



Healthy People, Healthy Places

Community Well-Being on Virginia's Eastern Shore

August 2012



The Walkable and Livable Communities Institute
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Cover Photo: Traditional village design allows for naturally occurring scenes, like this one in Cape Charles. Residents can shop locally, chat with one another, and spend time enjoying their community together. This report focuses on community health on Virginia's Eastern Shore by addressing how the built environment either encourages or discourages healthy behaviors.

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Eastern Shore Healthy Communities, a partnership devoted to improving the health of Virginia's Eastern Shore, would like to thank members of its Livable Communities Work Group for organizing the Walkability Workshops:

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Why Walkability Matters

The built environment has a significant impact on health and well-being by either encouraging or discouraging physical activity. In 2008, 107 million Americans, almost half of all adults 18 years of age or older, had at least 1 of 6 reported chronic illnesses: cardiovascular disease, arthritis, diabetes, asthma, cancer or chronic obstructive pulmonary disease (COPD)¹. Today, two out of three American adults twenty years of age or older is overweight or obese. Childhood obesity has more than tripled in the past 30 years. Vehicle-miles traveled has a stronger correlation with obesity than any other lifestyle factor, yet we continue to build communities based on auto-dependency².

In the United States, bicycling and walking account for 12 percent of all trips, yet receive just two percent of all federal transportation funding. But the situation in Virginia is worse. Between 2005 and 2008, the percentage of total federal funds spent on pedestrian and bicycle projects in Virginia was just 0.3 percent, though the national average during this same period was 1.5 percent. In fact, Virginia spent just \$0.22 per capita on bicycle and pedestrian projects using the Safe, Accountable, Flexible, Efficient Transportation Equity Act funds (SAFETEA-LU) though the national average during this same time period was \$1.46³. This under-investment in active transportation is reflected in consistent levels of pedestrian fatalities: about 80 pedestrians are killed each year in Virginia or 6 people per month and 8.9 percent of all traffic deaths in Virginia are pedestrians⁴.

The built environment also reflects our social inequities. Today, seniors have a higher pedestrian injury risk than the rest of the population. Older populations are over-represented at intersection fatalities by a factor of more than 2-to-1⁵. 21 percent of seniors today do not drive and half of all non-drivers age 65 and over – 4 million Americans – stay at home on a given day because they lack transportation⁶. Seniors in the United States

We envision a healthier Eastern Shore emerging from livable communities where children and adults have healthy eating choices at home, school, and work; can safely walk or bicycle; can play or exercise outdoors in neighborhood parks, trails, and open spaces; and can enjoy a tobacco-free community.
- Eastern Shore Healthy Communities Vision

BY THE NUMBERS

\$2.72 Total Federal
Transportation
Funds Available
BILLION in Virginia

0.3% Portion of Federal
Funds Spent on
Pedestrian Projects

\$0.22 Amount Spent per
Person on Pedestrian
Facilities and Safety

*Federal funds spent on pedestrian projects in Virginia
(FY2005-FY2008)*

are at great risk for social isolation once they lose their ability to drive. Aging in place is a significant concern for all of us. The Baby Boomers (those born between 1946 and 1964) started turning 65 in 2011. The number of those 65 years of age and older will grow to 71.5 million by 2030, representing nearly 20 percent of the total U.S. population⁷.

Americans in the lowest 20 percent income bracket, many of whom live in rural settings, spend about 42 percent of their total annual income on transportation⁸. 1 in 5 Eastern Shore residents lives in poverty⁹. Improved health and social equity are not the only reasons to modify the built environment so that it is more supportive of active transportation. 40 percent of Baby Boomers say they don't have enough savings for retirement¹⁰. As the senior population grows faster than any other age group, towns addressing walkability are better suited to meet needs. Seniors will work and transportation choices will become critically important. Additionally, those communities that don't prepare are placing seniors at risk for social isolation. Walkable, bikeable, and livable communities are healthier communities, not only in terms of individual and social health, but also in terms of environmental and economic health.

Livable communities are designed to accommodate an individual's changing ability over their lifetime. Regardless of age or ability, the built environment is supportive of people performing their daily activities. While we know that physical activity is good for us, 60 percent of Americans do not meet the daily recommendations set by the Centers for Disease Control and Prevention (CDC)¹¹. Yet, people who have sidewalks in their neighborhoods reported more minutes of recreational walking¹². Adults living in high walkability neighborhoods engage in forty-one more minutes of total physical activity per week than those in low walkability neighborhoods¹³.

The solution to much of what ails us resides in building walkable communities. Our goal must be communities that are accessible, efficient and that work for all. Transportation should offer choices and spur economic growth. Development must be sustainable and contribute to social cohesion and work-life balance. Our cities and towns must contribute to improved air, land and water quality. Anything less is incomplete.

Rising obesity rates are the result of a number of trends in the United States. Americans walk less and drive more, even for trips of less than one mile. Children engage in less physical activity in school and increased screen time after school.

There are many reasons to support active living and walkability. The following statistics speak to adult health in Virginia:

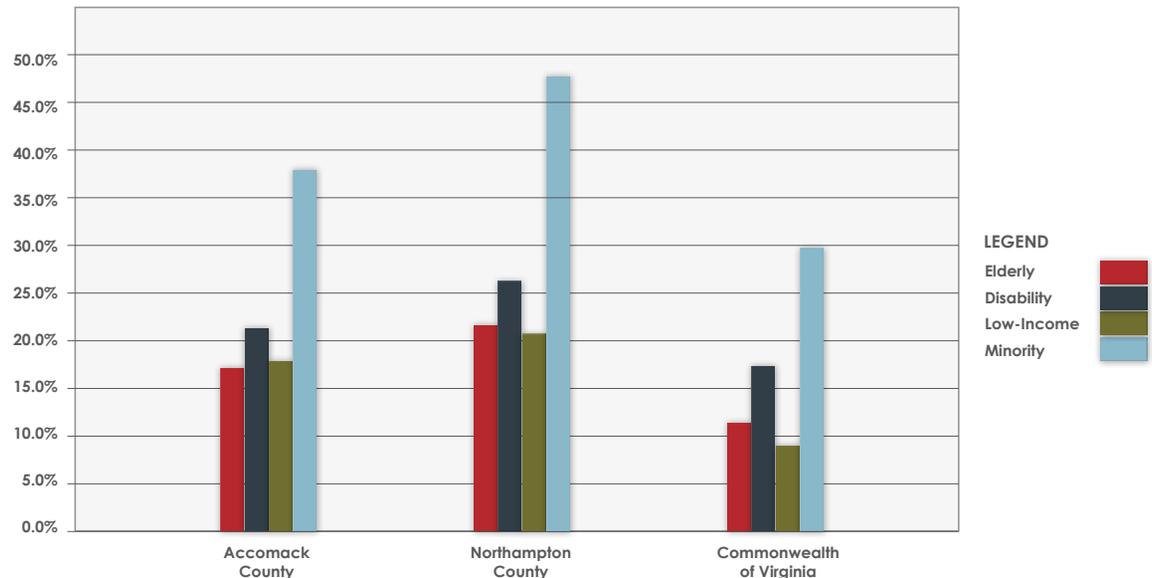
- 70 percent are overweight with 33 percent obese
- 76 percent get less than five servings of fruits and vegetables per day
- 12 percent have been diagnosed with type II diabetes
- 42 percent have arthritis
- 40 percent have high cholesterol
- 36 percent have high blood pressure
- 32 percent report no physical activity within the past 30 days
- 24 percent lack healthcare coverage
- 23 percent report some disability
- 22 percent smoke
- 20 percent live in poverty
- 13 percent could not see a doctor due to cost¹⁴

The following statistics speak to children’s health in Virginia:

- 92 percent report drinking soda, eating chips and eating candy more than once per week
- 88 percent do not meet daily targets for fruits and vegetables
- 64 percent of children are on a free or reduced meal program
- 34 percent do not meet the physical activity targets
- 26 percent report watching television for more than 3 hours per day
- 24 percent of children are overweight or obese
- 24 percent of homes have a single, female head of household
- 16 percent report playing video games for more than 3 hours per day
- Teen births are double the state-wide average¹⁹

- A study published in the *Journal of the American Planning Association* in 2006 found that for every five-percent increase in walkability, a community could expect more than a 30-percent increase in “physically active travel” and nearly a quarter-point reduction in individual body mass index, which is a common indicator for obesity and health. The increase in walkability was also correlated with more than a five-percent reduction in air pollutants that are associated with vehicle travel¹⁵.
- Analysis published in *Preventive Medicine* in 2010 indicates that installing sidewalks on all of a city’s streets would increase physical activity enough to offset weight gain in about 37 percent of the population, leading to healthcare savings likely to be enough to repay the cost of installing the sidewalks¹⁶.
- A study published by *CEOs for Cities* in 2009 shows that in 13 of 15 housing markets evaluated, a one point increase in a neighborhood’s WalkScore (www.walkscore.com) increased home values as much as \$3,000¹⁷.

Elderly, Disability, Low-Income, and Minority Populations on the Eastern Shore¹⁸



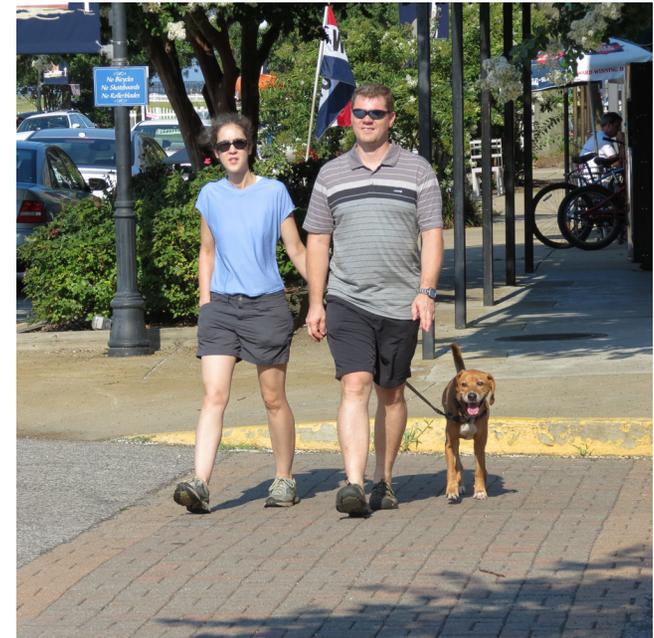
Communities that thrive plan for all residents and ensure accessibility across the individual’s life span and changing abilities.

When cities and towns provide equitable access to a complete transportation system, they send the message that people – not just cars — belong. No matter one’s age, income, ability, or mode of transport, the place works and the benefits are tremendous. Our street design can minimize those things that halt productivity (congestion, accidents) because users know where they belong, how to navigate and how to interact with others.

The benefits of active living through active transportation should be celebrated:

- Active transportation incorporates exercise into one’s daily schedule and eliminates the stress of driving on congested streets.
- Health care costs are reduced when people lead active lifestyles.
- Active transportation modes reduce traffic congestion, air pollution and noise pollution.
- Active transportation infrastructure is far less expensive than building new roads and parking.
- Shifting to active modes of transportation results in lower transportation costs for families.
- Increases in active transportation leads to reductions in crime and a greater sense of personal and family security with more “eyes on the street.”
- Active transportation provides opportunities for social connections and community building.
- Muscle power is the most energy efficient, personally rewarding and least costly mode of transportation.

This report provides existing condition analysis of walkability in Cape Charles, Onley-Onancock, Chincoteague and Exmore, in addition to providing recommendations for encouraging active living on the Eastern Shore of Virginia.



Studies show that all generations seek walkable communities and that walkability is tied to retention of home values.



The goal is for physical activity to be a normal routine part of every day like in this scene from Madison, Wisconsin.

The Active Living Workshops



We have applied advanced engineering to move more cars and to move them faster. The result is streets that accommodate cars and that deter people from active transportation. Land settlement practices – strip centers, cul-de-sacs, poorly sited schools, and single-use zoning – compound the problem, producing auto dependency. Our auto dependency is furthered by development patterns that have changed the form of communities from walkable, transit oriented, street grid systems to strip and single-family development accessed by regional automobile corridors. Level of Service focuses on vehicle mobility at the expense of all other modes. We generally do not consider acceptable Levels of Service for pedestrians, bicyclists and transit users. Walkability is the extent to which the built environment is friendly to the presence of people, and not just cars. Walkable streets may teem with people shopping, commuting by foot, or simply enjoying recreation and exercise. Factors improving walkability include:

- Nearby land uses, such as retail shops located near offices and housing, and schools located within neighborhoods.
- Street connectivity, ideally in a fine-grain grid without unnecessary cul-de-sacs.
- Road widths that contribute to slower vehicle speeds. Vehicle speeds affect walkability and livability: the wider a road or a vehicle travel lane is (or appears to the driver to be), the faster the driver tends to travel. The faster cars are traveling, the less safe and comfortable a person feels walking or bicycling next to them.
- A sense of security and “eyes on the street.” This feeling of comfort is created by orienting the homes and buildings toward the street, and providing transparency—occupied buildings and homes with windows and doors at the street level—so occupants can watch over the street.

On July 28 through August 1, 2012, the Walkable and Livable Communities Institute facilitated Active Living Workshops in Cape Charles, Onley-Onancock, Chincoteague and Exmore, observing the walkability, livability and aging-in-place elements of these

communities. The primary goal of the workshops was to evaluate existing conditions and to determine next steps for encouraging active living on the Eastern Shore. Sponsored by Eastern Shore Healthy Communities with funding by Virginia Department of Health, the walkability workshops aim to improve public health on the Eastern Shore by addressing obstacles to active transportation.

This technical report outlines the major obstacles to active living on the Eastern Shore:

- Streets have a high design speed which encourages speeding and discourages active transportation.
- Intersections are designed for the through-movement of vehicles and do not provide support for pedestrians or bicyclists.
- Streets are fat and because they are over-built, they are riskier and less enjoyable for pedestrians and bicyclists.
- Complete Streets are almost wholly missing from the Eastern Shore.
- U.S. Route 13 does not support livability.
- Destination branding is absent, making it challenging for visitors to know the many amenities of the Eastern Shore.

These key concerns are addressed within this technical report, along with site-specific recommendations for addressing challenges in Cape Charles, Onley-Onancock, Chincoteague and Exmore. The Key Findings Section addresses challenges found throughout the Eastern Shore. The Recommendations Section identifies built environment challenges, treatments to consider, and a photo vision of streetscape improvements to support active living. Lastly, the Toolbox includes tools on planning, design, greening streets, civic engagement and effecting change.



Leaders came out to support active living on the Eastern Shore of Virginia

Key Concepts



To systemize the analysis and coding of traditional patterns, a prototypical American rural-to-urban transect has been divided into Transect Zones, or T-zones, for application on zoning maps. Standards were written for the first transect-based codes, eventually to become the SmartCode, which was released in 2003 by Duany Plater-Zyberk & Company. <http://www.transect.org/transect.html>. While many rural communities think they do not have urban elements, the transect explains how the heart of small-town downtowns are urban in form. See the photos from Virginia's Eastern Shore that show the move from the natural zone to an urban center zone.

Key Concepts

Active Transportation: Also known as non-motorized transportation, this includes walking, bicycling, using a wheelchair or using “small-wheeled transport” such as skates, a skateboard or scooter. Active modes of transportation offer a combination of recreation, exercise and transportation. (See Victoria Transport Policy Institute, www.vtpi.org.)

Aging in Place: Also called, “Living in Place.” The ability to continue to live in one’s home safely, independently and comfortably, regardless of age, income or abilities. Living in a familiar environment and being able to participate in family and other community activities. (See National Aging in Place Council, www.ageinplace.org.)

Charrette: [pronounced, “shuh-RET”] A collaborative session to solve design problems that usually involves a group of designers working directly with stakeholders to identify issues and solutions. It is more successful than traditional public processes because it focuses on building consensus. (See Walkable and Livable Communities Institute, www.walklive.org.)

Complete Streets: Roads that are designed for everyone, including people of all ages and abilities. Complete Streets are accessible, comfortable for walking and biking, and include sidewalks, street trees and other

amenities that make them feel “complete.” (See National Complete Streets Coalition, www.completestreets.org.)

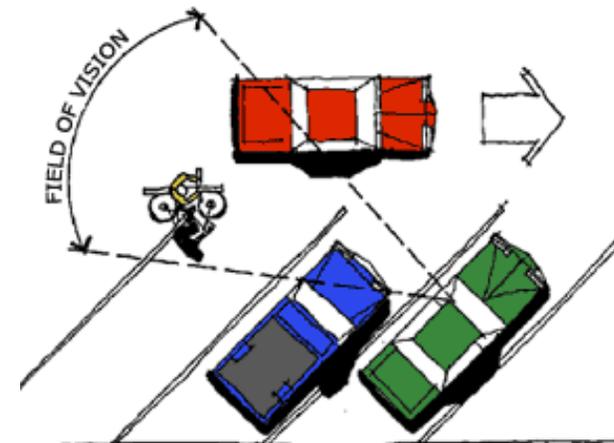
Head-Out Angled Parking: Also called “back-in” or “reverse” angled parking, this is arguably the safest form of on-street parking. It offers multiple benefits, including creating a sight line between the driver and other road users when pulling out. Additionally, head-out parking allows the driver to load their trunk from the curb, instead of adjacent to the travel lane. And for drivers with young children, seniors or others who need extra help, the open car doors direct passengers to the safety of the sidewalk behind the car, not into traffic. The process of parking in a head-out angled spot is simple – a driver signals their intention, slows, pulls past the spot and then backs into it, which is roughly equivalent to making only the first maneuver of parallel parking.

Livability: In the context of community, livability refers to the factors that add up to quality of life, including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and culture, entertainment and recreation possibilities. (See Partners for Livable Communities, www.livable.org.)

Median Crossing Island: A short island in the center of the road that calms traffic and



Above: Head-out angled parking is safer for all people, including those driving, biking and walking. Below: This diagram from the City of Northampton, MA illustrates one of the benefits of head-out angled parking: a driver’s ability to see oncoming traffic as they pull into the travel lane from their parking spot.



Key Concepts

provides pedestrian refuge. They can be six to 12 feet wide and 20 to 80 feet long. They should be landscaped with low, slow-growth ground cover, and tall trees without branches or leaves at ground height that help motorists see the islands well in advance but don't obstruct sight lines.

Mini Circles: Also called “mini traffic circles,” these are intersections that navigate vehicles around a small island about eight to 15 feet in diameter that is either lightly domed or raised. When raised, a mini traffic circle should be visible from hundreds of feet away, creating the feeling of a small park in the neighborhood. The circles should be designed to reduce speeds to 15 to 18 mph at each intersection. A proper number of them will reduce vehicle speeds to 22 to 25 mph along the corridor while helping traffic flow more smoothly due to the decreased number of complete stops.

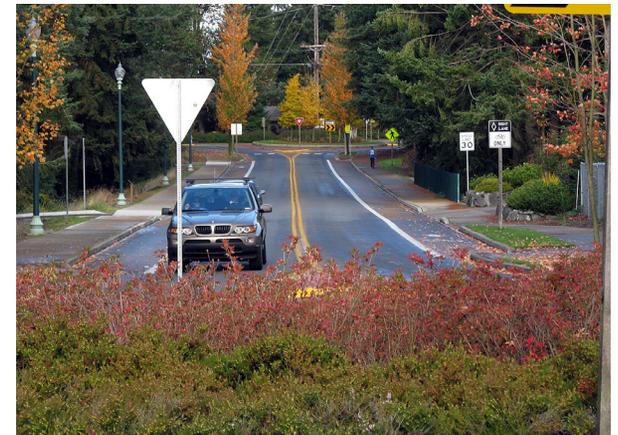
Rotaries: Also sometimes called traffic circles, rotaries are a form of an intersection that navigates cars around very large circulating islands. An entire traffic circle can be as big as a football field. And can include stop signs and signals. They are not the same as roundabouts or mini circles. Rotaries are cumbersome and complicated and can induce higher speeds and crash rates. Many rotaries in North America and Europe are being removed and replaced with the preferable roundabout.

Roundabouts: Also called “modern roundabouts,” they navigate cars around a circulating island, usually up to 60 feet in diameter. Roundabouts are ideal for collector and arterial roads, and at freeway on-off ramps. They eliminate the need for cars to make left turns, which are particularly dangerous for pedestrians and bicyclists. Properly designed, roundabouts hold vehicle speeds to 15 to 20 mph. They can reduce injury crashes by 76 percent and reduce fatal crashes by 90 percent. (See the Insurance Institute for Highway Safety's website at <http://www.iihs.org/research/topics/roundabouts.html>) Roundabouts also can increase capacity by 30 percent by keeping vehicles moving. When installing roundabouts in a community for the first time, care should be taken to make roadway users comfortable with the new traffic pattern and to educate them about how to navigate roundabouts properly and to yield as appropriate. For more information about roundabouts, see the Federal Highway Administration's educational video about roundabouts, at <http://bit.ly/fhwasafetyvideo>.

Road Diet: On an overly wide road that has too many vehicle travel lanes to be safe, lanes can be removed and converted to bike lanes, sidewalks, a buffer between the travel lanes and sidewalks, on-street parking, a landscaped median or some combination thereof. A common road diet transforms a four-lane road



Above, a mini circle calms neighborhood traffic in San Diego, CA. Below, a series of roundabouts calms traffic along an entire corridor in University Place, WA.



Key Concepts

without bike lanes into a three-lane road (one travel lane in each direction with a center turn lane or median) with bike lanes and street trees. (See Walkable and Livable Communities Institute, www.walklive.org.)

Safe Routes to School: A national program to improve safety and encourage more children, including children with disabilities, to walk, bike and roll to school. The program focuses on improvements through the five E's: engineering, education, enforcement, encouragement and evaluation. (See National Center for Safe Routes to School, www.saferoutesinfo.org.)

Sharrows: A “shared roadway marking”—usually paint—placed in the center of a travel lane to alert motorists and bicyclists alike to the shared use of the lane. They help position bicyclists away from the opening doors of cars parked on the street, encourage safety when vehicles pass bicyclists and reduce the incidence of wrong-way bicycling.



A sharrow in Seattle, WA.

Sidewalks: All sidewalks, trails, walkways and ramps should be on both sides of streets. Where sidewalk gaps exist or ramps are missing, they should be fixed on a priority basis, working out block-by-block from schools, medical facilities, town centers, main streets and other areas where people should be supported in walking and biking. Sidewalks in people-rich areas should be at least eight feet wide and separated from the curb by a “furniture zone” that can accommodate planter strips, tree wells, hydrants, benches, etc.

Smart Growth: Growing in a way that expands economic opportunity, protects public health and the environment (See U.S. EPA, <http://www.epa.gov/smartgrowth/>.)

Street Trees: Street trees not only provide shade and a nice environment, but also help protect students walking and bicycling. When placed within four to six feet of the street, trees create a vertical wall that helps lower vehicle speeds and absorb vehicle emissions. They also provide a physical buffer between cars and children. On streets with a narrow space between the sidewalk and curb (also known as the “furniture zone”), trees can be planted in individual tree wells placed between parking stalls, which further reduces travel speeds. Depending on the species, they should be spaced 15 to 25 feet apart.

Traffic Calming: Using traffic engineering and other tools designed to control traffic speeds and encourage driving behavior appropriate to the environment. Examples include street trees, bulb outs, medians, curb extensions, signage, road diets and roundabouts. Traffic calming should encourage mobility for all modes.

Walking Audit: Also called a “walking workshop,” this is a review of walking conditions along specified streets conducted with a diverse group of community members. Participants experience firsthand the conditions that either support or create barriers to walking and biking. (See more about walking audits: Walkable and Livable Communities Institute, www.walklive.org.)



Street trees create a buffer between people and cars, and provide shade and beauty.

