planning ordinance.*[76]

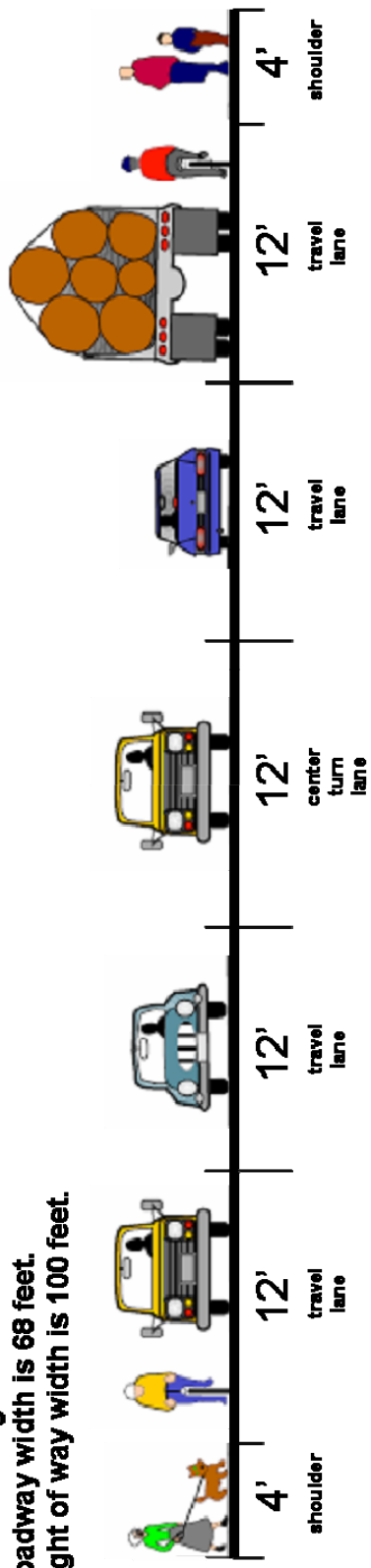
- Pros: The lane removal approach redesigns segments of the upgraded highway in the node so that the road functions like a two-lane highway. The curb extensions create permanent on-street parking. In addition, the approach applies multiple traffic-calming methods, such as widening the sidewalk, extending the curbs, and using street trees for a perceived reduction in the width of the interior lane. The wider sidewalk and curb extensions could further soften the feel of the street by adding plants and trees. The model balances the needs of pedestrians and drivers. The narrower street makes it easier for seniors or persons with physical disabilities to cross safely. Finally, the 16-foot wide sidewalks should provide sufficient space for a mix of uses, such as outdoor café-style dining.

- Cons: This approach eliminates two of the travel lanes for motor vehicles. When the travel lanes require maintenance, through traffic will need to be redirected. Bicyclists have to share the travel lane with motor vehicles, but traffic calming should make biking more feasible.

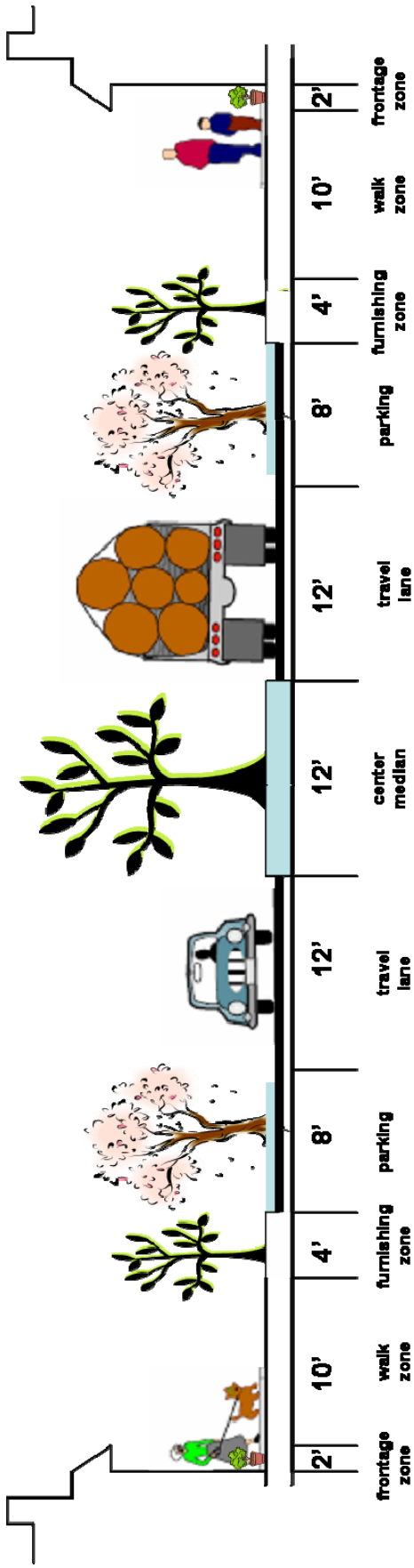
[76] *The Town of Davidson Planning Ordinance*

Figure 52.

**Current Design - -**
**Roadway width is 68 feet.**
**Right of way width is 100 feet.**




**Lane removal option**




**Comparison between a standard arterial and an arterial with enhancements based on the "lane removal" approach.**
**Widths for the enhanced option represent typical dimensions, but specific designs could vary.**

- The "pocket park" approach (Figure 53) treats the downtown segment of the highway as public space. This approach uses many of the techniques featured in the lane removal approach. The sidewalks are reduced to 13 feet wide, and the travel lanes are narrowed to 11 feet. The center median has been replaced with a 26-foot-wide pocket park. For this option, the paved section of the ROW is 90 feet wide. Although there is no center lane, left turns can occur at controlled locations at the ends of the park. The terminal points of the park would be narrowed to permit turns. The park length is left to the discretion of the community. It could be anywhere between 200 to 3,000 feet long.

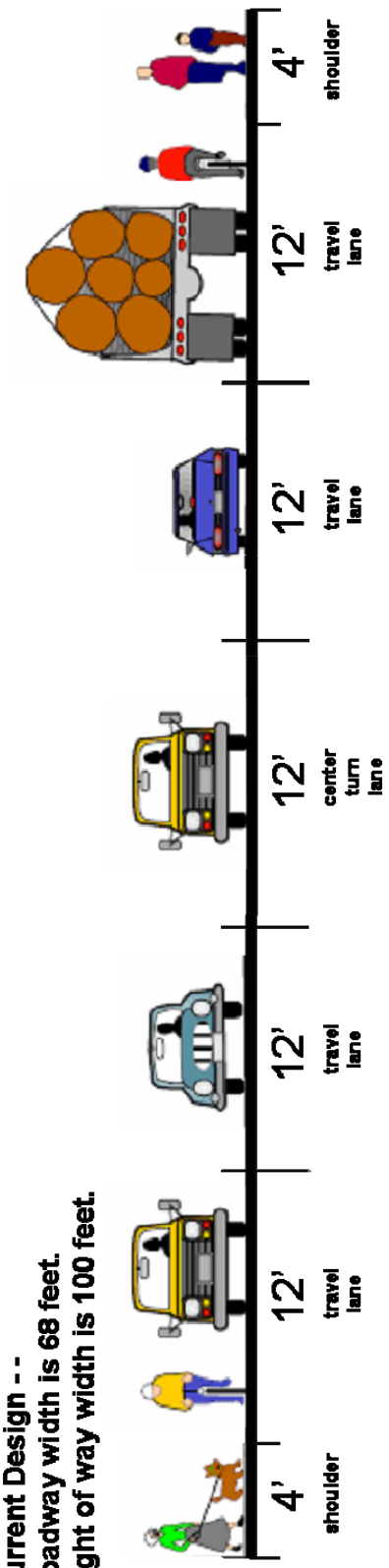
    - Pros: The pocket park approach treats the street as an extension of the public's space. As a result, the streetscape serves many purposes beyond conducting vehicles. For example, the pocket park will make the street a destination for local citizens and visitors. As a destination, the area surrounding the pocket park will be a "street room." A pocket park increases public open space and reduces impervious surface cover. Greening the streetscape will make it more welcoming and give local teenagers a place to gather that many citizens in Pamlico County believe is desperately needed. Inserting a pocket park into the center of the right of way will effectively calm the traffic through real and perceived reductions in lane width. Moreover, the approach is extremely pedestrian friendly. In effect, the park is a refuge for pedestrians who cross the street, and it encourages strolling and lingering.[77]

    - Cons: This approach is the most physically intensive context-sensitive design solution. As a result, it could be the most expensive. The sustained success of the pocket park will require landscaping and maintenance. Law enforcement may be needed to keep the area safe and pleasant; however, merchants, patrons, and residents along the street may offer informal surveillance by having "eyes on the street." Some citizens may think the vehicle lanes are too narrow. Finally, bicyclists will have to share the travel lanes with motorists. However, proper signage that reinforces the message that sharing the lane is an expectation rather than an exception may help to encourage highway etiquette and cooperation. For example, some communities post "Share the Road" signs as a potential means of alerting motorists to the presence of bicyclists and encouraging cooperative behavior.