Eastern Shore

Key Findings

Key Findings:

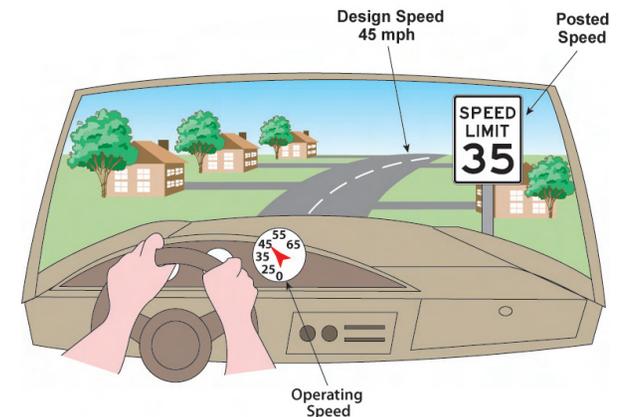
1. *Higher Design Speed than Posted Speed*
2. *Safer Intersection Treatments are Needed*
3. *Streets are Fat: Road Diets are Needed*
4. *Complete Streets are Missing*
5. *U.S. Route 13 Does Not Support Livability*
6. *Destination Branding is Absent*
7. *How to Implement the Eastern Shore Bicycle Plan is Unclear*
8. *Major Obstacles to Active Transportation Exist*

Higher Design Speed than Posted Speed

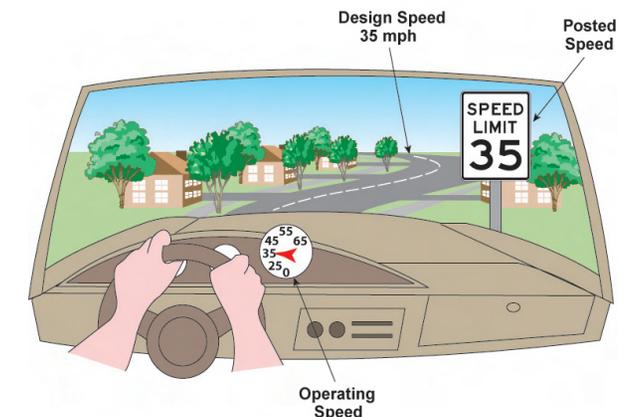
A person's decision to walk is influenced by many factors, including distance, perceived safety and comfort, convenience, and visual interest of the route. Pedestrians feel exposed and vulnerable when walking directly adjacent to a high-speed travel lane. Vehicle noise, exhaust and the sensation of passing vehicles reduce pedestrian comfort. Factors that improve pedestrian comfort include a separation from moving traffic and a reduction in speed. In walkable environments, a buffer zone that improves pedestrian comfort can be achieved through furnishings, landscaping, bike lanes and on-street parking.

Also known as the “desired operating speed” of a street, “target speed” is the speed desired on the roadway to ensure that all modes (vehicular traffic, transit, freight/delivery, pedestrians and bicyclists) can operate efficiently, effectively, safely and with enjoyment. Designing to a target speed means including only those design elements that best reflect the function of the roadway and its land uses. A general practice in the transportation profession has been to set design speeds higher than the target speed. A general practice in the transportation profession has been to set design speeds higher than the target speed limit. It is now recognized that such actions tend to induce greater speeds, which can cause a significant rise in crashes, especially to the most vulnerable roadway users. Design speeds should match the desired target speed. A lower target speed is a key characteristic of thoroughfares in walkable, mixed use, traditional areas. The Eastern Shore's major arterials have the poorest walking condition, due to higher traffic volumes, high traffic speeds, wider streets, and complex intersections.

Selection of an appropriate target speed is based on a number of factors and reasonable driver expectations. Factors include transition from higher- to lower-speed roadways, terrain, intersection spacing, access to adjacent land, type of roadway median, presence of curb parking and level of pedestrian activity. AASHTO's *A Guide for Achieving Flexibility in Highway Design* provides information on selection of speed.



Conventional Design



Using Desired Operating Speed

The images above show the difference between designing for the desired operating speed¹.



Because the Eastern Shore lacks many of the design elements that encourage 25 - 35 mph speeds even close to downtowns, drivers speed and the road is uncomfortable for bicyclists and pedestrians.

However, establishing a target speed that is artificially low relative to the design of the roadway may result in operating speeds that are higher than desirable and difficult to enforce. The design of our roadways must be consistent with the target speed desired. Design features that have been found to affect operating speeds:

- **Horizontal and Vertical Curvature** — A tight curve radius has a greater impact on operating speed than any cross-section or roadside element.
- **Sight Distance** — As sight distance decreases, so do operating speeds.
- **Street Trees** — Street trees in planting strips have a traffic calming benefit.
- **Lane Widths** — Narrower lane widths are associated with lower speeds.
- **Total Roadway Widths** — Narrower roadway widths are associated with lower operating speeds.
- **Access Density** — Higher density of access points is associated with lower operating speeds.
- **Signal Density** — Higher signal density is associated with lower operating speeds.
- **Median** — Roadways without medians have lower speeds than roadways with medians.
- **On-Street Parking** — On-street parking leads to lower speeds, due to side friction between moving and passing vehicles.
- **Curbs** — Speeds appear to be lower on streets with curbs than streets without curbs.
- **Pedestrian Activity** — Speeds are lower on roadways with higher pedestrian activity.
- **Roadside Development** — Speeds are lower in residential areas than commercial areas. Building setbacks also influence speed².

Safer Intersection Treatments are Needed

The Virginia Department of Transportation (VDOT) website provides excellent resources on the benefits of roundabouts. VDOT explains that they employ roundabouts to increase safety, reduce delays at intersections and to reduce crashes, traffic delays, fuel consumption, air pollution, construction and maintenance costs. VDOT shares how roundabouts enhance the beauty of the intersection and effectively control speeds. VDOT's website is a resource and provides excellent links to current information, including statistics and data in support of roundabouts. VDOT provides the following text on the benefits of roundabouts:

Studies show that roundabouts provide a:

- 90% reduction in fatal crashes
- 75% reduction in injury crashes
- 30-40% reduction in pedestrian crashes
- 10% reduction in bicycle crashes

Slower vehicle speeds (under 25 mph) mean:

- Drivers have more time to judge and react to other vehicles and pedestrians
- Easier to use for older and novice drivers
- Reduction in the severity of accidents
- Pedestrians are safer
- Provides traffic calming

Increased Capacity - Reduced Delay:

- 30-50% increase in traffic capacity
- Traffic always on the move-less delay

Environmental:

- Reduction in pollution and fuel use
- Less noise due to fewer stops and starts

Low Maintenance:

- No signal equipment to install and repair - Averages savings of \$5,000 per intersection per year

Aesthetics:

- Improves visual quality and character through landscaping¹

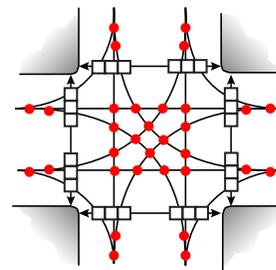


The double lane roundabout in Davidson, NC is a good model for Onley and Onancock to study.



Roundabouts make crossings easier because the pedestrian crosses one leg at a time. The lower vehicular increases yielding behaviors by drivers. To assist visually impaired pedestrians, pavement markings can be positioned to provide an auditory clue that cars are entering and existing the intersection.

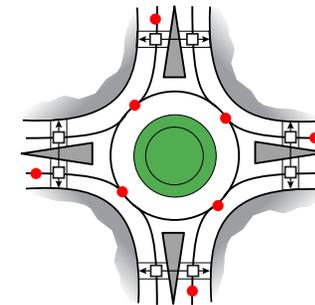
A double lane roundabout at the intersection of U.S. Route 13 and Route 179 would provide a beautiful gateway between Onley and Onancock. With the development of the regional hospital and library, and the central location of the Four Corners Plaza Shopping Center, this intersection must be addressed. Presently, it is dangerous. It lacks pedestrian signals, crosswalks and signage. The size of the intersection makes crossings challenging, plus a pedestrian would shut down the cycle for extended periods of time causing significant delay. Demand for golf carts between Onley and Onancock will increase and the danger of a side impact collision at high speed is a real threat. The communities of Onley and Onancock can improve livability, prime the area for development that honors the street, improve safety and minimize sprawl by addressing this intersection with a roundabout. Linking these communities with a complete street should be a first step for the Eastern Shore. By building towards one another, Onley and Onancock demonstrate care between neighbors and direct growth to an area appropriate for both.



Conflicts at a conventional intersection with single lanes in each direction

- 32 vehicle-to-vehicle conflicts
- 24 vehicle-to-person conflicts

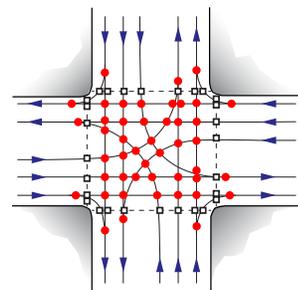
The Walkable and Livable Communities Institute and Alternate Street Design



Conflicts at a single-lane, modern roundabout

- 8 vehicle-to-vehicle conflicts
- 8 vehicle-to-person conflicts

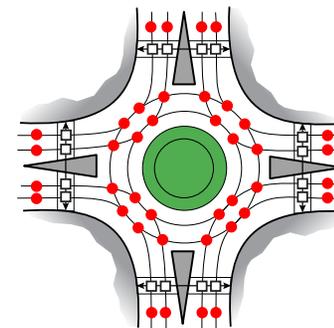
The Walkable and Livable Communities Institute and Alternate Street Design



Conflicts at a conventional intersection with double-lanes and left-turn lane in each direction

- 46 vehicle-to-vehicle conflicts
- 28 vehicle-to-person conflicts

The Walkable and Livable Communities Institute and Alternate Street Design

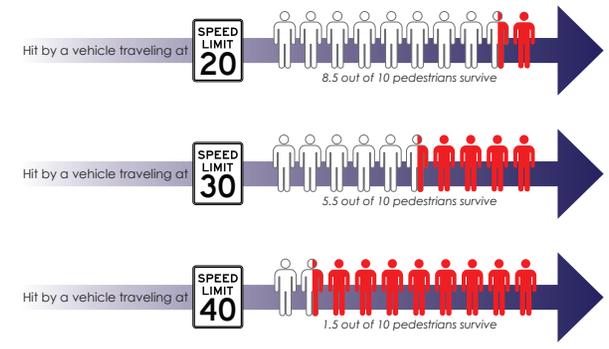
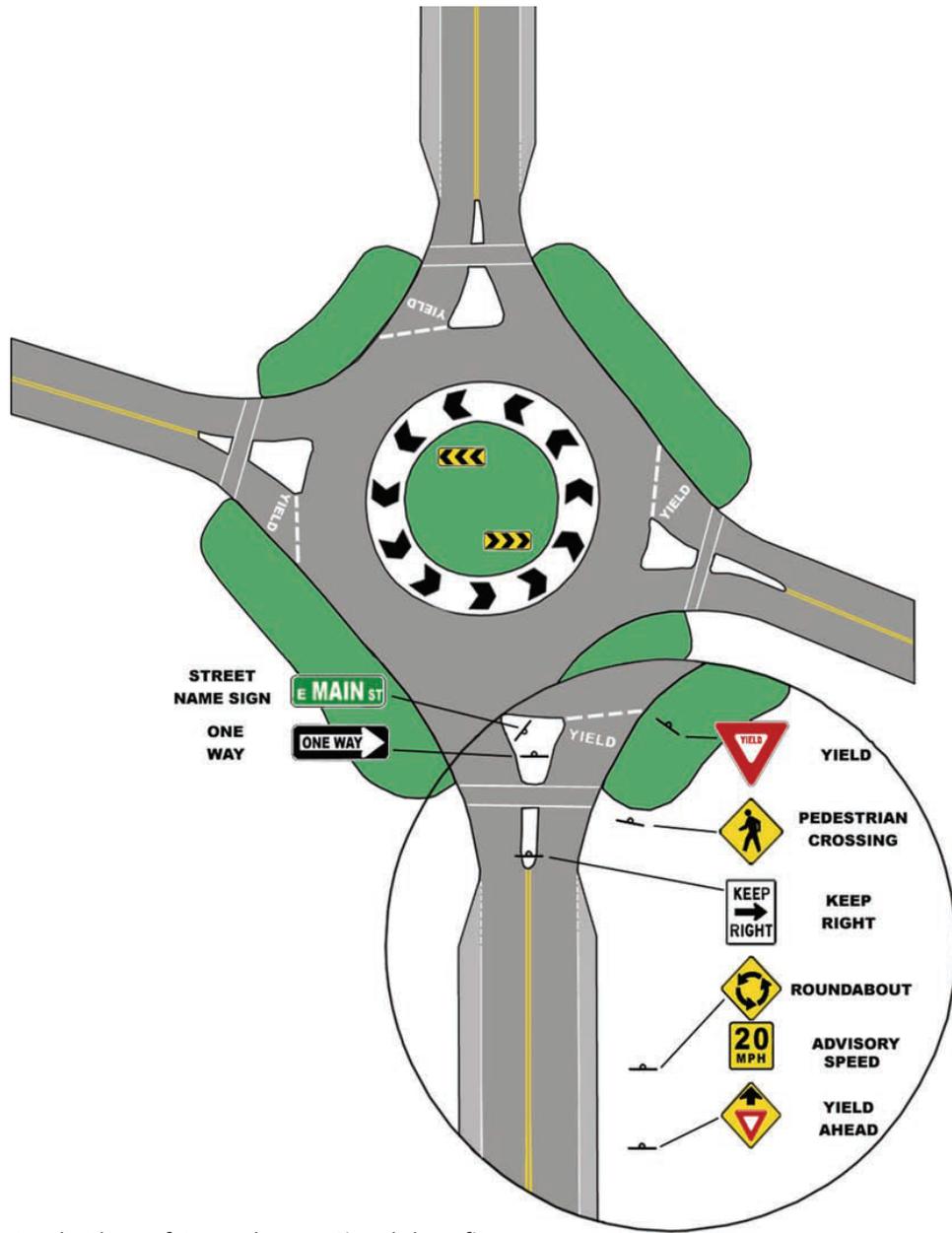


Conflicts at a double-lane, modern roundabout

- 24 vehicle-to-vehicle conflicts
- 16 vehicle-to-person conflicts

The Walkable and Livable Communities Institute and Alternate Street Design

The reduction of conflict points for a two lane roundabout is also remarkable. Vehicle conflicts are reduced from 46 to 24 potential points. For pedestrians, the reductions are even better: a reduction in conflict points from 48 to 16².



The graphic above shows a pedestrians likely survival rate if hit by a vehicle traveling 20, 30, 40 miles per hour⁴.

VDOT understands the safety and operational benefits of roundabouts and has created useful graphics to communicate these benefits³.

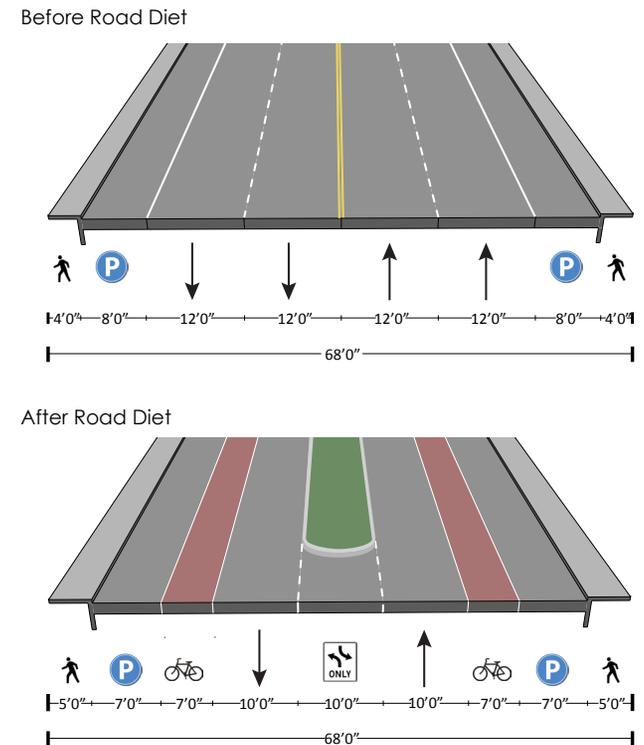
Streets are *Fat*: Road Diets are Needed

A road diet involves converting an undivided four-lane road into three vehicle lanes—one in each direction and a center turn lane. The remaining space is used for bike lanes, transit-stop bays, sidewalks or on-street parking. The two way center turn lane can include a median or pedestrian refuge island in certain locations. A road diet can improve the performance and safety of the corridor and encourage active transportation. Benefits include:

- Decreasing vehicle travel lanes for pedestrians to cross, therefore reducing the multiple-threat collision.
- Improving safety for bicyclists when bike lanes are added, also creating a buffer space between pedestrians and vehicles.
- Providing the opportunity for on-street parking, which buffers pedestrians and vehicles.
- Reducing rear-end and side-swipe collisions.
- Improving speed limit compliance and decreasing collision severity when collisions do occur¹.

When excess lanes are removed and lane widths are narrowed to 10 – 12 feet, the existing right of way can be allocated to support more modes. Because drivers base their travel speed on what feels comfortable given the street design, lane width reductions and the removal of excess travel lanes has an effect both on speeds and collision rates, since collisions tend to augment with speeds. In general, the wider the road in front of us, the faster we tend to drive. The faster a car is going, the more severe the injuries in the event of a collision.

Reconfiguring a roadway for lane reductions depends on the current configuration, user needs, desired operational and safety outcomes. The majority of four-lane roadways were built or widened to accommodate peak vehicle traffic volumes, but for the remaining 22



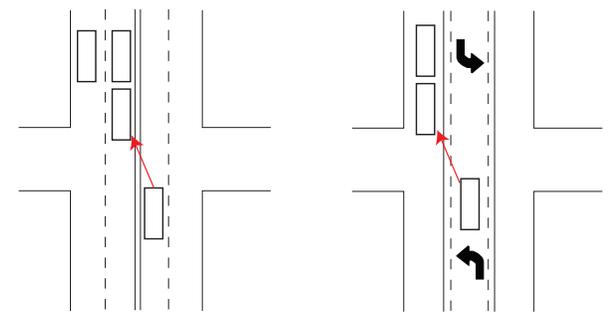
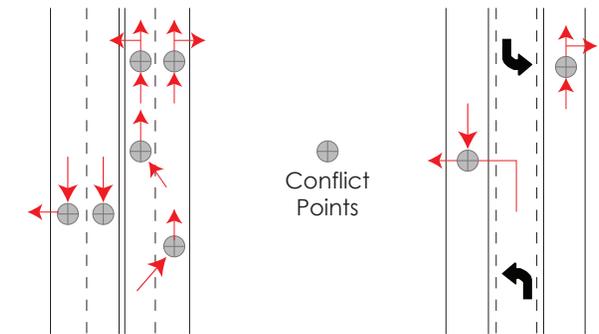
A road diet re-allocates the existing right-of-way to better support all modes of transportation: pedestrians, bicyclists, motorists, transit and freight/delivery. After a road diet, one vehicle travel lane in each direction allows a prudent driver to set the prevailing speed for all cars following them. On-street parking and comfortably wide bike lanes create buffers of two kinds - between motorists and the edge of the road, and between pedestrians and moving traffic. The center lane can be used for left turns, pedestrian refuge crossing islands or for delivery bays.

hours each day, they are underutilized. On these four-lane roads with excess capacity, motorists notice that there are empty lanes in their direction. Speeds are often higher than the posted speed limit and dangerous conditions are created when cars stop in travel lanes waiting to turn left or right and a last-minute lane change by another motorist hoping to preserve momentum, creates a serious rear-end collision. Four lane undivided highways also have blind spots created by multiple lanes of traffic.

Additionally, 4-lane undivided highways are particularly dangerous to pedestrians because of the potential for multiple-threat crashes, in which one vehicle stops and screens the pedestrian, while another motorist continues on in the other through lane. The pedestrian and motorist cannot see each other, but because the motorist in one lane has stopped to allow the crossing, it does not necessarily mean that the motorist in the next lane can see the pedestrian or will respond in the same way.

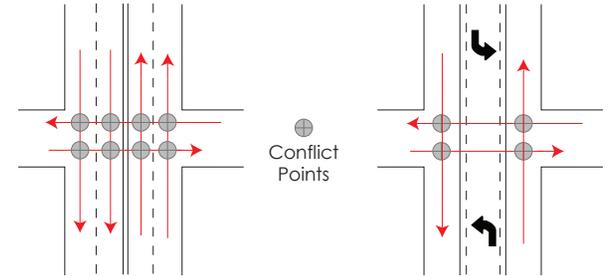
Road diets have been successfully implemented on streets carrying a wide variety of average daily traffic (ADT) volumes. Ranges from 8,000 to 15,000 ADT are generally considered to be good candidates for road diets. If a roadway does not provide sufficient infrastructure for alternative forms of transportation, a road diet may create the extra space needed to provide or improve infrastructure for cyclists, pedestrians, or transit riders. Roadways in areas with surrounding land uses that attract pedestrians, cyclists, visitors, and residents are also good road diet candidates. These can include historic streets, scenic drives, main streets, schools, an entertainment district.

Because a complete street can be provided within the existing right of way after removing or narrowing vehicle travel lanes, road diets are less expensive than widening roads, have fewer negative impacts on adjacent properties, and interrupt traffic for less time during the conversion than a road widening project would. The Recommendations Section of this technical report provides examples of Road Diet opportunities for communities on Virginia’s Eastern Shore².



Four Lane Undivided
(Outside Lane Traffic Hidden)

Three Lane
(No Outside Traffic to Hide)



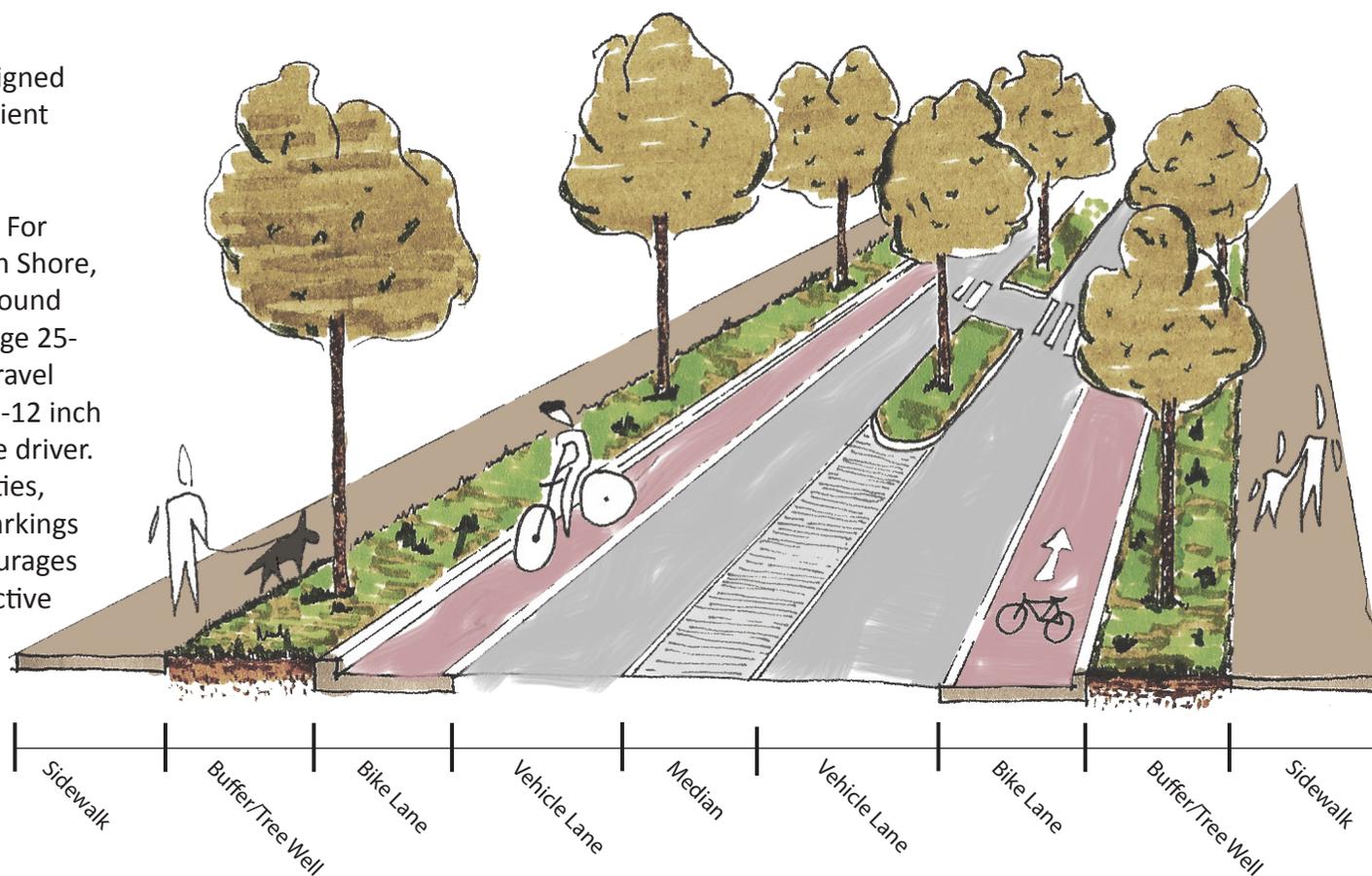
Four Lane Undivided

Three Lane

A three-lane cross section produces fewer conflict points between vehicles and crossing pedestrians. In addition, although the total roadway width does not change, the complexity of the pedestrian crossing maneuver is reduced.