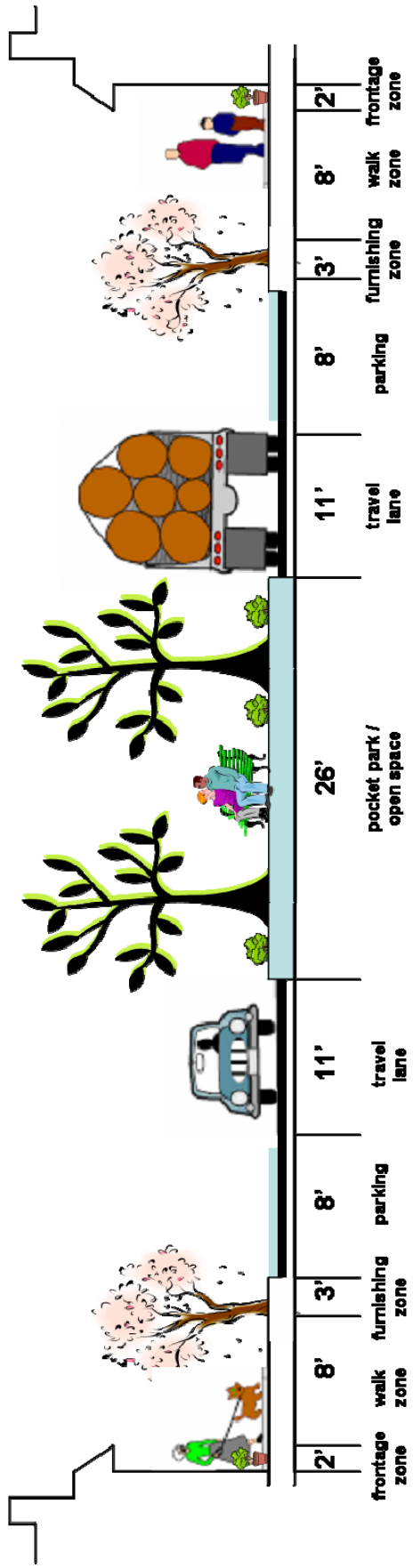
[77] Strolling represents a form of walking that is characterized as being leisurely.

Figure 53.

**Current Design -- Roadway width is 68 feet. Right of way width is 100 feet.**




**Pocket park option**




**Comparison between a standard arterial and an arterial with enhancements based on the "pocket park" approach. Widths for the enhanced option represent typical dimensions, but specific designs could vary.**

*Access Management for Highway 55*

During the technical assistance workshop, the Team discussed ways to reduce the number of access points directly to Hwy 55 and to preserve the flow of traffic on the arterial. Visuals and notes from the Team's presentation are provided here to complement the discussion from the subsection "*Managing Access on Highway 55*." This sequence illustrates how adjustments can be made to the roadway to encourage safety and efficiency while providing for a more attractive corridor.[78]

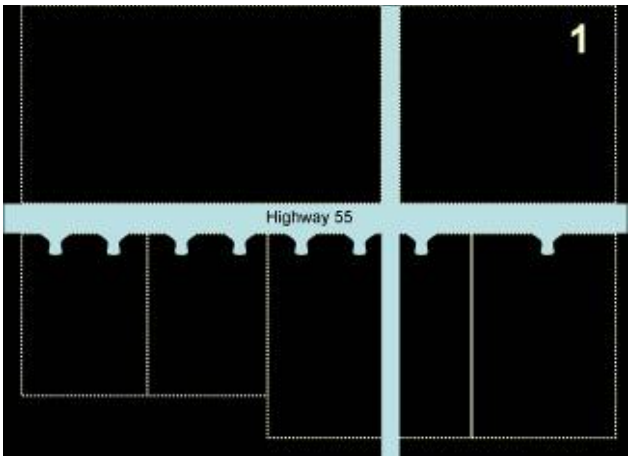



*Figure 54. Highway 55 currently has many driveways entering from adjacent parcels. Some businesses along the corridor have two driveways to Hwy 55. Having this many uncontrolled driveways can increase the potential for accidents, hinder traffic flow, and interrupt sidewalks.*

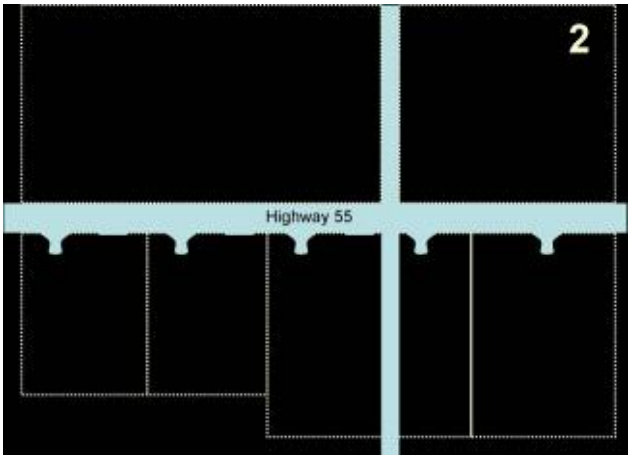



*Figure 55. Pamlico County officials could improve highway capacity by encouraging business owners with two or more driveways to eliminate one point of direct access to Hwy 55.*

[78] Diagrams, Charlier Associates, Inc.

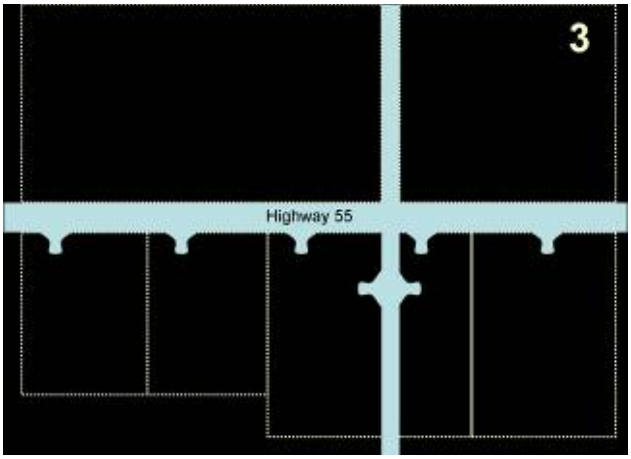



*Figure 56. An alternative to direct access to the highway is to establish secondary entrances on the sides of lots where possible.*

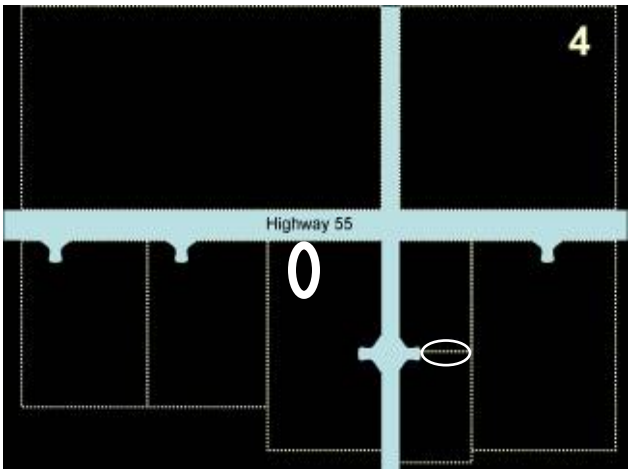



*Figure 57. When an existing parcel is subdivided, the new parcels can share side access (as indicated by the oval on the right). Moreover, providing side access along contiguous parcels can eliminate the need for access from the front of the parcel. This approach further reduces the number of driveways (the oval on the left notes the former position of the driveway).*

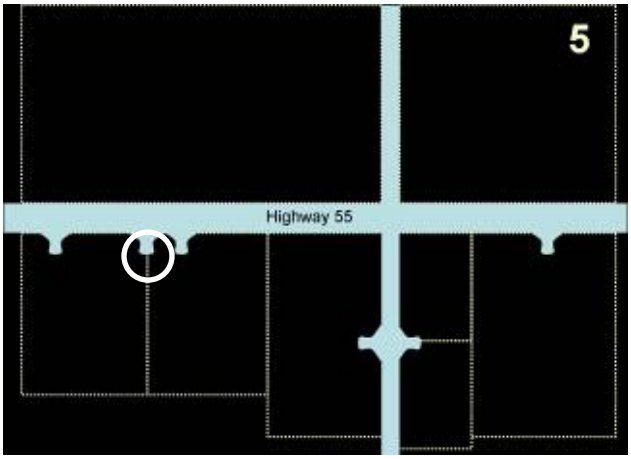



*Figure 58. When side access is not feasible, adjacent parcels can share one entrance to the highway (as indicated by the circle on the left). See next slide as well.*

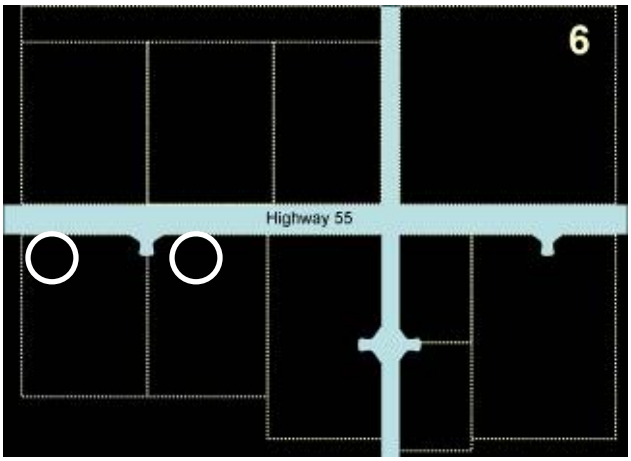



*Figure 59. Sharing an access point further reduces driveways and controls access to the highway (circles indicate the former positions of driveways).*

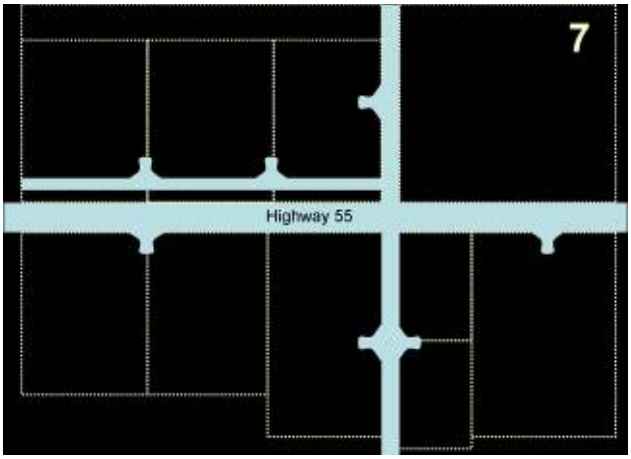



*Figure 60. If land on the opposite side of the right of way is subdivided, Pamlico County could encourage side access on new lots. Further, a local access road could be added for front access to parcels. This will reduce the mixing of local and pass-through traffic. As noted earlier, the service lane should be designed with access management in mind; adjacent parcels can share the point of access.*