Complete Streets are Missing

A Complete Street is a street designed for safe, comfortable and convenient travel for all users, whether they choose to travel by car, bicycle, public transportation, or on foot. For communities on Virginia’s Eastern Shore, a low-cost improvement can be found in “moving the paint” to encourage 25-35mph design speeds. Ten foot travel lanes, six foot bicycle lanes and 8-12 inch striping provide visual cues to the driver. In many Eastern Shore communities, overly wide streets and faded markings create a “runway” feel that encourages higher speeds and discourages active transportation because it is not clear where pedestrians and bicyclists belong.



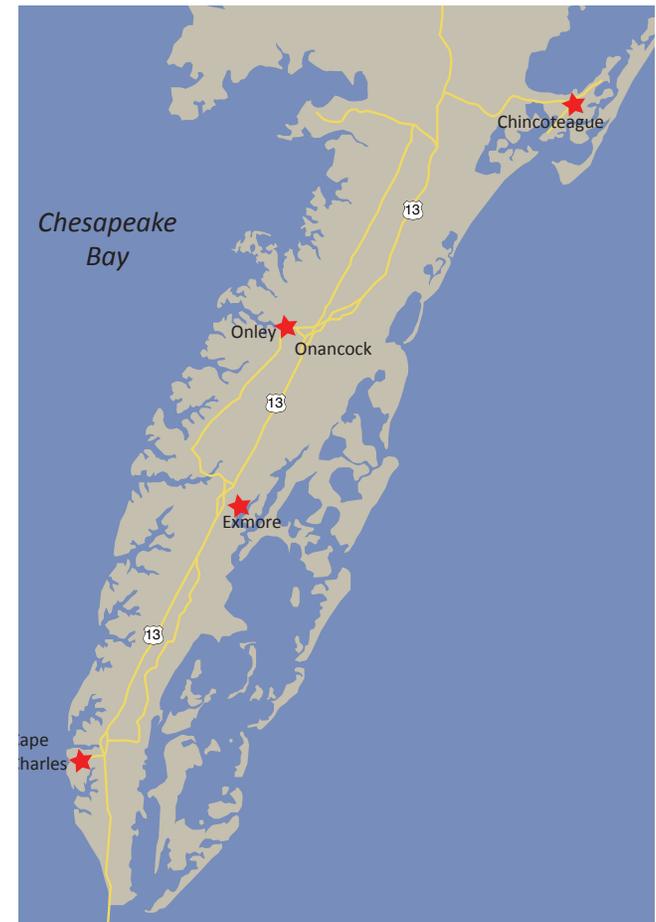
<p>Trees: Tall trees of a species appropriate for the area are spaced 15 to 25 feet apart. The vertical wall helps calm traffic and encourages lower vehicle speeds.</p>	<p>Buffer: If the buffer includes trees, they should be set back from the curb at least four feet and the total buffer should be at least six feet.</p>	<p>Bike lane: To function well, bike lanes should be at least six feet wide.</p>	<p>Wide stripes: Mark bike lanes with thermoplastic stripes eight to twelve inches wide.</p>	<p>Median widths: Medians typically are six to eight feet wide, but can vary to allow for landscaping, maintenance and adequate “refuge” for pedestrians crossing.</p>	<p>Vehicle lanes: Lane width analysis indicates that narrower lanes are associated with lower crash frequencies. Ten foot travel lanes reinforce a 25-35 mph design speed.</p>
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U.S. Route 13 Does Not Support Livability

This Existing Condition analysis points out how present and planned improvements for the U.S. Route 13 are not in line with Eastern Shore's desire to be economically vibrant and sensitive to natural and cultural resources. Within the Recommendations Section of this report, context-sensitive recommendations for addressing U.S. Route 13 have been provided (ppg. 39-91). U.S. Route 13's design and planned improvements do not support active transportation or livability on the Eastern Shore. In too many areas along the U.S. Route 13 corridor, pedestrian facilities do not exist. The intersection of Route 13 and Route 179 is a good example of the problem: it lacks crossing signals, crosswalks, sidewalks, bike lanes and signage to encourage active transportation or to direct visitors to the hearts of Onley and Onancock. In fact, because this intersection is overbuilt, pedestrian presence here would shut down the cycle for too long, causing major delays to motor vehicles. There are a number of design choices appropriate for regional corridors that also support the health, well-being and economic vitality of the communities it serves.

The Transportation and Mobility Planning Division (TMPD) of the Virginia Department of Transportation (VDOT) has worked with Planning Districts across the Commonwealth and has created this list of common rural long range planning goals:

- Enhance the connectivity of the existing transportation network within and between regions across all modes for both people and freight.
- Provide a safe and secure transportation system.
- Support and improve the economic vitality of the individual regions by providing access to economic opportunities, such as industrial access or recreational travel and tourism, as well as enhancing intermodal connectivity.
- Ensure continued quality of life during project development and implementation by considering natural, historic, and community environments, including special populations.
- Preserve the existing transportation network and promote efficient system management in order to promote access and mobility for both people and freight.



US Route 13 is the primary north-south corridor in the region; east-west primary corridors include VA 175, VA 180, VA 182 and VA 184



Pedestrians are present along the U.S. Route 13 corridor, but pedestrian amenities and facilities are not.

- Encourage land use and transportation coordination, including but not limited to, development of procedures or mechanisms to incorporate all modes, while engaging the private sector¹.

These are worthwhile goals and all planning, design and construction that occurs on U.S. Route 13 should have these long range goals in mind. Additionally, community members should specifically understand how all planned improvements along the U.S. Route 13 corridor will meet the intent of these goals. See the list of planned improvements in the Tool Box of this report (ppg. 92-134). The *2035 Regional Long-Range Transportation Plan* for the Eastern Shore was adopted by the Regional Commission on October 17, 2011 and will serve as a long term strategy for the transportation network of the region and as a component of the *2035 Surface Transportation Plan*. Given the prioritized list of improvements listed in the 2035 Plan, the Accomack-Northampton Planning District Commission will want to flag those items in the Eastern Shore Bicycle Master Plan to ensure that they are built concurrently with planned improvements on roadway segments.



The La Jolla Boulevard roundabouts manage over 26,000 vehicles per day, plus pedestrians and cyclists with ease.

Given the prioritized list of improvements listed in the 2035 Plan, the Accomack-Northampton Planning District Commission will want to flag those items in the Eastern Shore Bicycle Master Plan to ensure that they are built concurrently with planned improvements on roadway segments.

Choose the Proven Safety Countermeasures

In January 2012, the Federal Highway Administration (FHWA) issued a *Guidance Memorandum on Promoting the Implementation of Proven Safety Countermeasures*. This guidance takes into consideration the latest safety research to advance a group of countermeasures that have shown great effectiveness in improving safety and FHWA encourages practitioners to consider this set of countermeasures that are evidence-based, but not widely applied on a national basis. The following countermeasures and explanatory text come from FHWA's Office of Safety are appropriate for consideration on U.S. Route 13²:

Roundabouts: There are an estimated 300,000 signalized intersections in the United States. About one-third of all intersection fatalities occur at these locations, resulting in roughly 2,300 people killed each year. Furthermore, about 700 people are killed annually in red-light running collisions. Although traffic signals can work well for alternately assigning the right-of-way to different user movements across an intersection, roundabouts have demonstrated substantial safety and operational benefits compared to most other intersection forms and controls, with especially significant reductions in fatal and injury crashes. The Highway Safety Manual (HSM) indicates that:

- By converting from a two-way stop control mechanism to a roundabout, a location can experience an 82 percent reduction in severe (injury/fatal) crashes and a 44 percent reduction in overall crashes.
- By converting from a signalized intersection to a roundabout, a location can experience a 78 percent reduction in severe (injury/fatal) crashes and a 48 percent reduction in overall crashes³.

Access management: Access management refers to the design, implementation, and control of entry and exit points along a roadway. This includes intersections with other roads and driveways that serve adjacent properties. Effective access management strategies that improve safety requires considering the location of driveways in the context of current and future access and intersection operation needs for all modes, including pedestrians and bicyclists. Per the Highway Safety Manual, areas where effective access management has been implemented have experienced:

- A 5-23 percent reduction in all crashes along two-lane rural highways, and
- A 25-31 percent reduction in severe (injury/fatal) crashes along urban/suburban arterials⁴.

Medians and Pedestrian Crossing Islands: A median is an area between opposing lanes of traffic, excluding turn lanes. Medians can either be open (pavement markings only) or they can be channelized (raised medians or islands) to separate various road users. Pedestrian crossing islands (or refuge areas) are raised islands placed on a street at intersections or midblock locations to separate crossing pedestrians from motor vehicles. They improve the safety benefits to both pedestrians and vehicles in the following ways:

- They may reduce pedestrian crashes by 46 percent and motor vehicle crashes by up to 39 percent.



Access management can be beautiful



Refuge islands allow pedestrians to cross one travel lane at a time and can be angled to face pedestrians towards on-coming traffic



The HAWK allows a pedestrian to cross a roadway with steady traffic flow and higher speeds



Rumble strips alert drivers that they have left the travel lane. Too often, rumble strips are incorrectly placed outside the edge stripe, intruding on a shoulder where bicyclists might travel.

- They may decrease delays (by greater than 30 percent) for motorists⁵.

Pedestrian Hybrid Beacon (HAWK): The pedestrian hybrid beacon (also known as the high intensity activated crosswalk (or HAWK) is a pedestrian-activated warning device located on the roadside or on mast arms over midblock pedestrian crossings. The beacon head consists of two red lenses above a single yellow lens. The beacon head is “dark” until the pedestrian desires to cross the street. At this point, the pedestrian will push an easy-to-reach button that activates the beacon. After displaying brief flashing and steady yellow intervals, the device displays a steady red indication to drivers and a “WALK” indication to pedestrians, allowing them to cross a major roadway while traffic is stopped. After the pedestrian phase ends, the “WALK” indication changes to a flashing orange hand to notify pedestrians that their clearance time is ending. The hybrid beacon displays alternating flashing red lights to drivers while pedestrians finish their crossings before once again going dark at the conclusion of the cycle. Installation of the pedestrian hybrid beacon has been shown to provide the following safety benefits:

- Up to a 69 percent reduction in pedestrian crashes
- Up to a 29 percent reduction in total roadway crashes⁶.

Longitudinal Rumble Strips: Longitudinal rumble strips are milled or raised elements on the pavement intended to alert inattentive drivers through vibration and sound that their vehicles have left the travel lane. This countermeasure increases nighttime visibility of the pavement marking. Roadway departure crashes account for approximately 53% of fatal crashes each year on the Nation’s highways. In 2009, 8,780 single-vehicle roadway departure fatalities occurred on two-lane roads. Rumble strips are designed primarily to address the subset of driver error crashes caused by distracted, drowsy, or otherwise inattentive drivers who unintentionally drift from their lane. Continuous rumble strips can be applied on many miles of roads in a cost-effective manner and can provide the following benefits:

- Center line rumble strips on rural two-lane roads: 44% reduction of head on / fatal and injury crashes.
- Center line rumble strips on urban two-lane roads: 64% reduction of head-on / fatal and injury crashes.
- Shoulder rumble strips on rural two-lane roads: 36% reduction of run-off-road fatal and injury crashes⁷.

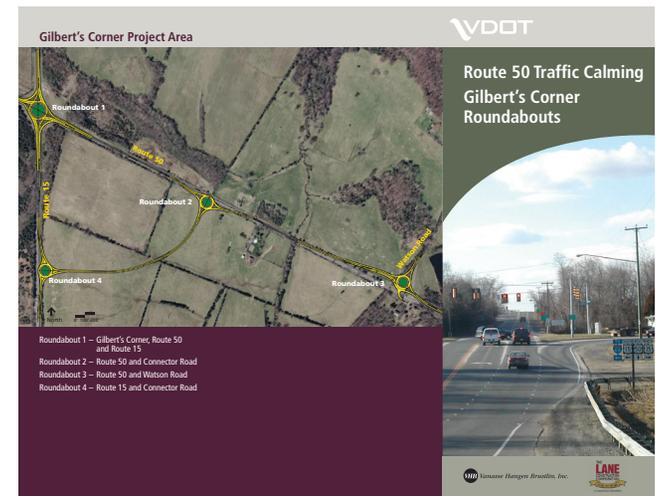
Learn from Other Communities

U.S. Route 50

Other communities successfully deal with the challenges of increased traffic and development. The Route 50 Traffic Calming Project in Fauquier and Loudon Counties is a good project for the Eastern Shore to study. Preserving the historic and rural nature of Route 50 was set as an important goal of the project. Through a partnership with the Route 50 Task Force and the Virginia Department of Transportation, three traffic calming projects have been constructed along a 20-mile from Paris to Lenah.

U.S. Route 62

The U.S. Route 62 project in the Village of Hamburg, New York, is a good model on public process and designing a major transportation corridor for livability. The New York Department of Transportation called for a \$23 million reconstruction of all of three principle commercial streets in Hamburg, as well as options for a bypass, and seven significantly re-engineered intersections. NYDOT wanted to address safety issues, pedestrian fatalities, operations, capacity and major infrastructure deficiencies. Route 62 is not only a major truck route, but it is the center of local business and community life for the Village of Hamburg. Many town officials, residents and business people felt the original plan offered was not sensitive to their community. Through a series of interactive workshops, the community crafted a vision which brought the town, city and state together to rebuild three principle streets through town, with a focus on multi-modal transportation. The streets have been completed and have won a number of top design awards, including the AASHTO Innovative Management Award (Small Project) and U.S.DOT Top Ten Nominee for Outstanding Project.



The VDOT Route 50 Traffic Calming project should be studied as model for the U.S. Route 13 corridor.



On U.S. Route 62 in Hamburg, NY, crossing a roundabout is easier because the pedestrian watches one travel direction at a time. The lower speeds increases yielding behaviors. In the image above, note how the pedestrian observes oncoming traffic, and how she crosses safely without interrupting traffic flow.

Design for the Interagency Partnership for Sustainable Communities' Livability Principles

In June 2009, U.S. DOT Secretary Ray LaHood, HUD Secretary Shaun Donovan, and EPA Administrator Lisa P. Jackson announced the new Interagency Partnership for Sustainable Communities. The partnership defined six livability principles that will serve as a basis of interagency coordination designed to help America's neighborhoods become safer, healthier, and more vibrant. They are:

- Provide more transportation choices. Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.
- Promote equitable, affordable housing. Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- Enhance economic competitiveness. Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services, and other basic needs by workers, as well as expanded business access to markets.
- Support existing communities. Target Federal funding toward existing communities—through strategies like transit oriented, mixed-use development, and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- Coordinate and leverage Federal policies and investment. Align Federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.
- Value communities and neighborhoods. Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban⁸.

Destination Branding is Absent

Many communities that are trying to build a stronger tourism base are developing “destination brands” that help convey to potential visitors what they can expect to experience while in town. A good destination brand is far more than just a visual representation or symbol for an area; rather, a successful brand articulates an area’s essence, or core offering, and communicates to people what kind of experience they should expect when they visit. It is very important that the brand is based on an area’s authentic offerings—the factors that truly make it a special place. For Virginia’s Eastern Shore, working together across the nineteen towns and two counties is especially important because a parochial approach to wayfinding does not work.

Destination branding isn’t an overnight or short-term effort. In fact, a successful destination brand results over time from consistency in messaging and visitors’ expectations being met time and time again. As such, buy-in from the stakeholders of the area is important because they will be ambassadors who help ensure the brand promise is kept.

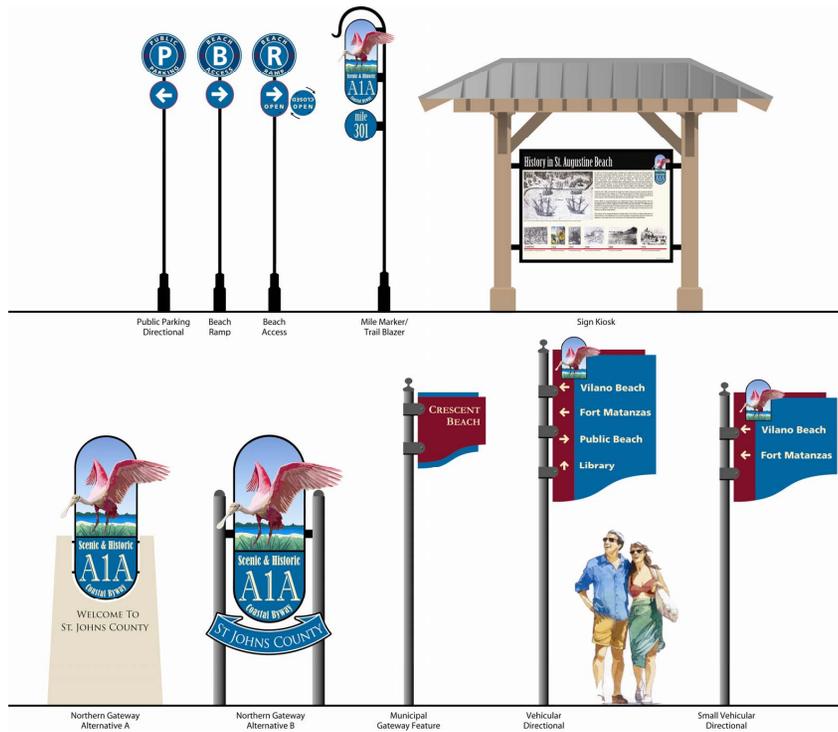
Virginia’s Eastern Shore boasts authentic assets from which a strong brand emerges, including eco-tourism, good food and restaurants, historic main streets, and more. Already, the area welcomes beach combers, marsh tideland bird watchers, “foodies” who appreciate good crab and seafood, shoppers looking for quaint towns, and campers. With the addition of a regional multi-use or bike trail connecting communities within the area, the Eastern Shore would be well positioned to build a strong presence in the eco-tourism industry.

A destination brand for the entire region should include a wayfinding and signage system that helps people travel with ease to their destinations even when they don’t know their way. Good wayfinding systems also make people feel welcome and comfortable, and reinforce the destination’s brand.

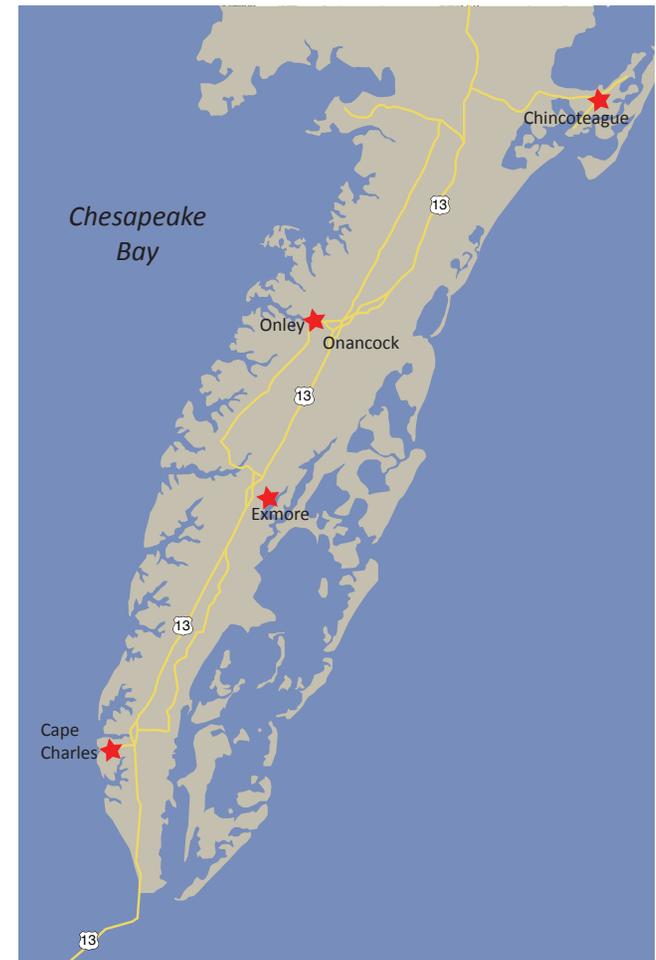
On the Eastern Shore, a wayfinding system should employ unifying elements while still allowing flexibility for each individual community’s character to be represented. Local stakeholders should be engaged in developing the brand and validating each community’s brand elements.



To build a stronger tourism base, many communities develop destination brands to convey what visitors can expect to experience. Those communities who are linked together based on regional attractions understand that their successes and failures are tied to one another. By working together across town and county lines, the 21 incorporated areas on Virginia’s Eastern Shore can boast authentic villages, historic main streets, great food and unsurpassed natural resources¹.



Local stakeholders should be engaged in developing the brand and validating each community's brand elements. Wayfinding systems extend to street design features, as well. For example, a gateway feature such as a roundabout helps announce to visitors that they are arriving at a special place².

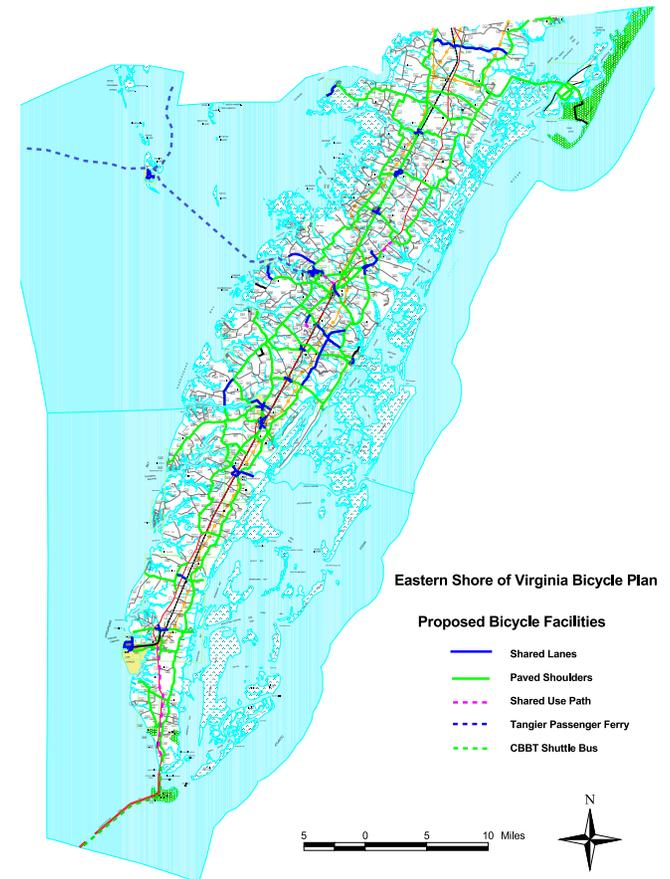


Because U.S. Route 13 is the spine of the Eastern Shore, a coordinated wayfinding and branding plan for the Eastern Shore is needed. The success of each community on Virginia's Eastern Shore is dependent on the success of all communities on Virginia's Eastern Shore. A wayfinding system should employ unifying elements while still allowing flexibility for each individual community's character to be represented.

How to Implement the Eastern Shore Bicycle Plan is Unclear

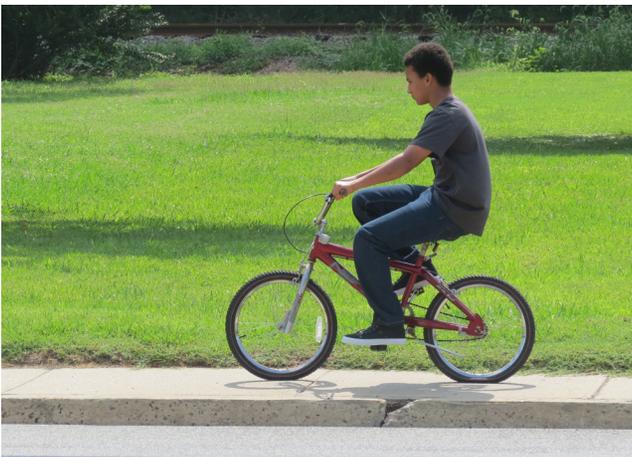
The 2011 Update to the Eastern Shore of Virginia Bicycle Plan¹ sets forth a vision for bicycling on the Eastern Shore and this is supported by specific goals and objectives. It also explains VDOT's requirement for local governments to have an adopted bicycle facilities plan in order to receive project funding. In order to move forward with implementing projects, the Plan identifies twelve priority projects that emerged during the public meetings and planning workshops. Those twelve priorities should be compared to the prioritized list of improvements in the 2035 Regional Long-Range Transportation Plan for Eastern Shore and the 2035 Surface Transportation Plan (ppg. 92-134). If the planned improvements which would allow these bicycle facilities to be built will not occur for years, Eastern Shore Healthy Communities may wish to work with the Accomack-Northampton Planning District Commission and VDOT to assist with meeting local match requirements for pedestrian and bicycle projects through grants and other fundraising activities. The other option would be to create a revised priority list based on upcoming projects and to determine how bicycle and pedestrian facilities will be included in the design and connected to other amenities regionally. The existing prioritized list from the Bicycle Plan public process is as follows:

1. Pave the shoulders on the Route 175 Chincoteague Causeway.
2. Develop a designated Seaside Bicycle Route with paved shoulders from Maryland Route 12 to the Chesapeake Bay Bridge Tunnel Parking Lot, utilizing Routes 679 (State Line Road, Fleming Road), 175 (Chincoteague Road), 798 (Atlantic Road, 666 Fox Grove Road), 661 (Johnson Road), a Shared Use Path along U.S. 13, Business U.S. 13, 605 (Drummondtown Road), 182 (Quinby Bridge Road) and 600 (Seaside Road).
3. Develop a Shared Use Path between Onancock, Onley and Accomac.
4. Develop a Shared Use Path from Cape Charles to Cheriton.
5. Develop a Shared Use Path from Cape Charles to the Eastern Shore of Virginia National Wildlife Refuge that is not on the old railroad right of way.





The demand for bicycle infrastructure exists on the Eastern Shore.



In too many instances, bicyclists ride on the sidewalk because the street feels unsafe. This is dangerous to both bicyclists and pedestrians. Drivers cannot anticipate bicyclists who are in the pedestrian realm and pedestrians are often forced off sidewalks to accommodate bicyclists.

6. Pave the shoulders on Route 695 (Saxis Road) from Route 679 to Saxis.
7. Develop a designated Bayside Bicycle Route with paved shoulders from Route 695 (Saxis Road) in Makemie Park south to Machipongo using Routes 693 (Neal Parker Road), 779 (Mears Station Road), 316 (Hopeton/Greenbush Roads), 126 (Fairgrounds Road), 179 (Market Street), 718 (Hill Street, Bobtown Road), 178 (Shield's Bridge Road), 602 (Lee Street/Cemetery Road), 183 (Occohannock Neck Road), 606 (Wardtown Road to Franktown), 618 (Bayside Road south from Franktown), and 627 (Young Street/Machipongo Drive/Box Tree Drive).
8. Develop a Share Use Path to connect Accomack County Industrial Park, Eastern Shore Community College, and the Eastern Shore Farmer's Market with Route 818 (Terminal Drive).
9. Improve bicycle access along and across U.S. Route 13.
10. Promote the Tangier Islands tour boats from Onancock, Reedville, and Crisfield as bicycle facilities.
11. Work with STAR Transit to establish a shuttle bus across the Chesapeake Bay Bridge Tunnel that can carry bicycles.
12. Meet with the Bay Coast Railroad to discuss the possibility of developing a rail/trail along the railroad access road.

Achieving the Vision

Within the bicycle plan, the following Vision is set: Eastern shore bicyclists envision a safe, designated bicycle route with, at a minimum, paved shoulders, from Maryland to Kiptopeke. The bicycle route will showcase the Eastern Shore's scenic beauty and rich history, and connect towns and communities with schools, businesses and recreation facilities. There will be designated bicycle routes on the Bayside and Seaside, paved shoulder on the Chincoteague Causeway, improved access along and across U.S. Route 13, and a separate bicycle trail from Cape Charles to the Eastern Shore National Wildlife Refuge.

If the Eastern Shore Railroad right-of-way ever becomes available, there will be a rail trail from Maryland to Cape Charles. Access across the Chesapeake Bay Bridge Tunnel, via

shuttle buses will be available. Bicycle maps and safety education will be provided, as well as bicycle safety signs and bicycle racks.

However, the plan notes that most of the roads on the Eastern Shore do not meet VDOT design standards for accommodating bicycles. The Bicycle Plan does a very nice job of explaining how its goals are met with objectives which are then implemented through proposed bicycle facilities and programs.

Reviewing the Bicycle Plan's twelve prioritized facilities with the 2035 Surface Transportation Plan for the Eastern Shore is a first step in documenting the pace towards this vision (see Toolbox of this report).

Why Bicycle Facilities Should Matter to the Eastern Shore

According to research conducted by Rails to Trails Conservancy, 85 million people used rail trails in 1994 alone. In 2004, the North Carolina Department of Transportation (NCDOT) Division of Bicycle and Pedestrian Transportation (DBPT) commissioned a study to examine the value of public investment in bicycle facilities. The northern Outer Banks region was selected for the study because of existing high levels of bicycle activity and the presence of an extensive system of special bicycle facilities. The study noted that over the past ten years, an estimated \$6.7 million of public funds was spent to construct off-road paths and add wide paved shoulders to roads in the region. The economic return on this investment is stunning: 680,000 tourists generate an estimated \$60 million annually. The bicycle facilities in the area were noted by survey participants as an important factor for many tourists in deciding to visit the region. 53 percent of visitors reported bicycling as a strong influence in decision to return for subsequent visit. 43 percent of visitors reported bicycling as an important factor in selecting this area for vacation².

American Trails Magazine studied the economic benefits of trails and pointed to significant findings nationwide: a 2006 Outdoor Industry Foundation study found that "Active Outdoor Recreation" contributes \$730 billion annually to the U.S. economy, supports 6.5 million jobs, and generates \$88 billion in annual state and national tax revenue. Active recreation is defined as bicycling, trail activities, paddling, snow sports, camping, fishing, hunting, and wildlife viewing. In 2011, 437 million visitors to lands managed by the Department of Interior generated \$44 billion in economic activity. The economic value of trails should not be overlooked especially because active tourists tend to distribute their spending



Because beautiful trail facilities exist, the focus should be on developing and connecting facilities regionally.

It should be noted that the goals within the Bicycle Plan can assist Virginia's Eastern Shore in improving health, well-being and economic vitality of the region.



Authentic small towns, historic main streets, excellent seafood, miles of beaches and tidelands are all found on the Eastern Shore.



One of the best things Eastern Shore Healthy Communities, the Accomack-Northampton Planning District Commission, VDOT and Rail Management can do for the Eastern Shore communities is to invest in bicycle facilities. This is an investment in healthy people and a healthy economy. It should be considered an act of love and a wise investment in the Eastern Shore's special places and people.

across many sectors, including small towns and off-the-beaten-path places. Trail tourism not only brings monies to local economies, but it also provides much needed recreational and transportation options to rural communities. The economic benefits of trails extends nationally³:

Great Allegheny Passage Trail – Pennsylvania

An estimated 800,000 trips are taken annually on the Great Allegheny Passage, a 141-mile system of biking and hiking trails from Cumberland, Maryland, to Homestead, Pennsylvania:

- Annual direct spending attributed to trail users was \$40.8 million in 2008, up from \$7.26 million in 2002.
- Total annual wages attributed to trail user spending: \$7.5 million.
- Since 2007, 93 new trail-related businesses opened in the Trail Towns while 19 businesses closed, for a net gain of 47 new businesses.
- 77% of businesses opened since 2007 remain in operation.
- Business owners attribute 25% of revenues to their proximity to the trail.

— Great Allegheny Passage Economic Impact Study (2007–2008)⁴

The West Orange, Little Econ, and Cady Way Trails in Orange County, Florida

The West Orange, Little Econ, and Cady Way Trails in Orange County supported 516 jobs and an estimated economic impact of \$42.6 million in 2010. For Winter Garden, alone, the West Orange trail generated \$5 million in revenue and 61 jobs.

— East Central Florida Regional Planning Council (2011)⁵

Major Obstacles to Active Transportation Exist

Higher design speed than posted speeds

Drivers will respond to the cues the street provides. On the Eastern Shore, the design speed of many streets is higher than the posted speed limit. Drivers have a hard time obeying posted speed limits when the design speed encourages different behaviors. Wide travel lanes, inconsistent and worn markings, and speeding through the area creates an environment in which motorists feel entitled to drive-through the community. Many communities along the Eastern Shore need gateways, signage and street design to give a visual clue to drivers that they have arrived.

Street treatments are inconsistent with community values

Current street designs encourage speeding especially through intersections. In many areas, pedestrian facilities do not exist. Street treatments should reflect our values. This means that we plan and design our communities so that we support residents across the entire life span and no matter which mode they choose. Because the U.S. Route 13 corridor is the spine of the Eastern Shore, we can no longer ignore bicyclists and pedestrians. The current design does not anticipate or encourage active transportation. Yet, the goals set forth by the community in the *2035 Surface Transportation Plan* are to improve the Eastern Shore's multi-modal transportation system by coordinating planning and supporting funding for highways, public transit, human services transportation, bicycle and pedestrians. A second goal is to support economic development and tourism by improving transportation-related tourism facilities.



Street design does not support active transportation in Onley-Onancock



Streets are over-built for cars and under-built for people in Cape Charles



Yielding behavior by drivers is poor in Onley-Onancock



Intersections do not support pedestrians or bicyclists in Onley-Onancock



Edges are poorly defined and not maintained in Chincoteague

Aggressive driver behaviors evident

Streets on the Eastern Shore should provide adequate facilities to allow for safe, comfortable pedestrian and bicycle travel. The biggest mistakes appear to be lost opportunities. Better intersection treatments on U.S. Route 13 would improve efficiencies, safety and walkability of the area. In too many locations, pedestrians create their own crossings and dart mid-block, without understanding the dangers of multiple threat crashes. Drivers accelerate between lights and are aggressive towards bicyclists and pedestrians or behave erratically because they do not know how to respond to the presence of non-motorized users.

Consistent, high-intensity intersection treatments are missing

Drivers and pedestrians respond to the cues the street provides. High intensity crossings are needed. Roundabouts, mini-circles and raised intersections can allow for better predictability and reduced severity of accidents when they do occur. Because U.S. Route 13 is wide, the turning radii is large and motorists can make turns extremely fast and fail to anticipate a pedestrian. Tailored treatments to narrow the turning radii and access management to limit driveways near intersections are also needed on the Eastern Shore. In many places, pedestrian and bicycle amenities are just not provided because the presence of non-motorized users would effectively shut down the cycle given the enormous crossing distances. Ignoring non-motorized users is not the solution; better intersection treatments are.

Lack of enforcement

Red light runners and motorists speeding to 'beat the yellow' light were observed on the Eastern Shore. As a general rule, there are 32 vehicle-to-vehicle conflict points at intersections and 24 vehicle-to-pedestrian conflict points. A pedestrian's chances for survival drop to 15 percent when hit by a car traveling 40mph. Accident reduction requires better anticipation and reaction by all modes. Aggressive driving needs to be reduced through continued enforcement activities. Additionally, code enforcement needs continued focus on maintaining the pedestrian right of way. Where sidewalks do exist, they are often crumbling or littered with debris such as rocks.

Sidewalks need maintenance

A sidewalk is composed of three zones: the shy zone, the walk-talk zone and the furniture zone. The 'shy zone' is the 2 to 3 feet closest to the building's edge. The 'walk-talk zone' is the central section of the sidewalk. In order for two people to walk side by side comfortably, the walk-talk zone should be 5 feet. The 'furniture zone' is the 2 to 3 feet closest to the road where trees, a vegetative buffer, street signs, utilities, benches and other 'furniture' are housed. A number of improvements can be made to better support active transportation in Eastern Shore communities. At present, utility poles, trees and signage block the pedestrian right-of-way and pedestrians are often forced into traffic to continue on. Tree roots, broken sidewalks, parking, litter and raised bricks regularly provide tripping hazards for pedestrians.

Educational campaigns are needed

Participants of the walking audits noted how many times pedestrians endanger themselves by jaywalking. An educational campaign is needed to explain best practices for active transportation on the Eastern Shore. Additionally, a campaign on roundabouts is also needed. Educational materials that explain both the benefits of roundabouts and how to navigate a roundabout are needed. Lastly, bicycles are often seen riding up on the sidewalk into traffic because the street is not designed to encourage use. Bicycle safety for adults and children is needed. Riding on the sidewalk exposes pedestrians and bicyclists to conflicts and often makes it challenging for drivers to anticipate other road users.

More seating is needed

Over the past few decades, seating and other amenities have been removed from downtown areas around the country in order to discourage transients from loitering. The unintended consequence of this approach is that this now discourages residents and visitors from lingering. Removing amenities is not the answer. Benches, sheltered bus stops, water fountains, rest rooms, bike racks and other amenities to encourage active transportation place "eyes on the street". This means that there are more people observing one another and their surroundings, and this discourages unwanted behaviors.



Poor sidewalk conditions that create tripping hazards are evident across the Eastern Shore of Virginia



Bicyclists in Chincoteague feel more comfortable riding on the sidewalk than on the street



Numerous obstructions such as utility poles make walking a challenge.



This building in Exmore fails to watch over the street



Chincoteague has a wonderful trail that should be connected to the downtown area and the rest of the Eastern Shore



The design of U.S. Route 13 encourages motorists to “drive-by” rather than to stop to enjoy Eastern Shore communities

Lack of transparency and eyes on the street

The community, homeowners, planners, developers and architects play a greater role in protecting the community and themselves from crime by integrating land use and transportation systems into the design and management of the physical environment. The fundamental premise is that when we are observed, we place legitimate “eyes on the street” making the community more comfortable and enjoyable. We create a sense of place when our buildings watch over the street and our streets are designed so that buildings are not set back away from ugliness. In order to have ‘eyes on the street,’ communities need to maximize transparency. This means removing window coverings, bars and other barricades so that 70 percent of the ground floor building face is transparent. This building in Exmore encourages bad behaviors because it turns its back on the community.

Regional trail to support active transportation needed

The Eastern Shore of Virginia is in an enviable position. With low traffic volumes, flat terrain, a stunning natural environment, historic main streets, a live rail corridor, and access to quality foods, the Eastern Shore is a tourism dream. A rail and trail corridor would provide a tremendous asset for active, healthful living on the Eastern Shore, while bringing significant revenue. Because Route 13 is the only hurricane evacuation route on the Eastern Shore, a well-built rail with trail corridor could allow secondary egress for emergency vehicles or two exit routes if conditions became extreme. The rail right-of-way allows such ambitious plans. Otherwise, this trail could provide non-motorized users the opportunity to travel from Cape Charles to the Maryland border on a protected trail.

Under-utilized places and sprawling development

Placemaking is a multi-faceted approach to the planning, design and management of public spaces. The goal of place based planning is to transform under-utilized places into thriving destinations. Put simply, it involves looking at, listening to, and asking questions of the people who live, work and play in a particular space, to discover their needs and aspirations. This information is then used to create a common vision for that place. Learn more about placemaking at www.pps.org. In too many areas of the Eastern Shore, transportation systems function to encourage driving-thru rather than enjoying the quality of place. While traditionally, the Eastern Shore has focused development around traditional villages, more sprawling development along the U.S. Route 13 corridor is causing disinvestment in the heart of the Eastern Shore communities.

On July 28 through August 1, 2012, the Walkable and Livable Communities Institute facilitated Active Living Workshops in Cape Charles, Onley-Onancock, Chincoteague and Exmore, observing the walkability, livability and aging-in-place elements of these communities. Sponsored by Eastern Shore Healthy Communities, with funding by Virginia Department of Health, the walkability workshops aim to improve public health on the Eastern Shore by addressing obstacles to active transportation.

Eastern Shore *Recommendations*



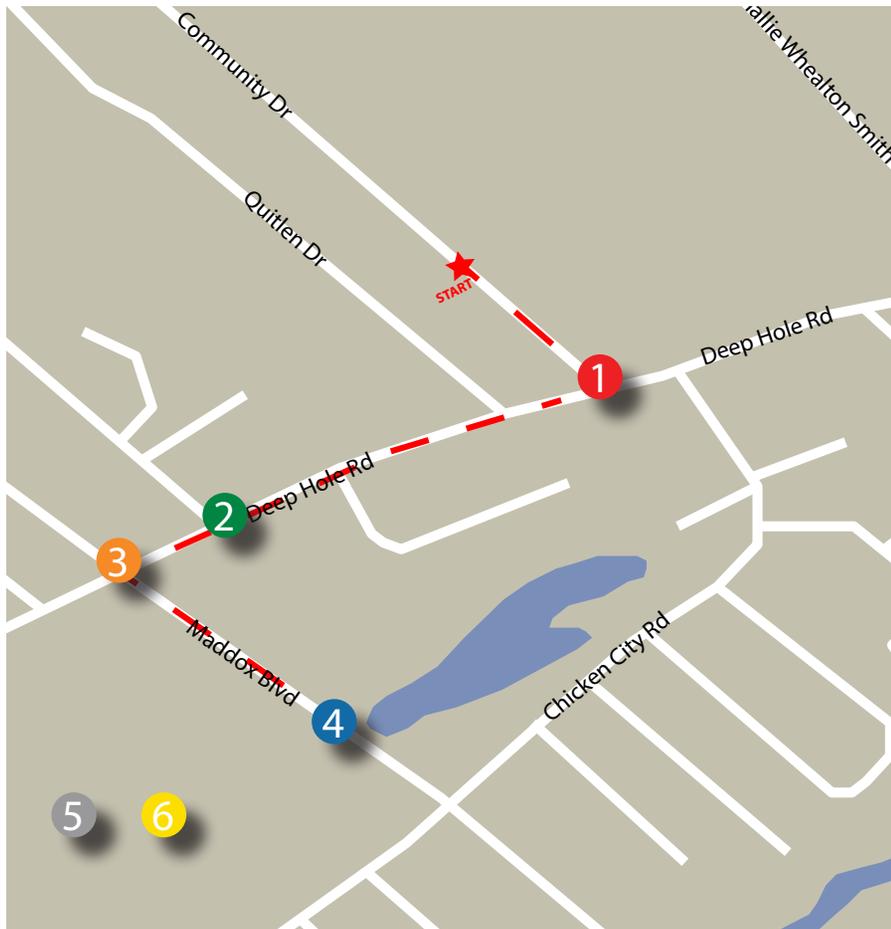
**Workshop 1
Chincoteague**

Chincoteague

Chincoteague Island is well-known for its ponies, natural beauty and active lifestyle. The streets are filled with pedestrians, bicyclists, golf carts, scooters, in addition to vehicular traffic and deliveries. Many people visit Chincoteague Island to ride bicycles in town, visit the beach and then enjoy Chincoteague National Wildlife Refuge. Given its significance as a great destination, numerous opportunities abound for right-sizing streets and providing pedestrian and bicycle facilities throughout the community.



Walking Audit Summary



1

Right Sized Travel Lanes

Encourage 20 - 30 mph speeds in town

2

Turning Radii

Reduce turning speed

3

Intersection Treatment

Assist all modes with bold intersection treatments

4

Bike Lanes

The demand is here; the facilities are not

5

Mini Circles

Beautiful treatments reinforce place

6

Roundabouts

Safer intersection treatments offer diverse transportation options



1

Right Sized Travel Lanes

Encourage 20-30 mph speeds in town

Above: Fairhope, Alabama does a nice job of right-sizing travel lanes when re-striping. Note how the bold edge stripe creates a 10-foot travel lane and an ample, well-marked bike lane.

Inset: Overly wide travel lanes in Chincoteague encourage higher speeds than what is posted.

Best Practices to Learn From



2 Turning Radii Reduce turning speed

Above: Tightening the turning radii creates safer turning movements because drivers must slow down before turning the corner.

Inset: Many intersections in Chincoteague encourage high speed turning movements because motorists can turn in and out without slowing down.





3 *Intersection Treatment*
Assist all modes with bold intersection treatments

Above: A number of high intensity intersection treatments, such as a mini roundabout, make sense in Chincoteague.

Inset: Given the diverse modes in Chincoteague, new intersection tools should be considered such as a mini-roundabout. In residential areas, mini-circles can reduce the likelihood and severity of accidents while contributing to local charm.



4

Bike Lanes

The demand is here; the facilities are not

Above: Bicycle lanes with bold striping transition into a sharrowed street.

Inset: Bolder edge striping and markings for bike lanes are needed in Chincoteague to ensure that motorists recognize that they are to share the road and so bicyclists understand how to navigate as road sections change.





5 Mini Circles

Beautiful treatments reinforce place

Above: Street treatments should add to place like this intersection in Holland, Michigan.

Inset: Street treatments do not celebrate Chincoteague's spirit. Instead, bicyclists often transition from marked to unmarked areas as in the picture below and motorists do not understand that they must share the lane.



6

Roundabouts

Safer intersection treatments offer diverse transportation options

Above: Roundabouts create a stunning gateway, improve efficiency, reduce accidents and increase surrounding land values.

Inset: A sense of arrival is needed in Chincoteague and a mini roundabout could accomplish this.



Chincoteague



A colored bike lane is one way to create the visual cue to both motorists and bicyclists that they belong. It also keeps bicyclists on the correct side of the street, rather than encouraging cycling into traffic on sidewalks which is currently the case. Another added benefit is the buffer the bicycle lane provides for pedestrians. Driveways should be consolidated and narrowed to provide visual cues to pedestrians, especially children. Numerous driveways are problematic because exiting and entering vehicles block sidewalks. When we site destinations of significance, like the YMCA, we also want to consider how users get to and from the facility.

Chincoteague



Active living can be enhanced by adding colorized bike lanes, higher intensity crosswalk markings and increased signage. The goal should be to reduce traffic speeds and increase efficiency so that there is less speeding between traffic lights and traffic flow improves through new intersection treatments. Roundabouts, mini circles and traffic calming features can move cars through an area with lower speeds but improved efficiency. Wide travel lanes encourage faster driving. The colorized bicycle lane visually narrows the street for the motorist and demarks space, making all users more comfortable.