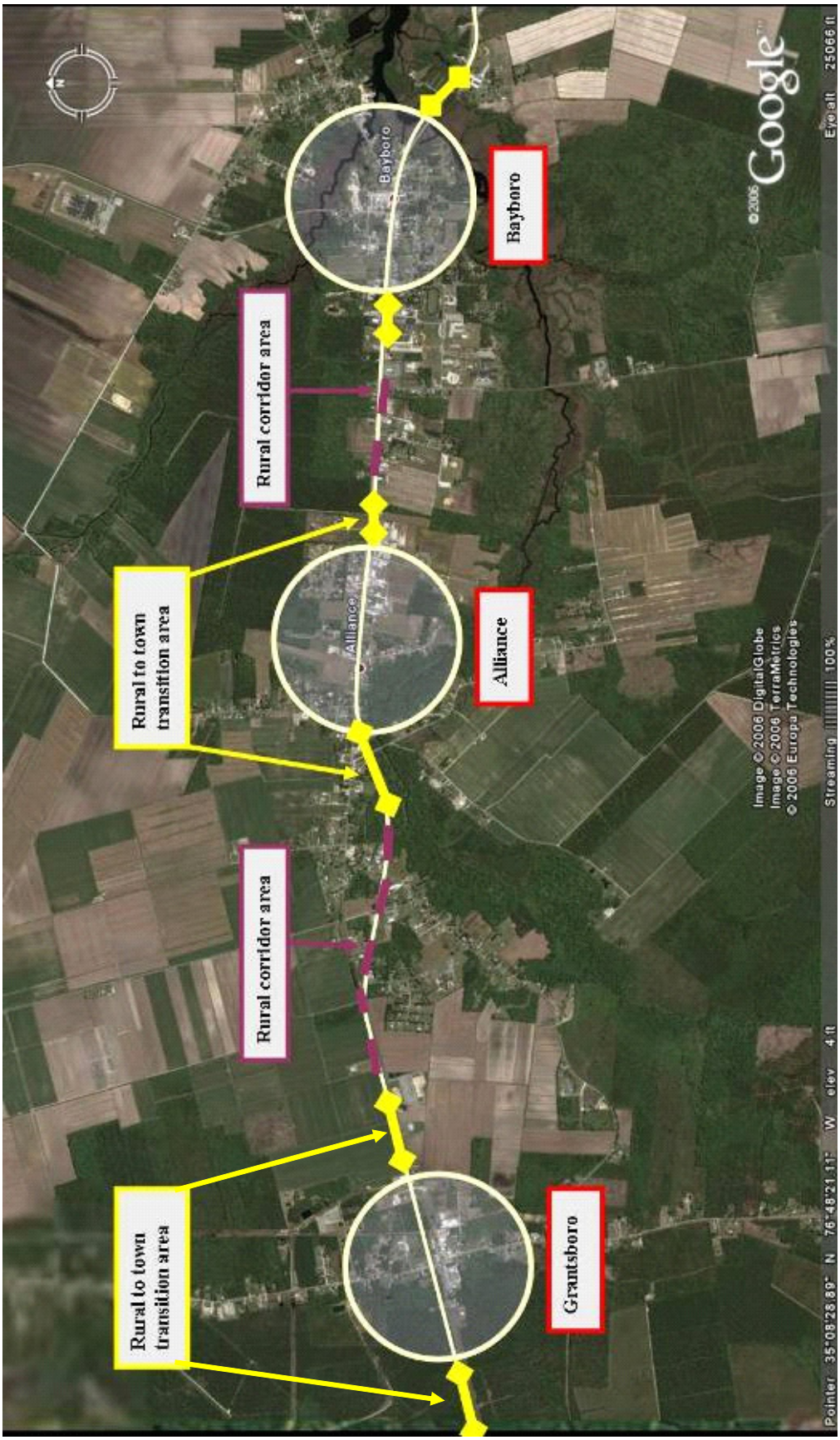



*Figure 61. Highway 55 corridor showing the towns of Grantsboro, Alliance, and Bayboro; the rural to town transition areas; and the rural corridor areas outside the towns. Base map: Google Earth*