Chincoteague



Treatments don't need to be expensive to provide tremendous value to the community. A sharrow is a shared roadway marking - usually paint - placed in the center of a travel lane to alert motorists and bicyclists alike to share the use of the lane. They help position bicyclists away from the opening doors of cars parked on the street, encourage safety when vehicles pass bicyclists and reduce the incidence of wrong-way bicycling. Adding sharrows to a travel lane and signage reminds motorists to "share the road".

A Photovision for Chincoteague



Chincoteague's main gateway transforms from a loose confederation of strip buildings to an organized rural village street. All traffic honors this space, moving no more than bicycle speed in marked sharrow lanes. Added head out angled parking helps organized the edges, while vertical walls of green trees finish the celebration of this important gateway to the island. Chincoteague now reads fully as a destination village, as well as a national outdoor treasure.



Workshop 2 Onley and Onancock

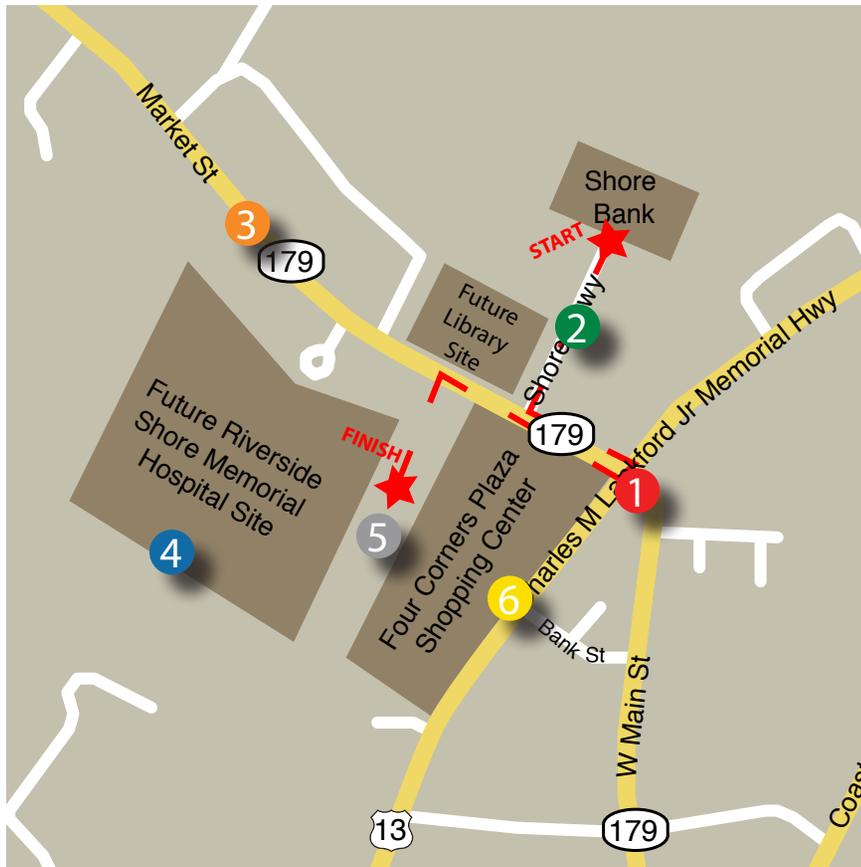
Onley and Onancock



U.S. Route 13 bisects Onley and Onancock. Presently, this intersection is not pedestrian friendly but with a new regional hospital, shopping, the library, banking headquarters and route to Onancock, it must be. Plus, residents desire traveling with ease between Onley and Onancock by bicycle or golf cart. The intersection of U.S. 13 and 179 has no pedestrian signals or crossings. Onley and Onancock must support one another by requiring a livable streetscape.



Walking Audit Summary



- 1** *Intersection Treatment*
Design for livability
- 2** *Creating an Edge*
Enclosure makes pedestrians comfortable
- 3** *Road Diet*
Right-sizing streets encourages appropriate behavior
- 4** *Terminating Vista*
Provide a delight for the eye by properly siting buildings
- 5** *Connectivity through a Paseo*
Reduce traffic congestion and shorten walking distances.
- 6** *Liner Buildings*
Buildings should watch over and honor the street



1 **Intersection Treatment**
Design for livability

Above: Note the pedestrian crossings on this double lane roundabout in Davidson, NC.

Inset: A double lane roundabout at the U.S. Route 13 and 179 intersection would address many community concerns about encouraging active transportation between Onley and Onancock. Presently, crossing U.S. Route 13 is dangerous due to a lack of pedestrian infrastructure and signals. A double lane roundabout provides safer crossing areas and reinforces place.





2

Creating an Edge

Enclosure makes pedestrians comfortable

Above: Liner buildings transform a setback to a village.

Inset: Setback buildings fail to honor the street or watch over people. Because present development is scaled to motorists, rather than humans, people feel uncomfortable and unsheltered when we set buildings back from the road.



3

Road Diet

Right-sizing streets encourages appropriate behavior

Above: Note the old marking underneath the new Edgewater Drive, and how the road diet demarks space for all roadway users.

Inset: Route 179 is overbuilt and a road diet could reallocate space for sidewalks and bike lanes. Traffic volumes do not warrant a four-lane undivided street in this area. Reallocating space to support all modes can be seen on Page 63.





4

Terminating Vista

Provide a delight for the eye by properly siting buildings

Above: Landmark buildings should be sited to encourage development and anchor place.

Inset: By framing the entrance better with trees and edge striping, this terminating vista could be stunning. See the example on Page 64.



5 **Connectivity through a Paseo**
Reduce traffic congestion and shorten walking distances.

Above: Pedestrian connections and gathering areas would encourage a natural flow of people between the hospital, library and village center. A paseo, or walkway, connecting the Four Corners Plaza Shopping Center with the new hospital would encourage exchange between the two areas and provide hospital staff and visitors with needed amenities and improve the economic vitality of the shopping center.

Inset: The Four Corners Plaza Shopping Center could transform into a true village by siting buildings and improving connections within the superblock. This would be more in line with traditional, compact village development patterns than recent development which sprawls along the U.S. Route 13 corridor.



6

Liner Buildings

Buildings should watch over and honor the street

Above: Buildings should honor the street and watch over people so that they feel comfortable lingering. The Four Corners Plaza Shopping Center is in an enviable position to service the hospital, bank and library but must focus on creating outdoor rooms, like in the example, to encourage activity.

Inset: Providing sheltered areas for people to eat and linger is good for business, but this is presently lacking at the Four Corners Plaza Shopping Center.

Onley and Onancock



A road diet involves eliminating travel lanes to improve safety for pedestrians, bicyclists and motorists. Motorist crashes are typically reduced 12 to 30 percent, with some drops as high as 70 percent. While there can be more than four travel lanes before treatment, road diets are generally conversions of four-lane, undivided roads into three lanes—two through-lanes plus a center turn lane or median island. The fourth lane may be converted into bicycle lanes, sidewalks, planter strips for street trees, a bus stop, a separated multi-use trail, a wider outside lane or for on-street parking. A road diet functions best on streets with average traffic daily volumes of 8,000 to 16,000. Daily traffic counts on U.S. Route 179 are much lower and this corridor does not warrant the present design.

Onley and Onancock



Terminating vistas emphasize important structures or monuments. They anchor campuses and establish a sense of place, which frames investment and upholds land values. Whenever possible, we should look for opportunities to celebrate development and investment in our community. Properly siting buildings to provide passersby with a glimpse of beauty is an act of love towards one's community. In celebration, the community builds a complete street to frame investment and uphold land values to encourage further development. These public-private friendships should be seen throughout the community and should be a hallmark of doing business in Onley and Onancock. Streets should prime development, rather than detract from property value.

Onley and Onancock



The majority of four-lane roadways were built or widened to accommodate peak vehicle traffic volumes, but for the remaining 22 hours each day, they are under utilized. On these four-lane roads with excess capacity, motorists notice that there are empty lanes in their direction. Speeds are often higher than the posted speed limit and dangerous conditions are created when cars stop in travel lanes waiting to turn left or right and a last-minute lane change by another motorist hoping to preserve momentum, creates a serious rear-end collision. Four lane undivided highways also have blind spots created by multiple lanes of traffic. Because a complete street can be provided within the existing right of way after removing or narrowing vehicle travel lanes, road diets are less expensive than widening roads, have fewer negative impacts on adjacent properties, and interrupt traffic for less time during the conversion than a road widening project would. Route 179 is overbuilt for the number of cars on this roadway. By placing Route 179 on a road diet, space is better allocated to support all modes and still moves vehicles efficiently and effectively.



A Photovision for Onley and Onancock



The gateway center and heart of the Eastern Shore is celebrated with new buildings that hold the corner and define a true village at the U.S. Route 13/179 intersection. Traffic flows but at a more appropriate speed and pedestrians find the low speeds and much reduced crossing distances a powerful fulfillment of a dream to re-stitch Onley and Onancock. Vehicles move through this entire 1,500 foot long village at a respectful speed. A green lane to the side allows motorists to pull fully out of the travel lanes in order to park or un-park, and this low speed lane works well for bicyclists wanting to access the village, without creating confusion on the sidewalk. Landscaping material, wayfinding, and other features point regional travelers to Onley and Onancock, and the hidden treasures of the emerging medical campus, library and cultural center. Let Onley-Onancock partner and transform the U.S. Route 13 corridor into a livable core. Note the double lane roundabout and the CVS properly sited to create a traditional, village feel.



Workshop 3 Cape Charles

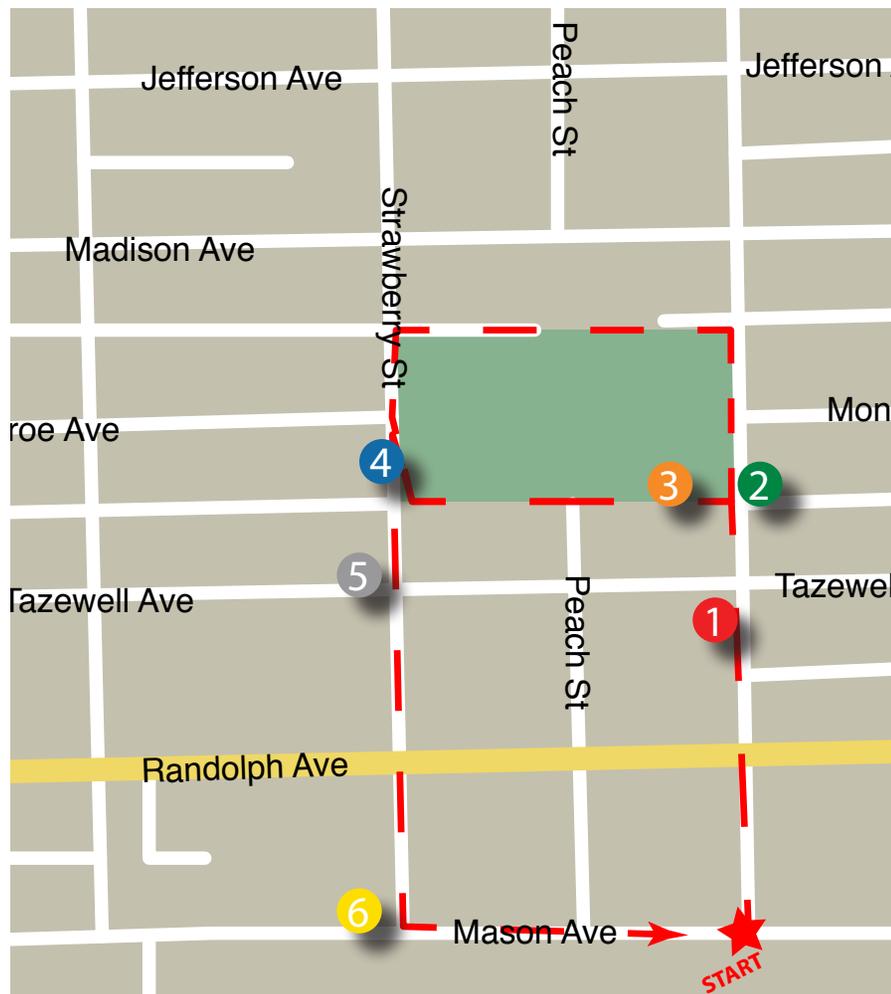
Cape Charles



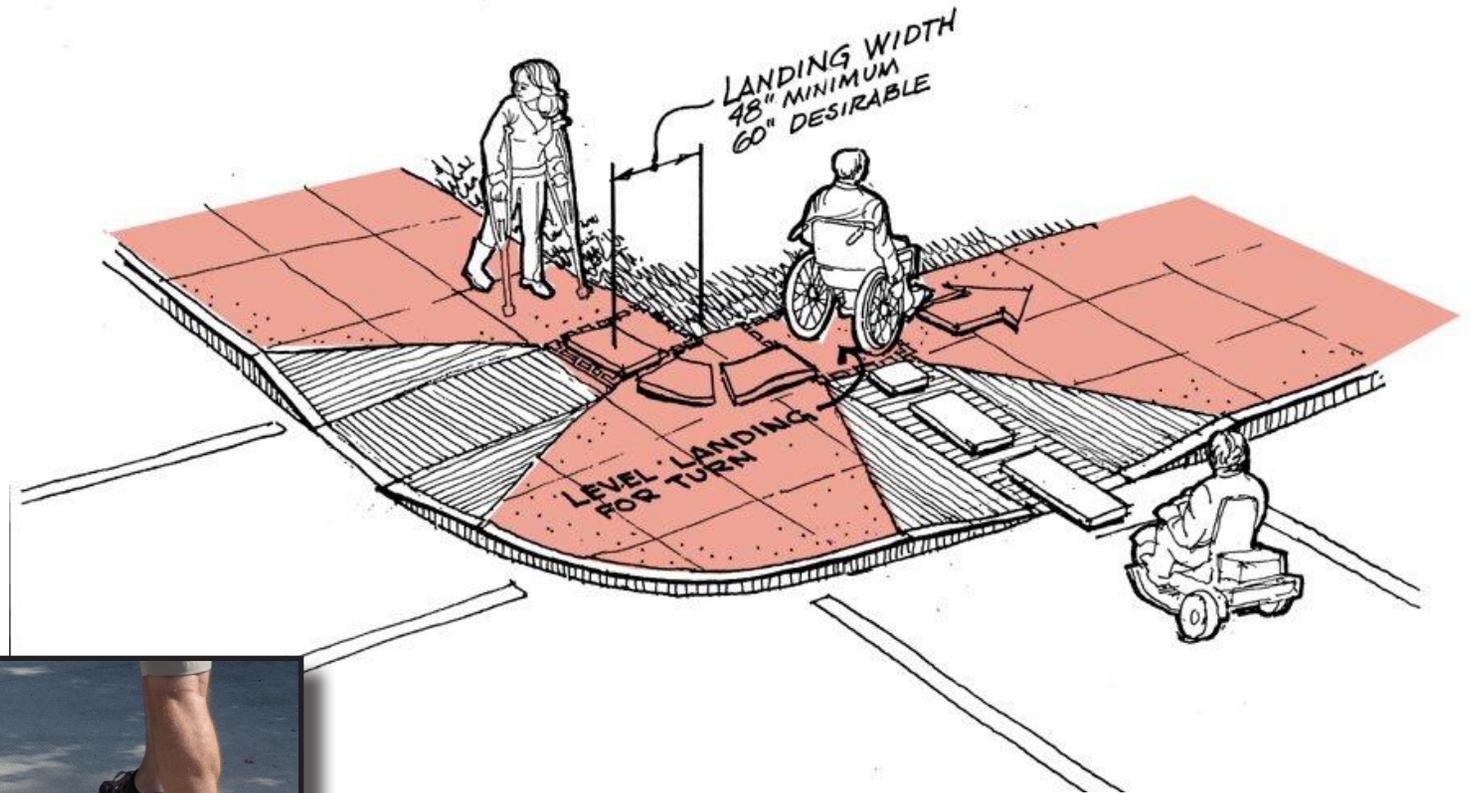
Cape Charles has an outstanding collection of historic buildings and strives to preserve its rich architectural heritage. Incredible natural beauty and a well-cared for town center speak to Cape Charles' pride in place and the skills of elected leaders and technical staff. Exciting revitalization efforts such as the Strawberry Street streetscaping project are underway and with a few tweaks to existing tools, Cape Charles may very well be the most livable community on the Eastern Shore.



Walking Audit Summary



- 1 ADA Compliance**
Make the community accessible to all
- 2 Striping**
Visually narrow streets by moving paint
- 3 Accessory Dwelling Units**
Maximize density while retaining historic character
- 4 Signage and Way finding**
Learn more about destination branding
- 5 Mini Circles**
Choose safer intersection treatments for a variety of users
- 6 Sidewalk Width**
Encourage a stroll through the heart of downtown



1

ADA Compliance

Make the community accessible to all

Above: Walking audits with disability awareness and advocacy groups is a great way of documenting inadequacies.

Inset: Some challenges to ADA compliance exist in Cape Charles.



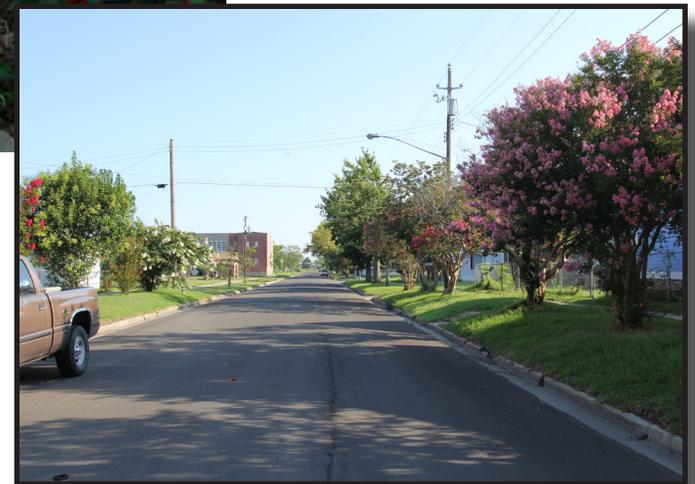
2

Striping

Visually narrow streets by moving paint

Above: Bold edge strips and 10-foot travel lanes enforce a 25 mph design speed by visually narrowing the road for motorists.

Inset: By adding bold edge stripes, Cape Charles can enforce a lower design speed by visually narrowing the road for motorists rather than creating a runway feel that encourages higher speeds.



Accessory Dwelling Units

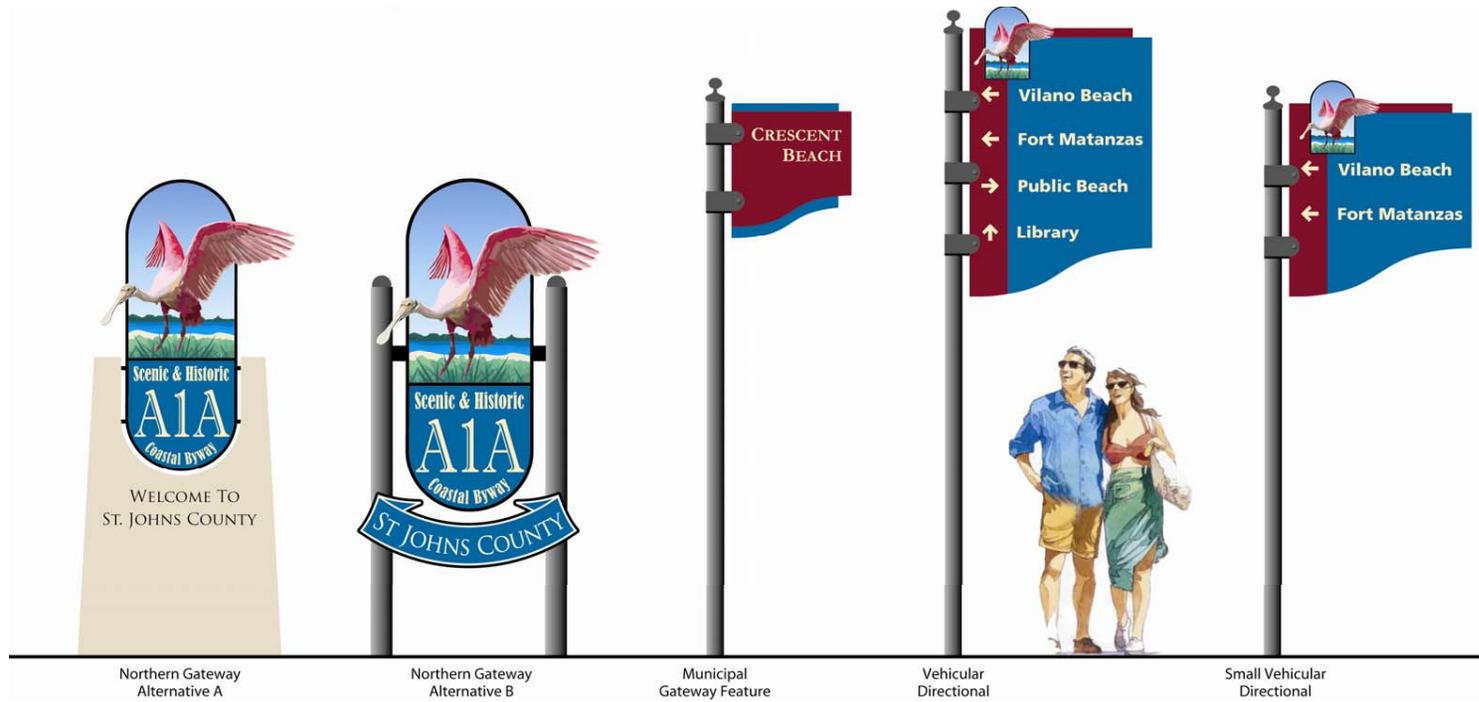
Maximize density while retaining historic character

3



Above: New construction in Conway, Arkansas, includes beautifully scaled Accessory Dwelling Units to allow a rental income or studio.

Inset: The alleys overlooking the park are an ideal location for Accessory Dwelling Units and would place “eyes on the park.” Parks and open spaces increase land values and, at present, Cape Charles is not leveraging this investment or placing eyes on the park. Accessory Dwelling Units would allow home owners to earn extra income by turning them in to summer rentals or provide a work-live studio space for artists. Communities often require the owner occupy either the main home structure of the accessory dwelling unit in order to establish community and prevent massive vacancies off-season.



4 Signage and Way finding

Learn more about destination branding

Above: Wayfinding systems lead visitors to destinations and introduce significant elements.

Inset: Cape Charles has lovely signage touches, but lacks a coordinated signage system that both welcomes and provides destination information for visitors.





5 Mini Circles

Choose safer intersection treatments for a variety of users

Above: Mini circles reduce the risk of side impact collisions which is especially important when golf carts, bicycles and vehicles share streets.

Inset: A mini circle by workshop participants does the job in Cape Charles. While incidents of traffic accidents on residential streets might be low, a mini-circle reinforces the sense of place, creates a beautiful terminating vista and improves neighborhood streetscaping.



6

Sidewalk Width

Encourage a stroll through the heart of downtown

Above: A sidewalk is composed of three zones: the shy zone nearest the buildings, the walk-talk zone, and the furniture zone.

Inset: Tripping hazards exist when the walk-talk zone is too narrow.



Cape Charles



Crosswalks give pedestrians a sense of safety when entering the realm of vehicular traffic. At the same time, marked crosswalks alert motorists where to expect pedestrians. The goal is to provide signals to both motorists and pedestrians so that they can anticipate and respond to one another. As Cape Charles links critical areas in town, crossing locations and types should be evaluated. At the very least, where crossings do exist, they should be maintained yearly to provide clear messages to all.