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# APPENDIX D: REVIEW OF PAMLICO COUNTY SUBDIVISION ORDINANCE

*Table 3. Findings from the Team's Review*

| ***Ordinance Section*** | ***Requirement in the Ordinance*** | ***Observation*** |
|---|---|---|
| 1.2 | To promote the elimination of unsafe conditions arising from the overcrowding and concentration of population. | May prohibit compact development patterns that are the foundation of many of North Carolina's most popular towns and town centers. |
| 12.5 | …. blocks shall be determined with due regard to…. needs for vehicular and pedestrian circulation…. | The county could consider rewriting the requirement to include bicycles or biking as a transportation mode. |
| 12.6 | Block lengths shall not be less than 500 feet or more than 1500 feet…. | During the technical assistance workshop, the Team shared, block sizes between 250' and 350' tend to create better conditions for walking and help to create a street network with high connectivity. |
| 13.3 | Public streets …. shall be constructed to the standards necessary… on the State Highway System or the standards in this ordinance. | In recent years, some communities, across the country, have taken the initiative to update their ordinances and include standards for context sensitive design solutions and complete streets. |
| 13.8 | Cul-de-sacs shall be provided at the end of all public and semi-improved roads if dead ending, unless the road is looped. | Cul-de-sacs and dead-end streets are inconsistent with efforts to manage traffic and preserve Hwy 55 capacity through better connectivity. Pod development can contribute to vehicular congestion by pushing all traffic onto a single arterial. |
| 13.8 | All subdivision roads… shall be connected by a connecting street to a state maintained road or highway… | The requirement does not specify provision of pedestrian infrastructure.<br>Also, the ordinance does not suggest when land is sold and subdivided that it should not necessitate more access points than required in order to avert the addition of uncontrolled driveways accessing the state maintained road or highway. |
| 13.10 | The subdivider of a nonresidential subdivision shall provide streets in accordance with… | Many recently updated ordinances require context-sensitive design solutions and complete streets. |

| | | |
|---|---|---|
| 13.11 | The design of all public streets and roads… shall be designed in accordance with… | Many recently updated ordinances require context-sensitive design solutions and complete streets. |
| 13.15 | An approved driveway permit is required for connection to any existing state system road. | The access management policies the Team has presented discourage or do not allow driveways to connect to state roads. The Team has suggested requiring instead that driveways connect to local streets, which connect to state roads at formal intersections. |
| Article 16 | Group, Cluster, Planned Unit Development (PUD) | New residential development projects (neighborhoods, subdivisions, Pods, etc.) can be required to provide 35 percent to 40 percent affordable housing for persons earning 80 percent of the AMI and below. |
| 16.4 | There shall be no more than one dwelling unit or separate unit of ownership, on average for each acre of the PUD utilized. | The average density in the current subdivision ordinance is quite low. For projects in rural portions of the county, rural character may be better maintained with even lower densities. For towns, this density may make it difficult to build the neighborhoods residents want. An average density of five to eight units per acre may be desirable in these areas. |
| 16.5 | The average lot size for single family lots within the PUD with frontage on a naturally occurring water shall be ¾ of an acre; otherwise, the average size of all single family lots within the PUD shall be one-half (1/2) acre. There shall be no more than one dwelling unit or separate unit of ownership, on average for each acre of the PUD utilized. | This requirement may make it impossible to provide the variety of housing types, such as single-family homes, live/work units, town homes, or senior apartments, which residents want. The average density is quite low. For projects in rural portions of the county, rural character may be better maintained with even lower densities. For towns, this density may make it difficult to build the neighborhoods residents want. An average density of five to eight units per acre may be desirable in these areas. |
| 16.9 | Streets | The county could require that streets incorporate infrastructure for pedestrians and bicyclists. |

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## APPENDIX E: TOOLS, REPORTS, AND RESOURCES

Pamlico County can consult these resources as it develops implementation options for the vision. Additional resources are in the "Works Cited" section. The resources are grouped into the following categories:

- Building Form and Design for Towns
- Streets in Town
- Access Management
- Walkability
- Traditional Neighborhood Design
- Special Places
- Stewardship at the Water's Edge
- Compact and Mixed Use Development
- Safe Routes to School
- Context Sensitive Design
- Open Space and Conservation Strategies

*Building Form and Design for Towns*

- Some communities have found a form-based code to be useful. Form-based codes emphasize the appearance and qualities of buildings and blocks rather than their uses. They encourage public participation because they are more visual than traditional zoning codes, making it easier to understand what type of buildings they will allow. They encourage a mix of uses and a mix of housing types. A good introduction to form-based codes is at http://www.lgc.org/freepub/PDF/Land_Use/fact_sheets/form_based_codes.pdf. (8 pp)

  One example of a form-based code is the Smart Code, developed by urban-design firm Duany Plater-Zyberk. The Smart Code combines zoning, subdivision regulations, urban design, and basic architectural standards. It is intended to be customized to local needs. It is available at *www.dpz.com/pdf/SmartCodeV7.0-6-06-05.pdf* .