Cape Charles



Yellow centerlines have historically been viewed as a measure to reduce crashes. One goal of striping centerlines has been to define the path of travel for motorists, increasing the predictability of motorist behavior and reducing the likelihood of head-on crashes. However on roadways with low speeds and low traffic volumes, centerlines tend to increase speeds and decrease the motorists' awareness of other road users. Recent studies have pointed to benefits of removing center lines for all roads users due to the speed reducing effect of centerline removal and the increase in driver vigilance that comes from the lack of certainty. That increased driver watchfulness leads to benefits for not just other motorists but also people exiting parked cars, pedestrians and bicyclists. Where sight lines are good, traffic volumes are below 6,000 ADT, and when posted speed limits are below 40 mph, centerlines may be removed. On the approach to and through curves and vertical crests, centerlines are still needed. Notice how edge stripes narrow the streets and demark parking.



Cape Charles



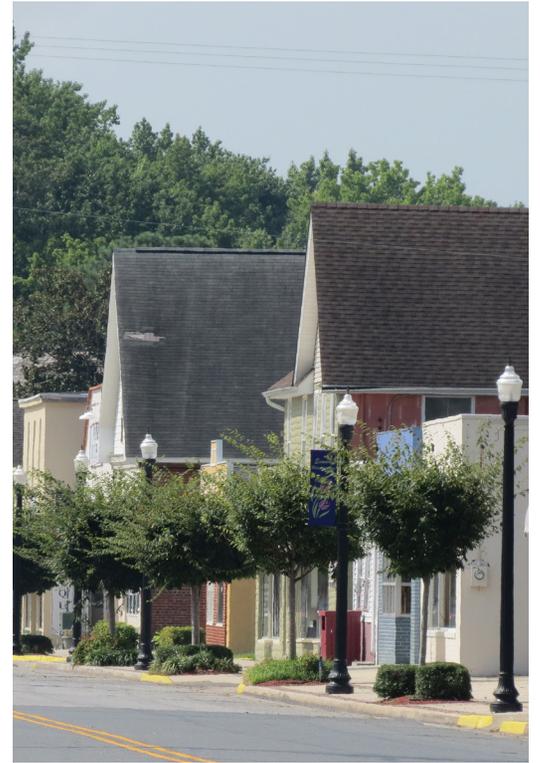
A mini-traffic circle is a raised asphalt island in the center of an intersection, often planted with trees or flowers. It slows down cars and manages turning trucks. In Seattle, mini-traffic circles have reduced crashes by 94% at the intersections where they were installed. Both the frequency and severity of accidents is reduced. Mini circles cost less than a traffic light and are especially useful in the center of large intersections and where there are diverse mode choices. Cape Charles has vehicular traffic, golf carts, other motorized devices, pedestrians and bicyclists on its streets. Slowing cars through intersections and changing the angle of approach to limit side impact collisions is a win for the community. Additionally, mini circles can serve as wayfinding aids or further green neighborhoods.

A Photovision for Cape Charles



Strawberry becomes a flexible, festival street. In the foreground, a pleasant mini-circle sets a calming visual and sound attraction. It serves as a terminating vista, drawing and linking people to the great park, as well. Brick pavers for the road deck, and accent crossings, raised gateway features on the corners, curb extensions, lamps, and tall vertical green walls accent place. During festivals, this street transforms its parking into places for food vendors and artists. Terminating the far vista, a new façade and an added neighborhood use, such as a local grocer, brings full life and vibrancy to this street for residents and visitors.





**Workshop 4
Exmore**

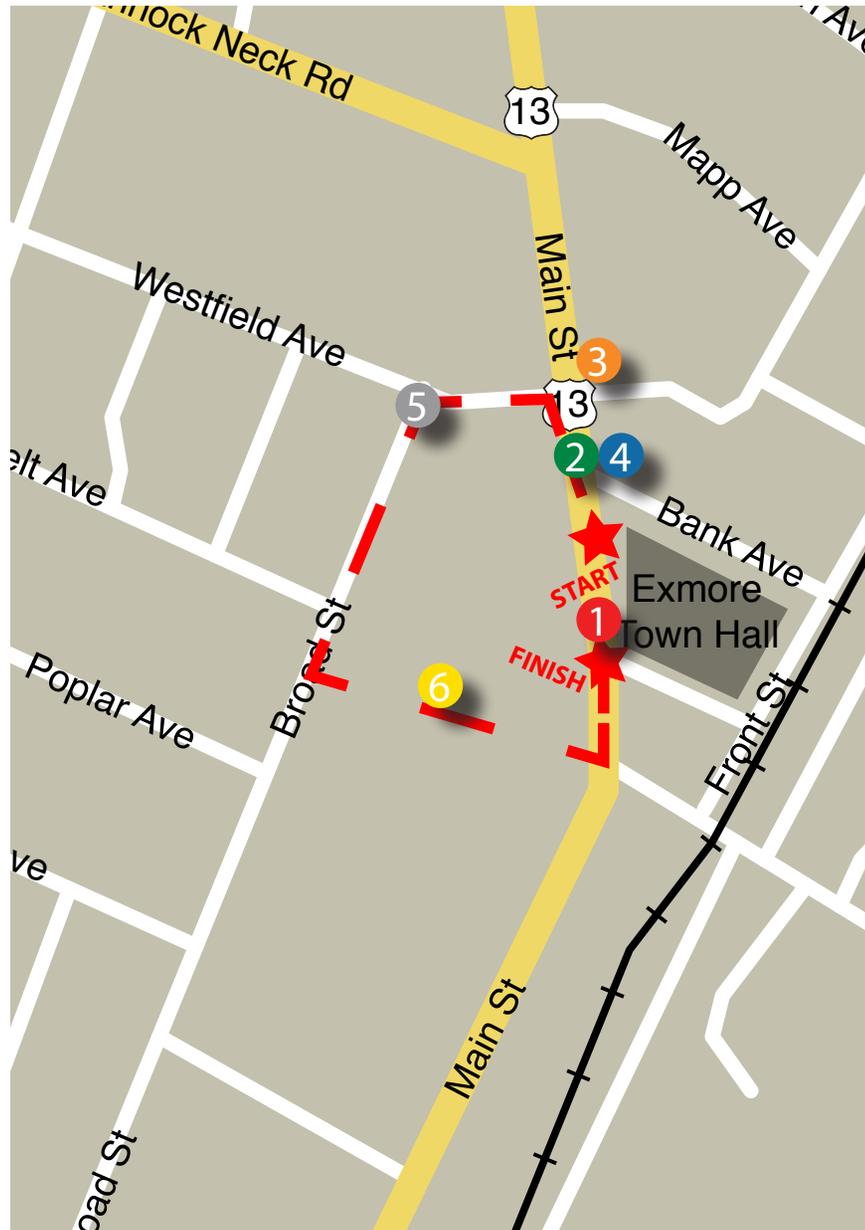
Exmore



Known as the treasure of Virginia's Eastern Shore, Exmore is certainly that with its historic main street and recent downtown revitalization projects. Exmore is also home to New Ravenna Mosaics, a premier designer and manufacturer of stone and glass mosaic tiles, and one of the largest employers in Northhampton County. New Ravenna Mosaics was awarded the Vanguard Award from the Virginia Chamber of Commerce for being the fastest growing manufacturing company in the Commonwealth. The lasting works of art created in Exmore are celebrated world wide.



Walking Audit Summary



- 1** *Street Trees*
Greening Main Street has economic benefits
- 2** *Turning Radii*
Design for desired behaviors
- 3** *Building Setbacks*
Allow fewer “missing teeth” on Main Street
- 4** *Crossings*
High intensity markings benefit all
- 5** *Pocket Park*
Give artisans time to enjoy Exmore
- 6** *Surface Lot*
Design for the heart of downtown



1

Street Trees

Greening Main Street has economic benefits

Above: People like shopping under the shade and shelter of a tree canopy.

Inset: Exmore's main commercial district needs greening.



2

Turning Radii

Design for desired behaviors

Above: Bulbouts can narrow the turning radii and provide a place for an outdoor room.

Inset: Large corner radii encourage high speed turns and fail to provide an edge that honors the street.



3

Building Setbacks

Allow fewer “missing teeth” on Main Street

Above: Buildings should watch over the street and make visitors feel comfortable.

Inset: Exmore should not allow setback building in the heart of downtown. These “missing teeth” devalue surrounding properties and dishonor Exmore’s history as a true village center.





4 Crossings

High intensity markings benefit all

Above: Different materials can be used to make crossings more visible day and night.

Inset: Faded crosswalks are dangerous as they send conflicting messages to pedestrians and motorists. While a pedestrian might be able to discern the faded crossing in Exmore, it would be a challenge for a motorist to note this.



5

Pocket Park

Give artisans time to enjoy Exmore

Above: Small spaces can create cozy spaces in the heart of downtown.

Inset: Streetscape improvements are beautiful but could be softened and more organic with plantings, seating and shelter. Additionally, given Exmore's growing reputation as a center for artisans, pocket parks are increasingly important.





6

Surface Lot

Design for the heart of downtown

Above: A pocket park can transition beautifully into a shaded surface lot like this example from Davis, CA.

Inset: Surface lots in the heart of a downtown should be given as much consideration as other elements. As Exmore looks to improve its surface lots, shade and transition zones for pedestrians are needed.

Exmore



A number of improvements can be made to better support active transportation in Exmore. At present, the sidewalk is too narrow in the heart of a downtown. This photo vision shows a subtle widening of the existing sidewalk and greening of the street through tree wells and hanging flower baskets.



Exmore



Drivers and pedestrians respond to the cues the street provides. High intensity crossings can be seen day or night. Exmore will want to look at a maintenance program for street treatments to ensure crossings are visible to motorists. Presently, Exmore is sending conflicting messages to pedestrians and motorists because the crossing is only visible to pedestrians.

Exmore



In many areas of Exmore, pedestrian crossings are faded. Even new revitalization efforts need maintenance and the example above illustrates how paint can assist motorists in noting pedestrian crossings. Yielding behaviors by motorists on Exmore's Main Street were poor and this calls for increased enforcement by police as well. Note, too, the difference of feel when the setback building is pulled up to the street. This sense of enclosure is comforting to pedestrians, honors Exmore's history as a true village, and supports surrounding land uses. Building setbacks should not be allowed in downtown areas.

A Photovision for Exmore



In the heart of this craftsman village, a neighborhood pocket park and charming mosaic blossoms to celebrate American artistry. The intersection becomes the focal point, one of the most beautiful, powerful mini-circles in the world, hand-crafted by the artisans of New Ravenna Mosaics. This is reflected with the mural wall, a scene that should welcome not only workers, but tourists who want a quiet, contemplative place to rest from their miles of journey, to see artisans at work and their creations around town. This scene is completed with noontime food vendors, wayfinding, and a slow, relaxed link to a diverse neighborhood. Pride of place pours from this organic corner, and, over time, artists are drawn to this center, transforming vacant packing houses into studios. Note that this raised mini-circle handles the biggest freight trucks as they complete their turn for loading and off-loading materials.

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Active Living *Toolbox*

Plan for Pedestrians

Walkable communities outperform car-oriented communities economically. Nearly everyone, for at least some portion of every day, is a pedestrian. This is why pedestrian planning matters. Pedestrian master planning establishes the policies, programs, design criteria, and projects that will further enhance pedestrian safety, comfort, and access in a community. Through the pedestrian master planning efforts, a community will have environmentally, economically, and socially sustainable transportation systems.

A pedestrian master plan helps communities to:

- Review existing plans, policies, guidelines and codes to determine whether inherent conflicts exist within these documents that might impact the continuity of pedestrian infrastructure across the cities' borders.
- Build a toolbox and best practices that inform pedestrian planning. Tools can include performance methods and monitoring that functions within the area.
- Propose and refine treatments to ensure the integrity of the pedestrian network and to provide clear messaging to users about pedestrian rights and responsibilities.
- Perform field research to identify conflicts, especially noting conditions such as sidewalk gaps and the distribution of existing pedestrian facilities.
- Analyze needs and demand based on information gathered, allowing a broader understanding of patterns, behaviors and origins and destinations.
- Perform a security analysis because people will not walk if they feel that they must navigate through an area with no activity or "eyes on the street."
- Determine where they need to add shade to streets and sidewalks, because if you want people to walk in all temperatures, it's necessary to provide environments that are comfortable for walking.
- Develop criteria for ranking, prioritizing and implementing projects for maximum impact and to better support current initiatives.
- Develop funding strategies that might reduce the burden of improvements.



Pedestrian Master Planning focuses on pedestrian safety, comfort and access in a community.

Resources

The Pedestrian and Bicycle Information Center (PBIC) is a national clearinghouse for information about health and safety, engineering, advocacy, education, enforcement, access, and mobility for pedestrians (including transit users) and bicyclists. Model pedestrian plans are available at <http://www.walkinginfo.org/develop/sample-plans.cfm>.

Adopt a Complete Streets Policy

A complete streets policy ensures choices are available to the community by making walking, bicycling and taking public transportation convenient, easy and safe. Changing policy so that transportation systems consider the needs of pedestrians, bicyclists and transit users means that people of all ages and abilities are included in the planning and design processes. Land use and transportation policy can either contribute to or detract from community building. When thoughtfully integrated, land use and transportation policies and strategies can jointly preserve and even enhance natural and cultural resources and create better built environments that are walkable, livable and sustainable. Regardless of a policy's form,

the National Complete Streets Coalition has identified ten elements of a comprehensive complete streets Policy.

- Includes a vision for how and why the community wants to complete its streets.
- Specifies that 'all users' includes pedestrians, bicyclists and transit passengers of all ages and abilities, as well as trucks, buses, emergency vehicles, and automobiles.
- Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all modes.

- Is understood by all agencies to cover all roads.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Directs the use of the latest and best design criteria and guidelines while recognizing the need for flexibility in balancing user needs.
- Directs that Complete Streets solutions will complement the context of the community.
- Establishes performance standards with measurable outcomes.

Resources

Rural by Design by Randall Arendt

The Timeless Way of Building and A Pattern Language by Christopher Alexander

Sprawl Repair Manual by Galina Tachieva

National Complete Streets Coalition at <http://www.completestreets.org/complete-streets-fundamentals/resources/>



A photo-visualization of a Complete Street created by the WALC Institute for AARP Georgia

Utilize Street Treatments to Encourage Active Transportation

Sidewalk Design

Sidewalks require high levels of design and care. It is within the protected spaces of a sidewalk where people move freely, but also spend time engaging others and enjoying their public space. Sidewalks work best when they are fully buffered from moving traffic. Color, texture, street furniture and other materials can distinguish functional areas of sidewalks. When building a sidewalk, contractors should be advised that utilizing trowel cuts, rather than saw cuts, creates a better surface for wheelchairs and wheeled devices. These seams are essential for sidewalk construction and expansion but saw cuts often provide a larger gap than what is needed, creating a bumpy ride or sticking point for walking canes. Whether for decorative purposes or to allow for sidewalk expansion, the goal is to keep the surface level and to avoid a bumpy ride for wheeled users.

Curb Extensions

Curb extensions are a nearly universal tool for school areas. In transforming overly wide streets, curb extensions (also known as bulb outs, elephant ears and nibs) bring down right turning speeds, identify important crossings, and make it much easier for motorists to see children and for children to see motorists. When used in a series, curb extensions can significantly bring motorist speeds to acceptable levels. Curb extensions can be used at intersections, mid-block, inside of parking strips (tree wells) and other locations. Although many curb extensions are kept plain in appearance, at the entry to a neighborhood, they can be landscaped to serve as attractive gateways.

Crossing Markings

Crossings should be well placed and located where there is a strong desire to cross, sight distances are good, and speeds are low. The use of materials to create attractive streetscape features can add beauty, function and a sense of place. Each functional part of a street – parking, crossings, curb extensions, lane narrowing and plantings – should be designed to add to the aesthetics, character and integrity of the street. Towns must maintain crossings and note when they become faded. Volunteers can help in this surveying effort.



Sidewalks have three parts: the shy zone, the furniture zone and the walk/talk zone.



A curb extension in Birmingham, AL shortens the crossing distance for pedestrians



Crossings must be located where there is a strong desire to cross and where sight distances are good



Signage allows users to anticipate one another



Pedestrian refuge islands buffer pedestrians from traffic, allow crossings in stages and angle pedestrians correctly to face traffic.



A raised mid-block crossing in Cambridge, MA helps motorists see pedestrians in deep shadow

Crosswalk Signs

As a general rule, the higher the volume and speed of traffic, the more essential it is to use brighter, wider more visible and durable signing. The most recent version of the Manual on Uniform Traffic Control Devices (MUTCD), and other aids, should be consulted as a starting point. When possible, “double sign” school signs on all approaches. This can be done when medians are used, and on narrower streets, by signing both sides of the street. Sign locations are important. Place signs (and lighting) together, and place signs where they are highly visible and where you anticipate crossings.

Pedestrian Refuge Islands

Pedestrian refuge islands are one of the best tools to simplify crossing wide streets. Used with curb extensions, they get pedestrians out beyond parked cars and other visual obstructions. Crossing islands are used on all categories of streets, and they have their highest return on investment when they create more courteous yielding behaviors by motorists. Well designed crossing islands achieve yielding rates above 80 percent¹. Many other tools, like Rapid Flash Beacons, or raised crossings, are used when it is necessary to increase yielding behavior.

Raised Midblock Crossing

Raised midblock crossings are used between intersections, typically when blocks are long, or in other locations where speeds are higher than desired, or where sight distances are poor. Raised midblock crossings have many advantages, especially due to their ability to maintain speeds at 15-20mph 24 hours a day. Raised crossings can be used in all climates, including snow country. The grade change is generally 1:16 to 1:20 when snow and ice are involved, but 1:12 in non-snow country. Color is often used. Trees and other landscaping are important for detection, and for added neighborhood acceptance.

Raised Crossing

Raised crossings are not only used in midblock locations, they are also used at intersections. They can be used at right turn channelized islands, or at regular intersections. Crossings are designed to restrict all through speeds to 15-20 mph. Raised crossings at intersections can be used in snow country. Color is often used. Features such as bollards (vertical posts seen in the image at right), paver stones, colored concrete or colored asphalt are often specified.

Request Flashing Warning Beacons

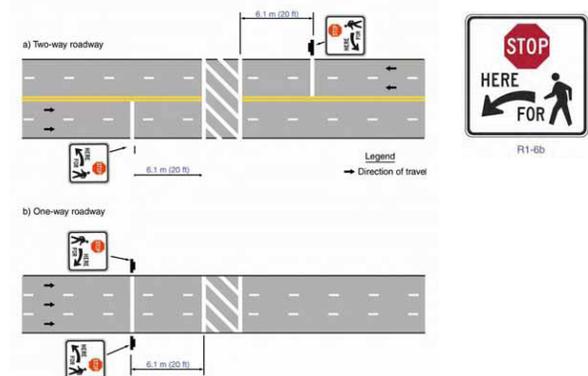
A flashing beacon is a traffic control signal that operates in a flashing mode (flash rate is typically one flash per second). A common application is to add a flashing amber signal to the top of a standard pedestrian sign to provide warning of a pedestrian crossing. In some cases, pedestrian detection is used to activate the beacons. Detection can be either passive or active. For flashing beacons with active detection, a pedestrian must press a push-button. For flashing beacons with passive detection, there are a number of options including bollards with motion sensors. The beacon can be constructed using solar power to simplify installation.

Advance Stop Lines at Uncontrolled Marked Crosswalks

Numerous studies have shown that the use of advance stop or yield lines at uncontrolled marked crosswalks in conjunction with “Stop Here for Pedestrians” signs can reduce the incidence of multiple threat crashes. Multiple threat crashes are common on multi-lane roads when a driver in one lane yields to a pedestrian, and a driver in the adjacent lane fails to stop. The Manual on Uniform Traffic Control Devices (MUTCD) allows for the use of advance yield lines at unsignalized midblock crosswalks.



The use of color and texture informs both drivers and pedestrians to anticipate one another



Examples of Stop Lines at unsignalized midblock crosswalks and the accompanying sign.



A lead pedestrian interval with right on red restriction would help this couple cross safely



Signals should recall to WALK during the cycle and instruct pedestrians on crossing times.



Raised intersections bring speeds under control and help motorists and pedestrians see each other in Birmingham, AL.

Use Lead Pedestrian Intervals

A large proportion of vehicle/pedestrian collisions at signalized intersections involve left- and right-turning vehicles. One phasing strategy to improve pedestrian safety in locations with heavy volumes of turning traffic and frequent pedestrian crossings is to provide a leading pedestrian interval (LPI). During the leading interval, all motor vehicle flows are stopped for 2-4 seconds while pedestrians are given the WALK signal. This enables pedestrians to begin crossing in advance of vehicular turning movements.

Signalized Intersections

Intersection control devices are critical if walking, bicycling and motoring are to work, and work together. People who cross at intersections, when they are signaled to do so, are most predictable. Drivers appreciate predictable and compliant behavior. When intersections become so complex and challenging that signals are added, there is often ample justification to go beyond conventional standards to address the needs of people walking and bicycling. Signal timing should be automated for inclusion of walking cycles. Signal timing should be adjusted so that pedestrian signals recall to WALK during the cycle, minus the clearance interval.

Raised Intersection

Raised intersections are used at intersections where roundabouts or mini-circles are not functional or practical, and where speeds need to be brought under control. They are different from raised intersection crossings, since they cover the entire intersection. This raises their value and cost considerably. Raised intersections are best constructed as new schools are built, but they can be applied to existing street sections. Raised intersections can be expensive, due to their potential to interrupt drainage. Meanwhile, they have many advantages to maintain speeds 24-hours-a-day. Raised intersections can be used in snow country.

Intersection Chicane

Intersection chicanes involve curb extensions on one side of the intersection, and a median on the opposite side. This combination of treatments brings the motorist toward the center, then brings them back toward the side. This deflection path brings speeds down to the desired level. All raised areas become gardens for the neighborhood. Both sides of the intersection are narrowed, minimizing crossing distance and time. Chicanes can be used on streets with volumes as high as 12,000 daily trips. Emergency responders and transit providers prefer chicanes to more intrusive four-way stops and raised crossings.

Short Medians

Short medians help bring down speeds near schools and other places where people should be expected. Short medians are placed away from intersections, but they can be located near driveways. These inexpensive features do not interrupt drainage and they have many other advantages. They bring speeds down to levels where motorists are more courteous to pedestrians and they allow U-turns, which can assist with area traffic management. Short medians also serve as gateways, where they announce arrival at an important location, such as a school. They help put motorists on greater alert. They work well in snow cities, as well as temperate climates.

Mini Circles

Mini Circles are one of the most popular and effective tools for calming traffic in neighborhoods. Seattle has 1,200 Mini Circles and this has led to a reduction in intersection crashes. They are the best neighborhood safety feature of any treatment type. These inexpensive features do not interrupt drainage. Mini Circles work outward from intersections on all three or all four legs of approaching traffic. Mini Circles bring speeds down to levels where motorists are more courteous to pedestrians; they allow all types of turns, including U-turns; which can assist with school area traffic management. A common engineering mistake is to put in four way stops around a mini circle. Mini Circles require yield signs instead.



A large vehicle being deflected through a neighborhood Intersection Chicane, Santa Barbara, CA



A short median in Loma Linda, CA announces the entrance to a residential neighborhood



A mini-circle in the Bird Rock neighborhood of San Diego, CA



Vehicles using a roundabout on Route 62 in Hamburg, NY

Roundabouts

Roundabouts facilitate through-traffic and turning movements without requiring a signal control. Roundabouts allow vehicles to circulate around an island that is often used for landscaping, a gateway or for other decorative features, like artwork. The circulating roadway is typically wider than the approach roadways and features an additional ‘apron’ against the edges of the island; both of these features allow for fire trucks, ambulances and other large vehicles. Roundabouts increase intersection carrying capacity by up to 30 percent. As the only requirement for yielding the right-of-way is to traffic already in the circulating roadway, roundabouts also reduce delays for everyone.



A road diet reallocates space to support all users

Road Diets

A road diet involves eliminating travel lanes to improve safety for pedestrians, bicyclists and motorists. Motorist crashes are typically reduced 12 to 30 percent, with some drops as high as 70 percent. High end speeds, especially, are reduced. While there can be more than four travel lanes before treatment, road diets are generally conversions of four-lane, undivided roads into three lanes—two through-lanes plus a center turn lane or median island. The fourth lane may be converted into bicycle lanes, sidewalks, planter strips for street trees, a bus stop, a separated multi-use trail, a wider outside lane or for on-street parking.