- Arlington, Virginia's form-based code uses simple and clear graphic prescriptions and parameters for height, siting, and building elements to address the basic necessities for forming good public space, *www.arlingtonva.us/Departments/CPHD/Forums/columbia/current/CPHDForumsColumbiaCurrentCurrentStatus.aspx*

- St. Lucie County, Florida, adopted its form-based code before starting development. The code provides explicit standards for villages, *www.spikowski.com/StLucieLDRrevisions-Ordinance06-017-AsAdopted.pdf* (100 pp)

- PAS Report (399): Aesthetics & Land-Use Controls *www.planning.org/APAStore/Search/Default.aspx?p=2332*

- Ten Principles for Reinventing America's Suburban Strips *www.uli.org/AM/Template.cfm?Section=Home&CONTENTID=56786&TEMPLATE=/CM/ContentDisplay.cfm*

*Streets in Town*

- PAS Report (418): Designing Urban Corridors *www.planning.org/APAStore/Search/Default.aspx?p=2349*

- The Design of New Urbanist Streets *www.tndengineering.com/papers/ULI-4-2000.pdf*

*Access Management*

- Driveway Density and Driveway Consolidation *www.ctre.iastate.edu/research/access/toolkit/3.pdf*

- Ten Ways to Manage Roadway Access in Your Community *www.cutr.usf.edu/research/10ways.pdf*

*Walkability*

- Creating Walkable Communities: A Guide for Local Communities *www.bikewalk.org/pdfs/ncbwpubwalkablecomm.pdf* (109 pp)

- Pedestrian Facilities Users Guide: Providing Safety and Mobility *www.nysphysicalactivity.org/site_beactiveenv/nybc/source_files/3_pedfac_improve/FHA_PedFacUsersGuide.pdf* (164 pp)

*Traditional Neighborhood Design*

- The city of Austin, Texas, has a TND code that is a parallel code, *www.ci.austin.tx.us/tnd/*

- A model TND ordinance prepared for Wisconsin, *www.wisc.edu/urpl/people/ohm/projects/tndord.pdf* (33 pp, 550.91KB)

- Making Land Use Regulations Work for Smart Growth. *www.smartgrowth.org/pdf/LDRscript.pdf*

*Special Places*

- Project for Public Spaces: What is a Great Civic Space? *www.pps.org/info/placemakingtools/casesforplaces/benefits_public_spaces*

- Project for Public Spaces: Good Places
  *www.pps.org/info/placemakingtools/casesforplaces/goodplaces*

- Park Grant for Princeville
  *www.tpl.org/tier3_cd.cfm?content_item_id=9780&folder_id=589*

- Lighting Ordinances
  *www.darksky.org/mc/page.do?sitePageId=56442&orgId=idsa*

- Billboards Hamper Economic Growth
  *www.scenic.org/billboards/background/econ_growth*

- Hiding Security in Plain Site
  *www.wichita.gov/CityOffices/Police/Support+Services/Administrative+Bureau/CommunityAffairs/CPTED.htm*

*Stewardship at the Water's Edge*

- Project for Public Spaces: How to Turn a Waterfront Around
  *www.pps.org/info/newsletter/february2007/turn_waterfront_around*

- The Public Waterfront
  *www.nyswaterfronts.com/waterfront_public.asp*

- Knoxville, Tennessee, South Waterfront Vision Plan
  *www.ci.knoxville.tn.us/southwaterfront/default.asp*

*Compact and Mixed Use Development*

- The American Planning Association has model smart growth codes available at *www.planning.org/smartgrowthcodes*. These codes encourage mixing land uses, preserving open space and environmentally sensitive areas, providing choices in housing and transportation, and making the development process more predictable.

- The Local Government Commission's *Smart Growth Zoning Codes: A Resource Guide* studies codes that have been implemented in communities around the country. Its main areas include traditional neighborhood design, which encourages walkable, mixed-use neighborhoods; mixed-use and live/work codes, which help diversify land uses; street and block design that makes it easy and comfortable for people to walk, bike, or drive; parking guidelines that use land more efficiently; and design regulations that help maintain or create attractive, distinctive, safe places. The resource guide is on the Local Government Commission Web site, *www2.lgc.org/bookstore/detail.cfm?itemId=34*.

- The state of Oregon published a *Commercial and Mixed Use Development Handbook* that describes how to create a mixed-use zone,
  *www.oregon.gov/LCD/docs/publications/commmixedusecode.pdf* (79 pp, 1.07 MB)

- Creating Great Neighborhoods: Density in Your Community
  *www.epa.gov/smartgrowth/density.htm*

- Getting to Smart Growth: 100 Policies for Implementation
  *www.epa.gov/smartgrowth/getting_to_sg2.htm*

- Getting to Smart Growth II: 100 Policies for Implementation
  *www.epa.gov/smartgrowth/getting_to_sg2.htm*

- Town of Franklin Neighborhood Mixed Use District Regulations
  *www.franklinnc.com/pdf/Neighborhood_Mixed_Zoning_District_1.pdf*

*Safe Routes to School*

- Guiding Principles for Applying Safe Routes to School Engineering Solutions
  *www.saferoutesinfo.org/guide*

- California Safe Routes to School *www.dhs.ca.gov/routes2school/documents/w2s2001.pdf*

- NC DOT Safe Routes to School Program
  *www.ncdot.org/transit/bicycle/safety/programs_initiatives/Safe_Routes.html*