Bold striping and markings remind drivers that bicyclists belong on the road

Bike Lanes

One of the most cost-effective ways to reduce speed while improving overall vehicular flow and creating improved conditions for bicycling and walking is the conversion of overly wide roads to bike lanes. Generally, travel lanes can be reduced to 10 feet. Narrower travel and storage lanes are proving to be slightly safer. Motorists appear to become more attentive when lanes are narrowed from 11-12 feet to 10-foot travel lanes. Bike lanes should be at least 5-feet wide and seamless. Thick striping and regular markings remind drivers to anticipate bicyclists. Bike lanes have an added benefit to pedestrians in that they provide a buffer to moving traffic.

Sharrows

A sharrow is a “shared roadway marking” - usually paint - placed in the center of a travel lane to alert motorists and bicyclists alike to the shared use of the lane. They help position bicyclists away from the opening doors of cars parked on the street, encourage safety when vehicles pass bicyclists and reduce the incidence of wrong-way bicycling.



A sharrow in Seattle, WA.

Tree Wells

Sometimes a building-to-building right-of-way is too tight to plant trees in sidewalk areas. Use of in-street tree wells can allow the street to be “greened” and often without removal of parking. Tree wells can either be installed to allow water to flow naturally in existing channels, or if a complete reconstruction is needed, to insert drainage in a pattern that supports trees. Tree wells are used on many local streets but can also be used, along with curb extensions, on main streets. Use of tree wells and curb extensions, in combination, helps bring speeds to more appropriate levels.



Tree wells in the Town of Tioga, FL, provide shade and inset parking

On-Street Parking

On-street and inset parking visually narrows streets and brings down traffic speeds, while providing the most sustainable and affordable parking. Speeds are brought down even more when tree wells are used to provide a canopy to the street. Since it already has its own turn radii into each spot and access, on-street parking only takes up one-third of the land of off-street parking. But the primary reason for maximizing parking on street is to help civilize streets that were overbuilt for speed. On-street parking belongs on center village streets, serving as a buffer between pedestrians and moving cars as a natural traffic calming tool.



On-street parking can be head-in, head-out or parallel. It takes less space than off-street parking.



Motorists can see bicyclists, motorists and pedestrians with head out angled parking.



Transit stops that occur before the intersection often block the sight lines between pedestrians and motorists.



Madison, WI provides lovely outdoor eating areas even on its busiest streets around the Capitol

Head-Out Angled Parking

Head-out angled parking maximizes use of adjacent land, since off-street parking takes up three times more space than on-street parking when entrances, exits and turning lanes are considered. It also takes up less road space since adjacent lanes can be 10 to 11 feet wide. When head-out angled parking is used, lane widths can be much narrower, since back out “discovery time” is not needed. Also, the back end of vehicles have more overhang, so less space is used for the parking bay. Parking bay depths should be 15 feet. An added two foot of space is picked up when valley gutters are used. Learn the benefits of head out angled parking here: <http://vimeo.com/35268340>. In addition to the benefits listed above, head out angled parking places the trunk closest to the curb and the car doors open to shepherd children away from the road and towards the curb.

Transit Stop Locations

Where possible, bus stops should be located on the far-side of intersections (after the thru traffic signal) and at controlled crossings when located on higher volume multi-lane arterials. Far-side bus stops encourage pedestrians to cross behind the bus at the crosswalk, which improves visibility to other motorists. Bus stops located on the far side of signalized intersections also improve transit efficiency and minimize parking loss to neighborhoods. Oftentimes, near side bus stops (as in the example at right) that are sited before the intersection create challenges for transit users because they must step out in front of the bus to use the crosswalk behind the bus. Pedestrians and motorists need clear sight lines in order to anticipate one another.

Plazas, Parks and Paseos

Transforming a street, sidewalk, plaza, square, open lot, waterfront or other space into a community source of distinction brings joy to the community. Good places make good experiences possible and they have consequences in our lives. People want to be in attractive, well designed and cared for public places. Investment in streets and other public spaces brings added value to all buildings and homes in an area. A compelling sense of place allows the time spent there to be rewarding and memorable. Converting alleys, sidewalks and streets into pocket parks, plazas and paseos creates lively places for people to gather, celebrate, eat and enjoy being together.

Choose Environmentally Friendly Features

Rain Gardens

Rain Gardens can be designed to allow stormwater to percolate through the soil, cleaning rain water before discharging into sewers or bodies of water. Rain gardens can be formal or natural in appearance, depending on the local context. In the images at right, naturalistic formal plantings can provide stormwater management as in Birmingham, Alabama's Railroad Park. Incentivizing rain gardens and permeable parking, in addition to ground cover, potted plants or other planters can add to a neighborhood's reputation as a garden district.

Tree Wells

Virginia's Eastern Shore communities have many beautiful, tree-lined streets. Unfortunately, pruning for utility lines has damaged many older trees. Exmore has numerous examples of poor pruning by utility companies. Tree wells with parking features improve shade and create a sense of enclosure. Tree wells placed with on-street parking can do much to create a cooling and greening effect that will harmonize with surrounding features. Tree lined streets also create a sense of enclosure to protect pedestrians and reduce vehicle speeds. As a general rule, retailers earn an extra 12 cents on the dollar when people shop under a full canopy¹. Generally, street trees are planted every 30-40 feet.

Community Gardens

Given the historic significance of agriculture on the Eastern Shore of Virginia, schools and communities should celebrate opportunities to bring local, fresh, healthy foods to the table. Jones Valley Teaching Farm is a good model. Located in Birmingham, Alabama, Jones Valley Urban Farm is not just a place where delicious food grows — it's a place where young minds blossom. Their mission is to make their community a healthier place. Their focus is empowering future generations with an education to eat smarter, think healthier and live better. See www.juuf.org.



Formal and naturalistic rain garden design.



Tree wells and inset parking provide a green edge to the street while avoiding utility line conflicts.



A community garden in High Springs, FL.



Affordable housing can be green and beautiful.

Green Development – High Point, Seattle, WA

The High Point community in West Seattle, Washington, was designed to be a model of green development and sustainable living. Residents enjoy reduced costs to heat and cool; overall lower energy use; reduced water use; and homes are built to have longer lifecycles and low maintenance costs. High Point is a 120-acre HOPE VI redevelopment that replaces 716 subsidized housing units with three-star houses, townhouses, apartments and parks for more than 4,000 people. 50 percent of the units are home to low-income residents with 350 units designated for very low income residents. In 2007, High Point was recognized with several high-profile awards, including the Urban Land Institute’s Global Award of Excellence. High Point was one of only five worldwide awardees. Learn more about the High Point at: <http://thehighpoint.com/>.



Healthy foods should be provided near work sites and downtowns and often require small amounts of space.

Access to Healthy Foods

Access to healthy foods does not need to take huge amounts of space. A temporary farmer’s market, on-street vendors and produce on pallets can provide access to healthy foods in the heart of downtown and near residential areas. They are also a great way to motivate entrepreneurs without capital expenditures. There is an opportunity for Virginia’s Eastern Shore to celebrate its agricultural and aquacultural history by featuring farmers markets in towns, near major employment centers and at schools. Featuring produce and fresh seafoods in towns celebrates the Shore’s history and rural charm. It also reduces the likelihood of food deserts: those areas that lack access to healthy foods because grocers have relocated out of the downtown and to a major transportation corridor accessible only by car.

Engage Residents in Finding Solutions

Effective community engagement is critical when developing policies and projects that impact a community's built form. Regardless of setting – whether urban, rural, large city or small town – the benefits of effective community engagement in projects affecting the built environment are numerous. Effective community engagement improves the success rates of policies and projects affecting the built environment. This is in large part because community engagement helps the agencies and organizations that are leading a project understand and respond to the local conditions that will influence the project's development. For example, agencies that create true community engagement are more successful at adapting to socioeconomic changes that may influence the effort than those that do not conduct effective outreach. Additionally, when people affected by the project are involved from the beginning of the development process, it reduces the likelihood of unexpected or significant opposition when it comes time to implement the project. Community members also have unique knowledge of local contexts - including political, cultural and geographic settings. By interacting with the public and gaining important local insight, project leaders can shape and direct the project in keeping with the community vision and needs.

A conventional model of “public involvement” has been built around complying with legal requirements for issuing public notices about projects and related events, holding public hearings to solicit feedback and incorporating feedback into draft recommendations. The community has been invited in when project leaders have decided input is needed - or when it is mandated by law - and the public hearings, advisory councils, and public comment sessions have formalized the effort. At many public meetings or events, the meeting structure communicates to people that they are to listen and not converse. This model fails to truly engage the public. To engage communities, leaders must move from the conventional model to one that focuses on outreach, capacity-building, inclusiveness and collaboration.

A successful public process starts with developing a community outreach plan that describes the desired outcomes of the project and details the public process, including who the stakeholders and audiences are, how they should be reached, messages, the tools that will be most effective, and how the success of the effort will be measured.



Effective community engagement is critical when developing policies and projects that impact a community's built form.



Health promoters are local liaisons recruited to bridge the gap between the community and active living program.



Additionally, efforts should be made to conduct workshops, events or meetings in places that are comfortable and familiar to the audiences, and to use language that is clear. Each communication or event should contribute to the public's understanding of the project and its purpose.

Specific outreach tools may include educational workshops, media outreach, paid advertising, surveys, print materials such as flyers and brochures, public service announcements, educational videos, slide presentations, charrettes, newsletters, websites and online communications, direct mail, letters to the editor or guest commentaries, councils, partnerships, coffeehouse chats, meetings, interviews, demonstrations, bulletin boards and more. The main point is that each of these elements has been identified and tied to other initiatives with outcomes and measures of success so that a quality control and effectiveness feedback loop is in place.

The goal is to engage the community. If the community is not engaged, initially, leaders must take responsibility for developing effective and successful outreach programs that achieves this identified goal. A civic engagement plan allows creators to look at localized efforts to build capacity within the community.

Build Cultural Competence

Ensuring that programs and messages are designed to be relevant, appropriate and effective in different cultures and different languages is important to any successful community outreach. In fact, cultural competence has emerged as a key strategy to improving health and the quality of health care and social services for everyone in the U.S. regardless of race, ethnicity, cultural background or language proficiency. Translating important messages requires strong cultural knowledge, because a word for word translation will not be effective. Reaching people of all backgrounds often requires more than simply translating messages.

To increase their effectiveness, many organizations working with multi-cultural populations are developing "health promoters" programs that recruit people who live in and work in a community to be community educators and liaisons between the program and the community. An example is the DeSoto County, Florida program Promotores/as de Salud that serves Hispanic farm workers. Other communities are working to culturally adapt messages. For example, in California's San Joaquin Valley, campaigns to encourage people to reduce their contribution to summertime smog were developed for English-speaking

and Spanish-speaking markets. The campaigns were culturally adapted to focus on types of behavior changes that would be relevant and appropriate in the cultural context of the different audiences. Adaptation of this type requires strong knowledge of the culture and language of the target audience.

Broaden the List of Stakeholders

To build effective community engagement, project leaders should broaden the list of stakeholders and partners whose involvement is sought. Stakeholders and partners commonly include town and county staff, advocacy groups, residents, business operators, property owners, elected officials, community leaders, neighborhood safety groups, school representatives, health agencies, “main street” or downtown groups, charitable non-profit organizations and regional employers. To be more effective, project leaders also should seek the early involvement of churches, news outlets, potential opposition groups and children. Now, more than ever, we identify community outside of geographical areas.

Churches - Across the country, churches build and sustain more social capital than any other type of institution. Thus, project leaders should seek innovative ways to work with church leaders to engage their membership in public projects.

Media - Conventional community outreach plans have treated the media as a means of simply disseminating information. A more effective approach is to engage members of traditional news outlets (newspaper, television and radio) and nontraditional outlets, or “new” media (online news services, bloggers), as stakeholders and seek their involvement early in the process. Just as project leaders should build capacity amongst residents and within the community, so too should they seek to build capacity with journalists and news outlets.

Opposition Groups - Special efforts should be made to identify and reach out to people and organizations that may be expected to oppose the project under development. It is important to build their trust and involvement. Try to identify and address their concerns both as part of the public process.

Children & Elders - Children and elders have much to offer in community planning and design processes, yet they remain mostly untapped throughout community transformation processes. A child’s imagination is a powerful tool; an elders knowledge inspiring. Together,



Children and residents care about the built environment and the experiences it allows. Broadening the list of stakeholders ensures better representation.





The goal is to approach engagement as a two way conversation so that consensus is reached through collaboration.



they often create solutions and engage others in a way that can change the whole tenor of the events.

Start with a Base of Shared Values and Build Understanding

The conventional model for public involvement in projects that affect the built environment often engages the public too late in the process, and in a manner that pits interests against each other. For example, holding a public hearing on a proposed project sets up stakeholders to take a position either for or against the project, without any discussion about community values and whether the project supports those values. A better model is to start the public process with educational workshops or visioning sessions that build a base of shared values. In some communities, a vision plan already exists and in those cases, the vision plan should help guide the project development. In other communities, a simple visioning exercise during a public workshop can go a long way toward helping stakeholders see that they generally want the same things for their community.

Approach Engagement as a Two-Way Conversation

Effective public engagement involves much more than telling people about a project. Rather, effective engagement actually facilitates a dialogue that leads to reciprocal learning, collaboration and – ideally – consensus. By engaging in reciprocal learning through the public process, project leaders will gain insight and perspective that can help them ensure the project is tailored to meet the community's needs. Community members also will learn from each other.

Support a Coalition of Community Associations and Resident Activists

A coalition of community-based groups, such as the Community Associations and Eastern Shore Healthy Communities, should organize a steering committee to represent the values and goals of the neighborhood, evaluate the recommendations of this report, prioritize efforts, and pursue funding for implementation. One of the working group's first tasks could be to reach out to faith-based groups, schools, residents and organizations to build capacity within the community. Because community is defined less by geographical boundaries and more by our habits and routines, this working group may need to reach outside of the annexed area, to organizations and groups that residents belong to, in order to meet neighbors. Eastern Shore Healthy Communities has a solid track record in this.

Take Them to the Streets

Be done with boring public-involvement meetings

When invited to participate in public processes, many people envision dreary meetings in stuffy settings where government employees give presentations on a subject, a project or a goal, and participants are then asked to take turns sharing their feedback.

Who can blame people for not showing up, if they didn't already have a strong interest in the topic? The conventional format for public-involvement processes sometimes is the only option, but in most cases it doesn't build community interest. In fact, it can be downright boring and it fails to capitalize on opportunities to build social capital through the process or engage people in reciprocal learning. Even workshop formats that aim to be more educational can fall short in efforts to build a shared understanding of the issues being addressed or to make participants feel truly engaged in the process.

Eastern Shore Healthy Communities overcame this challenge by facilitating Active Living Workshops on Virginia's Eastern Shore. Elected leaders, technical staff, residents, teachers, students, emergency responders and health professionals in Cape Charles, Exmore, Chincoteague and Onley-Onancock evaluated how supportive the built environment is for active transportation. By walking together and listening to concerns, the communities identified opportunities to create a more supportive infrastructure that allows aging-in-place and activity as a routine part of every day.

When people are taken outside of the classroom or presentation structure and are put in the actual context—such as for a walk along a street to evaluate the built environment—where they can converse freely and naturally with others, many shared interests and connections emerge.

This can foster partnerships that cross any existing real or perceived boundaries, such as differences in generation, culture, socioeconomic status or geography. We witnessed this on the Eastern Shore.



Above: During the Active Living Workshops on the Eastern Shore, participants noted the conflicting messages that pedestrians with visual impairments must overcome.

Below: During the Onley-Onancock workshop, participants noted the lack of pedestrian infrastructure.



Set Ground Rules for Facilitators

A safe, friendly meeting environment can help leaders achieve the planned meeting goals and objectives. Establishing ground rules that respect individual rights and responsibilities builds trust among participants and can lead to a successful meeting experience. It is frustrating and unproductive to participants and facilitator alike when opinions are not respected, persons are criticized, and many views are not expressed. Other terms that may be used interchangeably with ground rules include guidelines, group agreements, covenants or norms. In this publication the term ground rules applies to a set of rules that are usually developed at a first meeting and used by the facilitator to manage individual and group interaction.

Here are ground rules for leading a meeting addressing controversial issues.

For Group Members:

- One person speaks at a time when the group is in full session and not at breakout tables.
- All will share ideas in order.
- Questions may be asked to clarify ideas.
- No one may criticize another.
- Ideas may be reviewed to look for themes.
- Feelings may be expressed. They are not to be ignored or denied.
- Discussions are about positions, not personalities.

For the Facilitator:

- Make sure participants are physically comfortable.
- Share the covenants with participants at the outset of the meeting. Repeat the covenants and convey that by being part of the meeting, everyone is agreeing to the covenants.
- Communicate with everyone at his/her level.
- Act as the neutral person. Refrain from giving a personal opinion.
- Maintain a positive group atmosphere.
- Allow thinking time.
- Avoid: lengthy comments, giving verbal rewards for good answers, asking loaded questions or conveying a “know-it-all” tone.

The following guidance is provided by the University of Minnesota Extension’s publication, Facilitation Resources - Volume 4. The full publication is available at <http://bit.ly/wWsRUJ>.



Facilitators need to ensure everyone agrees to the covenants at the outset of the process, and that all voices are heard.



Do More than Translate: Build Cultural Competence

Ensuring that programs and messages are relevant, appropriate and effective in different cultures is important to any effort to conduct successful community outreach. But reaching people of all backgrounds requires more than simply translating messages.

Especially in rural communities, messages perceived to have been created by “outsiders” can actually do more harm than good by creating discomfort or mistrust. To increase their effectiveness, many organizations working with multi-cultural populations or in rural communities are developing programs to culturally adapt campaigns and messages.

For example, in California’s San Joaquin Valley, the Air Pollution Control District’s summertime smog-reduction campaigns encouraged people to change their behavior to be more air-friendly. The campaigns targeted multiple audiences from different cultural backgrounds, with the English-language campaign focusing on carpooling to reduce pollution. The strong cultural knowledge of staff and outside professionals helped project leaders understand that the Spanish-speaking target audience already carpooled as a standard practice. Thus, the Spanish-language campaign was adapted to focus on messages that were more meaningful to the audience: to drive less and keep the car tuned up.

Getting it Right

When culturally adapting messages, consider the following:

Language Doesn’t Equal Culture: Although a shared language is important to culture, people who speak the same language often are from different cultures. Be sensitive to the differences and develop appropriate messages.

Start with Strong Cultural Knowledge: Tap the knowledge of colleagues, in-house staff or consultants who live, work or grew up in the culture.

Get Feedback: Work directly with members of the audience to determine appropriate approaches. Use focus groups to screen messages before they are distributed.



The San Joaquin Valley [Calif.] Air Pollution Control District culturally adapted its summertime smog-prevention campaign to focus on the types of behavior changes that would be relevant to different cultures. The English campaign focused on carpooling, whereas the Spanish campaign focused on driving less and keeping the car tuned up. (Images: San Joaquin Valley Air Pollution Control District.)

Learn from Elders and Children

Abilities are valuable, but often overlooked

Design “charrettes” are indispensable tools for hammering out solutions to complex community design issues. Through a mix of public workshops, open houses and creative, intense design sessions, charrettes create a collaborative planning process that harnesses the talents and perspectives of residents, town planners, community leaders and public health officials alike.

In fact, getting all of the right people together for a design charrette is key to ensuring that the outcome reflects the values and goals of the community. People from all sectors of society with diverse backgrounds are needed at a charrette, including local government officials, planners and designers, landscape architects, transportation engineers, nonprofit managers and public health officials.

But even with engaged and motivated participants from all relevant backgrounds, the charrette still may be missing two very important groups that can provide valuable insight about how to design a community to be healthier and happier: elders and children. Children have much to offer in the community planning and design process, yet they remain mostly untapped throughout community transformation processes.

A child’s imagination is a powerful tool; they can dream up the perfect community in which to live, play and go to school. Beyond the power of their imaginations, they also can bring very practical solutions to the table. For example, children often are aware of shortcuts to the places they go that could be formalized into trails and added to the community’s pedestrian network.

Elder-child charrettes also help publicize the public process being undertaken and build social capital by bringing generations together. They foster collaboration among school representatives, local government staff and parents.

And involving elders and children in public processes can change the whole tenor of the events. Children very often speak readily about important values. Their honesty helps raise the discussion to the level of values and guiding principles. Elders bring a lifetime of observations and community history to share.



Above: Children often speak readily about important values - such as providing equipment that allows all children of all abilities the opportunity to swing.

Below: A children’s charrette in Glenwood, CA.



Simply asking a child the question, “What would you like to see on your walk to school and back?” can provide meaningful insight into the community that could be. The answers will capture community values, important street and sidewalk connections, playful aesthetics and other place-making elements that might be overlooked. This, combined with an elders perspective can yield surprising and beautiful results. The boundless imagination and colorful creativity of children combined with sage wisdom clarifies values quickly.

Planning a child-elder design charrette requires attention to several details that a standard charrette doesn’t require. Don’t let these details be a deterrent, though; the benefits far outweigh the added responsibilities.

Keep it Fun. The chief objective is to keep a charrette fun and engaging. Work with schools, parks and recreation departments, and parent/teacher associations to identify the best venue for engaging children and to conduct the needed outreach to ensure that children attend.

Make it Age Appropriate. Children of all ages can be tapped for their talent. For younger children, from kindergarten to 3rd grade, a successful charrette may only include a short walking audit, allowing them to point out things they like and don’t like along the way, and then returning to the workshop setting and drawing pictures that reflect their findings. They also can develop short skits or performances that describe the shortcomings they find in their existing environment and in the community they desire. The entire event might be only 30 to 45 minutes long. Students in the 4th grade and higher are better able to draw, photograph, interpret and explain their concerns. They can even use photography to create “photo voice” or poster presentations. Young teens can plot using trace paper and aerial maps. They often know what is missing from their neighborhoods, or where unleashed dogs, broken sidewalks and generally unsafe areas can be found.

Incorporate it Into the Larger Effort. Find ways to incorporate child-elder work into the larger charrette or community effort. If the primary children’s charrette takes place at school, make advance arrangements with teachers or parents to have the children present their designs or posters during the community charrette. Present their findings first, as this often warms up the audience and allows them to see how quickly and easily children “cut to the chase,” identifying what works and does not work. Also, consider whether it is appropriate and desirable to invite representatives of the news media to cover the children’s charrette. If so, work very closely with the school or parents to ensure appropriate permissions are obtained and privacy is respected.



Above, children vote during a charrette in Sacramento, CA. Below, an “inter-generational” walking audit in Morrow, GA.



Work Effectively With Others



Staff and residents are partners in community building

We work best with others when we feel as if we belong and that our contributions are valuable. Disruptive behaviors fall into two main categories: progress-blocking and group-thwarting. Progress-blocking actions interrupt processes and discourage next steps. Group-thwarting actions undermine the confidence and ability of the group to act cohesively. Successful groups watch for indicators of disruptive behaviors.

While the motives for disruptive behaviors are complex, unclear objectives are the biggest barrier to effective team performance. If disruptive behaviors are interrupting progress or undermining the confidence of the group, it is time to discuss this as a group. All discussions and deeds should be examined for how they lead to the group's stated goals. When a disagreeable comment is made, the group should ask, "What is the desired outcome of that statement?" or "How does this conversation lead us to our goal?"