*Context Sensitive Design*

- NC DOT Strategic Highway Corridors
  *www.ncdot.org/doh/PRECONSTRUCT/tpb/SHC/documents/*

- Urban Advantage
  *www.urban-advantage.com/*

- Ten Principles for Smart Growth on the Suburban Fringe
  *www.uli.org/AM/Template.cfm?Section=Smart_Growth2&template=/ECommerce/ProductDisplay.cfm&ProductID=1419*

*Open Space and Conservation Strategies*

- Chowan County, North Carolina, Subdivision Ordinance (Landscaping and Open Space)
  *www.chowancounty-nc.gov/vertical/Sites/%7B10E82D50-AAE0-43D7-A98A-42E82683885E%7D/uploads/%7BE79DE079-CB52-47F1-A94B-10FE07113779%7D.PDF*

- Montgomery, Alabama, adopted a SmartCode to maintain its natural infrastructure by respecting wetlands, woodlands, and other natural features,
  *www.montgomeryal.gov/depts/planning/controls/smartcode.aspx*

- The town of Edenton Subdivision Ordinance (Screening, Landscaping and Trees)
  *www.townofedenton.com/index.asp?Type=B_LIST&SEC={7F25AFED-F9E6-44CB-8D8C-3AE5C676E4AD}#{FD36F27B-6984-4907-A474-12199544E6B1}*

# APPENDIX F: SITE VISIT DETAILS

***List of Participants***

Consultant Team

Jim Charlier, Charlier Associates, Inc.
Tim Van Meter, Van Meter Williams Pollack

Local Coordinating Team

Jayne Robb, Pamlico County Planner & Economic Developer
Judy Hills, Eastern Carolina Council of Governments

EPA Staff

Carlton Eley, Project Manager, Development, Community, and Environment Division
Geoffrey Anderson, Director, Development, Community, and Environment Division

NOAA Sea Grant Staff

Jack Thigpen, North Carolina State University

Workshop Participants

Participants in the workshops represented a wide range of viewpoints and interests, including property owners, businesses, elected officials, interested citizens, educational institutions, and others. The participants listed have been consolidated from sign-in sheets that were circulated during the public meetings and are included for reference purposes only. This list may not represent the full number of attendees. Individuals may not have seen the sign-in sheet at the meetings, or they may have chosen not to sign in.

Jenna Mercer
Quiana Manuel
Mogan Roberts
Kari Jane Hardison
CaPresha Mattocks
Amber Holland
Jerry H. Prescott
Virginia Travers
Paige Ackiss
George Brinson
Marianne Robinson
Edward Riggs, Jr.
Jeff Aydelette
Jay Bassington
Barbara Venturi
Alfred Fisher
Sarah Harris
Bill Ellers
Shannon Wing
Megan Roe
Rebekah Boroughs
Albert Hainsworth
Whitney Taylor
June Hardison
Jamie Gibbs
Myra Blue
Robby Sadler
Dee Sage
Fred O. Brown
Billy Flockhart
Mary Paul
Ken King
George Peacock
Michael Harris
Pat Paul
Gloria Putnam
Jasmine Foskey
Derek Murray
Katie Paul
Carla Jai Ollison
Lee Armstrong
Ruth Rice
Don Turner
Joseph Himbry, Jr.
Marion Altman
Booker T. Jones
Christine Mele
Ward Sylvester
Doug Brinson
Yvonne Selbig
Julia Lee
Clifton Stowe
Hoyt Paul
Warren Johnson

| | | |
|---|---|---|
| George Wisneskey | Joy Barrington | Pat Prescott |
| Charlie Hall | Brad Hufford | Lee Padrick |
| Kevin Mills | Bill Porter | Ann Holton |
| Sue Whitford | Tim Buck | Ray Credle |

Schedule

| **EPA Smart Growth Facilitated Meetings** | | | | |
|---|---|---|---|---|
| **December 4-7, 2006** | | | | |
| | **Monday, December 4** | **Tuesday, December 5** | **Wednesday, December 6** | **Thursday, December 7** |
| | | | | |
| **8am -9am** | | Team Meeting | Team Meeting | Team Meeting |
| **9am – 10am** | | Site Visit of Hwy 55 Corridor | Stakeholder Interviews | |
| **10am – 11am** | | | | Community Meeting |
| **11am – 12pm** | | | | |
| **12pm – 1pm** | | Lunch | Lunch | EPA/SG Team Departs |
| **1pm – 2pm** | | Meeting with Municipal and Community Leaders | Public Workshop | |
| **2pm – 3pm** | | | Stakeholder Interviews & Public Drop-in | |
| **3pm – 4pm** | | | | |
| **4pm – 5pm** | | Prep for Community Meeting | | |
| **5pm – 6pm** | | | Dinner | |
| **6pm – 7pm** | Pamlico County Commissioners Meeting | First Community Workshop | Design Workshop | |
| **7pm – 8pm** | | | | |
| **8pm – 9pm** | | Team Debrief | | |
| **9pm – 10pm** | | | Team Debrief | |