Behaviors that Block Progress

- Confrontational instead of cooperative approaches
- Attacking a person rather than a problem
- Engaging in gossip, clique-forming or other power-seeking activities
- Excessive talking, loud voices or otherwise dominating a conversation
- Speeches rather than discussions
- Allowing ultimatums to be made
- Constantly joking, clowning or making sexually-charged remarks
- Silence or failing to engage others
- Attention- or sympathy-seeking behaviors
- Failure to disclose interests or conflicts
- Dismissive or denial-seeking behaviors
- Arguing
- Presenting only one side of a topic
- Departing from the topic regularly
- Introducing unnecessary, anecdotal or tangential information
- Revisiting tasks that the group agrees are complete
- Showing an inability to transition from task to task or set next steps
- Advocating ideas without actions
- Failing to complete assignments on time
- Not communicating successes or failures
- Not tying actions to goals or next steps
- Being unkind, unsupportive or mean-spirited

Share Successes

The Eastern Shore has motivated organizations working at the local level, such as Eastern Shore Healthy Communities. Digital storytelling engages the community more than traditional documentation and is a good tool to consider.

To help effectively convey existing conditions, try digital storytelling. Create a presentation that uses images, video or graphics to show in a compelling way why changes are needed in a particular area.

Although videos and graphically rich presentations are great tools, they can be difficult for people not trained to do them. A simpler idea is to create a Power Point or other type of user-friendly presentation with digital images you capture yourself. To help you get started, Eastern Shore Healthy Communities has created a video that shares the Active Living Workshop story. This video captures each workshop and the recommendations from this technical report. Additionally, each community has access to the PowerPoint presentations that explain the principles of walkability and why walkability matters. Patti Garvin Kiger from Eastern Virginia Medical School is your point of contact for all educational materials. She can be reached at: kigerpg@evms.edu and (757) 668-6442.

Key points to keep in mind as you share successes are as follows:

- Determine the purpose of the presentation. Is it to show town staff that there is a safety issue? Is it to convince homeowners to support a roadway project? Is it to engage local business as stakeholders? Consider what messages and images will resonate with the intended audience.
- Carry your camera everywhere for a while. You need a variety of images and you never know when the perfect picture to document a particular concern will emerge.
- Avoid staging pictures. Be authentic. But by the same token, don't be afraid to use your friends and family in pictures. You spend more time with them than anyone else and so you're likely to be able to get pictures of conditions affecting them. Also, they



Eastern Shore Healthy Communities documented the Active Living Workshop by video. This technical report and PowerPoint presentations are also available. Contact Patti Kiger for additional information.



Walkability: Making the Case
Walkable and Livable Communities Institute



Capturing existing conditions through photography helps to explain safety concerns and represent the community.



are your reason for doing this work, so it's appropriate to let that concern for them come through in your presentation. And if it's important to document something but it would be dangerous to do so without staging it, then by all means stage it, but disclose that fact in the presentation.

- Use Google Earth (download it for free) to get an aerial view of the “study area.”
- Use PowerPoint or a similar presentation program to put the images in order and put labels on them. Although it's ideal to be able to deliver your presentation in person, expect that it may also be viewed on its own, so it has to be self-explanatory. Consider using free or low-cost online tools such as social media or slide-sharing services to disseminate your presentation to multiple audiences.
- Be transparent and share your agenda. Let people know why you're so interested in the project. Whether for the health and safety of your family, for business or economic reasons or to simply make your community a more enjoyable place, include that in the presentation.
- Build the presentation the way you would tell a story.
 1. First, tell the story of the community or neighborhood in the way you understand it. If you're not an engineer or planner, you're not expected to communicate like one. Explain things in a comfortable way.
 2. Start by describing the context and explaining what the neighborhood is like, who lives there, and what the various land uses are. This gives the audience a sense of the community character.
 3. Explain the problem. You don't need to be an expert in traffic operations to be able to point out that cars are moving too quickly for you to feel comfortable letting your children walk to the playground, or riding your bike to the store.
- Use images that document the things that make you feel unsafe or disconnected. Use statistics as appropriate.

Take the 100-Day Challenge

How Does Change Happen?

A project is more likely to succeed if motivated individuals set a course to accomplish their goals immediately. Early successes provide the hand- and toe-holds needed to pull the group from one achievement to the next.

The 100-Day Challenge sets goals that can be accomplished within 100 days to show a genuine commitment to active living. All change begins by asking one question: What can I do? Each of us shapes the built environment we find ourselves in, either through active participation in decision making, or by leaving decisions up to others.

Quality of life is directly affected by the quality of the built environment, especially the completeness of our transportation systems. Streets are attractive and safe for all users, or they are not. Streets encourage a variety of transportation options, including walking and bicycling, or they limit choices. And your community either encourages aging in place or contributes to social isolation.

- You recognize that what you are doing is not working
- You form a group to generate ideas, build support and learn
- The group sets a vision and the mission, goals and tasks to support this vision
- You share this vision with others, along with the specific goals and tasks that guide activities
- You do something and you encourage others to do something
- You share your successes with others and this motivates them
- Encouraged that change is possible, others join the group in moving the movement
- You refine your mission, goals and tasks to keep them current

In his book *Leading Change*, Professor John Kotter identifies eight steps for effecting change, provided on the following page.

The Significance of 100 Days

Focusing on a 100-day action plan allows you to accomplish the following:

- Identify critical concerns and prioritize them
- Motivate others with reasonable goals and tasks
- Ensure that milestones are met
- Keep the group motivated
- Build confidence with early wins
- Confirm that you are working with the right people
- Build on successes
- Schedule review and refinement of mission, goals and tasks

Eight-Step Process for Leading Change¹

Step 1:	Establishing a Sense of Urgency Identify and discuss crises, potential crises or major opportunities
Step 2:	Creating the Guiding Coalition Assemble a group with enough power to lead the change effort Encourage the group to work as a team
Step 3:	Developing a Change Vision Create a vision to help direct the change effort Develop strategies for achieving that vision
Step 4:	Communicating the Vision Use every vehicle possible to communicate the new vision and strategies Teach new behaviors by the example of the Guiding Coalition
Step 5:	Empowering Broad-based Action Remove obstacles to change Change systems or structures that seriously undermine the vision Encourage the risk-taking and nontraditional ideas, activities, and actions
Step 6:	Generating Short-term Wins Plan for visible performance improvements Create those improvements Recognize and reward [those] involved in the improvements
Step 7:	Never Letting Up Use increased credibility to change systems, structures and policies that don't fit the vision Hire, promote, and develop [those] who can implement the vision Reinvigorate the process with new projects, themes, and change agents
Step 8:	Incorporating Changes into the Culture Articulate the connections between the new behaviors and organizational success Develop the means to ensure leadership development and succession

The following conditions help determine an active living project's success:

- **Leadership:** Leaders who inspire collaboration to identify and accomplish goals.
- **Motivated Teammates:** Individuals with a can-do spirit who are eager to work together.
- **Actionable Strategies:** Identification of the tasks in support of a goal, with individuals to take on specific tasks and a time frame for completion;
- **Early Successes:** Projects that allow for immediate successes to keep the group motivated and to build confidence.

Share the Facts: Active Living on the Eastern Shore

Obesity and Disease¹

The following statistics speak to adult health in Virginia²:

- 70 percent of adults are overweight, with 33 percent obese
- 76 percent get less than five servings of fruits and vegetables per day
- 12 percent have been diagnosed with type II diabetes
- 42 percent have arthritis
- 40 percent have high cholesterol
- 36 percent have high blood pressure
- 32 percent report no physical activity within the past 30 days
- 23 percent report some disability
- 22 percent smoke
- 24 percent lack health care coverage
- 20 percent live in poverty
- 13 percent could not see a doctor due to cost

- The costs of obesity account for approximately nine percent of total U.S. health care spending.
- The total economic cost of obesity is \$270 billion per year.
- Two out of three American adults 20 years and older are overweight or obese.
- It is estimated that 75 percent of American adults will be overweight or obese by 2015.
- Childhood obesity has more than tripled in the past 30 years.
- In 2010, 10.9 million or nearly 27 percent of U.S. residents age 65 or older had diabetes.
- About 1.9 million people age 20 years or older were newly diagnosed with diabetes in 2010. Diabetes is the seventh leading cause of death in the United States.

2010 State Obesity Rates³

State	%	State	%	State	%	State	%
Alabama	32.2	Illinois	28.2	Montana	23.0	Rhode Island	25.5
Alaska	24.5	Indiana	29.6	Nebraska	26.9	South Carolina	31.5
Arizona	24.3	Iowa	28.4	Nevada	22.4	South Dakota	27.3
Arkansas	30.1	Kansas	29.4	New Hampshire	25.0	Tennessee	30.8
California	24.0	Kentucky	31.3	New Jersey	23.8	Texas	31.0
Colorado	21.0	Louisiana	31.0	New Mexico	25.1	Utah	22.5
Connecticut	22.5	Maine	26.8	New York	23.9	Vermont	23.2
Delaware	28.0	Maryland	27.1	North Carolina	27.8	Virginia	26.0
District of Columbia	22.2	Massachusetts	23.0	North Dakota	27.2	Washington	25.5
Florida	26.6	Michigan	30.9	Ohio	29.2	West Virginia	32.5
Georgia	29.6	Minnesota	24.8	Oklahoma	30.4	Wisconsin	26.3
Hawaii	22.7	Mississippi	34.0	Oregon	26.8	Wyoming	25.1
Idaho	26.5	Missouri	30.5	Pennsylvania	28.6		

Safety⁴

- In 2009, 33,963 people were killed in traffic-related incidents in the U.S.
- Between 2000 and 2009, 47,700 pedestrians were killed by automobiles.
- Although people age 65 and older made up less than 13 percent of the total U.S. population between 2000 and 2007, they represented nearly 22 percent of pedestrian deaths during that period.
- The oldest pedestrians (75 years and older) suffered from pedestrian fatality rates of 3.61 per 100,000 people, a rate well more than twice that for people under 65 years of age.

Air Quality⁵

- Asthma is a major public health problem in the United States with 22 million people currently diagnosed with asthma—12 million of whom have had an asthma attack in the past year.
- Seven percent of adults and nearly nine percent of all children have asthma. In poor and minority communities, the rates are higher.
- People living within 300 meters of major highways are more likely to have asthma, leukemia and cardiovascular disease.
- The health costs associated with poor air quality from the U.S. transportation sector is estimated at \$50–\$80 billion per year.

Mental Health⁶

- Americans spend an average of 100 hours per year commuting.
- Higher rates of physical activity are associated with reduced risk of depression, while physical inactivity is a known risk factor for depression.
- Since 2000, antidepressants have become the most prescribed medication in the United States.

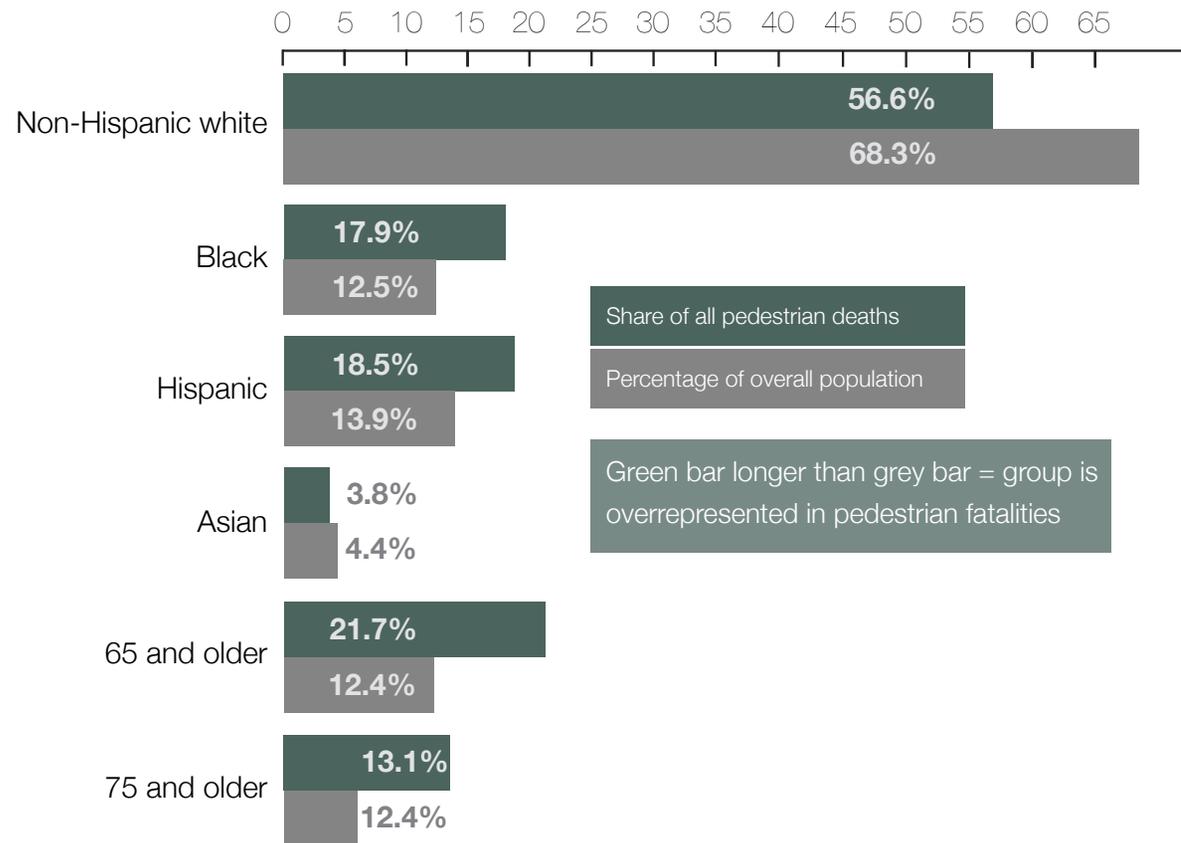
The following statistics speak to children's health in Virginia⁷:

- 24 percent of children are overweight or obese
- 64 percent of children are on a free or reduced meal program
- 92 percent report drinking soda, eating chips and eating candy more than once per week
- 88 percent do not meet daily targets for fruits and vegetables
- 34 percent do not meet the physical activity targets
- 16 percent report playing video games for more than 3 hours per day
- 26 percent report watching television for more than 3 hours per day
- Teen births are double the state-wide average
- 24 percent of homes have a single, female head of household

Percentage of pedestrian deaths compared to share of population⁸

Social Equity⁹

- Older populations are over-represented in intersection fatalities by a factor of more than two-to-one.
- Half of all non-drivers age 65 and over—four million Americans—stay at home on a given day because they lack transportation.
- By 2015, more than 15.5 million Americans age 65 and older will live in communities where public transportation options are minimal or nonexistent.
- Transportation is the second largest expense for American households, costing more than food, clothing and health care. Americans spend an average of 18 cents of every dollar on transportation, with the poorest one-fifth of families spending more than double that figure.
- States with the least leisure-time activity were Alabama, Kentucky, Louisiana, Mississippi, Oklahoma and Tennessee. States with the most were California, Colorado, Hawaii, Minnesota, Oregon, Vermont and Washington.



Research Funding Sources for Active Transportation¹

BICYCLE/PEDESTRIAN FUNDING OPPORTUNITIES

Project type	NHS	STP	HSIP	SRTS	TEA	CMAQ	RTP	FTA	TE	BRI	402	PLA	TCSP	JOBS	FLH	BYW
Bicycle and pedestrian plan		•				•						•	•			
Bicycle lanes on roadway	•	•	•	•	•	•		•	•	•					•	•
Paved shoulders	•	•	•	•	•	•				•					•	•
Signed bike route	•	•		•	•	•									•	•
Shared use path/trail	•	•		•	•	•	•								•	•
Single track hike/bike trail							•									
Spot improvement program		•	•	•	•	•										
Maps		•		•		•					•					
Bike racks on buses		•			•	•		•	•							
Bicycle parking facilities		•		•	•	•		•	•							•
Trail/highway intersection	•	•	•	•	•	•	•								•	•
Bicycle storage/service center		•		•	•	•		•	•				•	•		
Sidewalks, new or retrofit	•	•	•	•	•	•		•	•	•					•	•
Crosswalks, new or retrofit	•	•	•	•	•	•		•	•						•	•
Signal improvements	•	•	•	•	•	•										
Curb cuts and ramps	•	•	•	•	•	•										
Traffic calming		•	•	•									•			
Coordinator position		•		•		•							•			
Safety/education position		•		•		•					•					
Police patrol		•		•							•					
Helmet promotion		•		•	•						•					
Safety brochure/book		•		•	•	•	•				•					
Training		•		•	•	•	•				•					

BICYCLE/PEDESTRIAN FUNDING OPPORTUNITIES KEY²

NHS	National Highway System	http://www.fhwa.dot.gov/planning/nhs/
STP	Surface Transportation Program	http://www.fhwa.dot.gov/safetealu/factsheets/stp.htm
HSIP	Highway Safety Improvement Program	http://safety.fhwa.dot.gov/hsip/
SRTS	Safe Routes to School Program	http://safety.fhwa.dot.gov/saferoutes/
TEA	Transportation Enhancement Activities	http://www.fhwa.dot.gov/environment/te/index.htm
CMAQ	Congestion Mitigation/Air Quality Program	http://www.fhwa.dot.gov/environment/air_quality/cmaq/index.cfm
FLH	Federal Lands Highway Program	http://www.flh.fhwa.dot.gov/
BYW	Scenic Byways	http://www.fhwa.dot.gov/hep/byways/index.htm
BRI	Highway Bridge Program	http://www.fhwa.dot.gov/bridge/hbrrp.htm
402	State and Community Traffic Safety Program	http://safety.fhwa.dot.gov/policy/section402/
PLA	State/Metropolitan Planning Funds	http://www.fta.dot.gov/grants/13093_3563.html
TCSP	Transportation, Community and System Preservation Pilot Program	http://www.fhwa.dot.gov/tcsp/index.html
JOBS	Access to Jobs/Reverse Commute Program	http://fta.dot.gov/grants/13093_3550.html
RTP	Recreational Trails Program	http://www.fhwa.dot.gov/environment/rectrails/index.htm
FTA	Federal Transit Capital, Urban & Rural Funds	http://www.fta.dot.gov/grants_263.html
TE	Transit Enhancements	http://www.fhwa.dot.gov/environment/te/te_provision.htm

FUNDING SOURCES AND POTENTIAL PARTNERS CHECKLIST³

Date Contacted	Agency	Website
	Health Department	http://www.apha.org/about/Public+Health+Links/LinksStateandLocalHealthDepartments.htm http://www.naccho.org/toolbox/
	Main Street Program	http://www.preservationnation.org/about-us/partners/
	Chamber of Commerce	http://www.uschamber.com/chambers/directory/default
	Community Foundations	http://www.cof.org/whoweserve/community/resources/index.cfm?navItemNumber=15626#-locator
	Local and State Elected Officials	http://www.capwiz.com/apha/dbq/officials/
	Transportation Enhancement Funding by State	http://www.enhancements.org/Links.asp#statedot
	State Bike and Pedestrian Coordinator	http://www.walkinginfo.org/assistance/contacts.cfm
	State Safe Routes to School Coordinator	http://www.saferoutesinfo.org/program-tools/find-state-contacts
	American Public Health Association	http://www.apha.org/advocacy/priorities/issues/transportation
	Federal Highway Administration Bicycle and Pedestrian Program	http://www.fhwa.dot.gov/environment/bikeped/
	Federal Highway Administration State Manual	http://www.fhwa.dot.gov/planning/statewide/manual/manual.pdf
	Department of Housing and Urban Development CBDG	http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs
	Partnership for Sustainable Communities (DOT, HUD, EPA)	http://www.sustainablecommunities.gov/
	Centers for Disease Control and Prevention	http://www.cdc.gov/transportation/docs/FINAL%20CDC%20Transportation%20Recommendations-4-28-2010.pdf
	AARP Livable Communities	http://www.aarp.org/home-garden/livable-communities/
	Active Living By Design	http://www.activelivingbydesign.org/
	Alliance for Biking and Walking Resources	http://www.peoplepoweredmovement.org/site/index.php/members/members3/C258
	America Bikes	http://americabikes.org
	America Walks Resources	http://americawalks.org/resources/links
	Association of Pedestrian and Bicycling Professionals	http://www.apbp.org/
	Complete Streets Coalition	http://completestreets.org
	League of American Bicyclists	http://www.bikeleague.org/
	National Center for Bicycling and Walking	http://www.bikewalk.org/
	Partnership for a Walkable America	http://www.walkableamerica.org/
	Safe Communities	http://safecommunitiesamerica.org/
	Smart Growth America	http://www.smartgrowthamerica.org/about/our-coalition/
	Transportation for America	http://t4america.org



Virginia's Eastern Shore has a rich history to celebrate in all planning and design decisions. Galleries, museums, natural beauty, great food and caring neighbors are hallmarks of Virginia's Eastern Shore.

Virginia's Eastern Shore is characterized by historic towns, stunning natural areas, wonderful seafood and opportunities for outdoor recreation. It is a special place. But the Eastern Shore is also home to health indicators and disparities that are not acceptable. As Eastern Shore Healthy Communities considers its next steps, the opportunities that emerged from the 2012 Active Living Workshops are as follows:

Coordination: A coordinating agency is needed to address built environment challenges in towns and regionally. Given the skills present within Eastern Shore Healthy Communities and the span of agencies represented, it is a natural fit to be that "missing link," keeping all communities apprised of opportunities to improve health and well-being on the Eastern Shore. The region's success is dependent on coordination across 21 governments that function at the local and county level. Identifying a partner to assist in coordination is a win for all.

Plan Review: The 2035 *Regional Long-Range Transportation Plan* for the Eastern Shore prioritized list of improvements should be evaluated for concurrency with the facilities identified in the 2011 *Eastern Shore of Virginia Bicycle Plan*. A letter from Eastern Shore Healthy Communities to VDOT and the Accomack-Northampton Planning District Commission should indicate those immediate opportunities for active transportation infrastructure to be included in planned improvements.

Support One Another: Once the prioritized project lists have been compared, Eastern Shore Healthy Communities can assist with grant applications for funding matches, educational campaigns and civic engagement processes. Being neighborly should be a hallmark of the Eastern Shore and this extends across departments, agencies and town limits.

Look for Opportunities: The Eastern Shore is not alone in its desire to improve health indicators and reduce health disparities. AARP, Rails to Trails Conservancy, the Federal

Emergency Management Agency (FEMA), Rail Corridor Owner(s), Rail Operator(s) and the Virginia Department of Emergency Management (VDEM) should be invited to discuss opportunities on the Eastern Shore. U.S. Route 13 is the only evacuation route on the Eastern Shore. The dual rail corridor that extends from Cape Charles to Maryland has a 66 foot right of way and a single track. Converting this “coal road” to a rail plus trail corridor would solve many challenges on the Eastern Shore and assist with disaster preparedness and resiliency.

Communicate Success: Eastern Shore Healthy Communities should share the findings and recommendations in this report. Meeting with the Accomack-Northampton Planning District Commission and VDOT for an evaluation of these recommendations makes good sense.

As you make land use and transportation decisions locally, ask one another how those choices encourage healthy people and healthy places. The Eastern Shore is too precious to be considered a pass-through. U.S. Route 13 functions as the spine of Virginia’s Eastern Shore and a unified wayfinding plan that includes gateway treatments and signage will reinforce the Eastern Shore as a destination. Additionally, U.S. Route 13 can provide visual cues to motorists that they are entering or skirting downtowns through street and intersection design treatments that encourage livability. This matters as residents do live with the impacts of U.S. Route 13 daily and so it must balance community-needs with transportation demand. Connected trails and infrastructure to support all modes will provide significant return on investment and become one of the Shore’s greatest income generators to date. This has been demonstrated in many communities and especially along North Carolina’s Outer Banks. By building infrastructure to encourage activity, residents have year-round amenities that support their health, well-being and ties to their community. Those very same amenities reinforce Virginia’s Eastern Shore as an authentic destination by encouraging visitors to stroll downtown and bicycle between communities. Trails, bicycle facilities, sidewalks, safer streets and intersection treatments honor the history of Virginia’s Eastern Shore by keeping small towns intact and connected. They also demonstrate a commitment to building a healthy, economically vibrant region that supports residents for life.



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Appendix