

Virginia Beach, VA SDAT

Envisioning a model community for our nation's sustainable future

A SUSTAINABLE DESIGN ASSESSMENT TEAM
FINAL REPORT

September 14 - 16. 2009



VIRGINIA BEACH, VA SDAT:

Envisioning a model community for our nation's sustainable future

SDAT TEAM MEMBERS

Wayne Feiden, FAICP- Team Leader

Aaron Helfand- Visioning

Susan Hickey, AIA- Urban Design

Matt Mayrl- Green Economy

Michael McGrath, AICP- Agriculture

Keith Wilson- Transportation

Erin Simmons- AIA Center for Communities by Design

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PROJECT BACKGROUND



PROJECT BACKGROUND

The City of Virginia Beach and the Virginia Beach City Public Schools are both initiating steps to build a more sustainable community. Last year, Virginia Beach became a Virginia Municipal League Green Certified Community in recognition of its work to implement “environmental policies and practical actions that not only reduce carbon emissions, but can save local governments money.”



The City of Virginia Beach wants to create a more coherent framework for their sustainability efforts. As part of this effort, in November 2008 the City submitted a proposal to the American Institute of Architects (AIA) for a Sustainable Design Assessment Team (SDAT) to assist its citizens in addressing key issues facing the community. These issues included land use planning, housing affordability, energy, transportation, and economic development opportunities. The City wanted an SDAT to inform their sustainability strategic planning and their comprehensive planning.

The AIA accepted the proposal and, after a preliminary visit by a small group in May, 2009, the full team of SDAT members arrived in Virginia Beach on September 14, 2009. For three days, the team members, working closely with local officials, community leaders, technical experts, and citizens, studied the community and its concerns. During those three days, the team came to understand the issues and used their expertise to frame a wide range of recommendations, which were presented to the community in a public meeting on September 16, 2009.



This report is a more detailed version of the background, findings, and recommendations that were presented to the community. This report focuses on:

- Urban Design
- Agriculture
- Transportation
- Green Economy

A closing section offers some thoughts on how the community can best move forward to address the range of issues and recommendations covered in the report.



WHAT IS THE SDAT PROGRAM?

The SDAT program is an interdisciplinary community assistance program that focuses on principles of sustainability. Launched in 2005, the program represents an exciting new chapter in the AIA's history of supporting communities with volunteer design expertise.

The SDAT program is modeled on the AIA's R/UDAT (Regional and Urban Design Assistance Team) program. While the R/UDAT program provides communities with specific design solutions, the SDAT program provides broad assessments to help frame future policies or design solutions in the context of sustainability and helps communities plan the first steps of implementation. The SDAT program is based on an understanding of design as a process that

- Is integrative, holistic, and visual
- Is central to achieving a sustainable relationship between humans, the natural environment, and the place
- Gives three-dimensional form to a culture and a place
- Achieves balance between culture, environment, and economic systems.

The SDAT program is grounded in the AIA design assistance team values, which call for a multidisciplinary approach, objectivity of the participating team members, and broad public participation.

The key to SDAT success is diversity and participation; the process involves multiple disciplines and multiple stakeholders. The SDAT process includes not only the expert team but also government agencies and officials, private businesses, schools and students, community members, and other parties as appropriate.

On behalf of the Virginia Beach SDAT Team and the American Institute of Architects, it is hoped this report will be a useful guide to the Virginia Beach community as it charts its future for the coming years and for coming generations.



PROJECT BACKGROUND

WHAT ARE SUSTAINABILITY AND THE TRIPLE BOTTOM LINE?

There are many definitions of sustainability. Type “sustainable development” into Google and you get millions of hits. Everyone wants sustainability; it’s become the new buzz word. Sustainability is the new black. Unfortunately, sustainability is so overused that sometimes it means nothing.

One of the most commonly used definitions of sustainability in both the United States and around the world was developed by the UN World Commission on Environment and Development (also known Bruntland Commission) in 1983: “Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

For many years, investors, companies and theorists have suggested that financial performance, especially within a short time frame, is not sufficient to measure the success of a company or any public or private entity. In 1994, John Elkington coined the term “Triple Bottom Line” (TBL). The Triple Bottom Line is measured by financial, ecological and social performance.

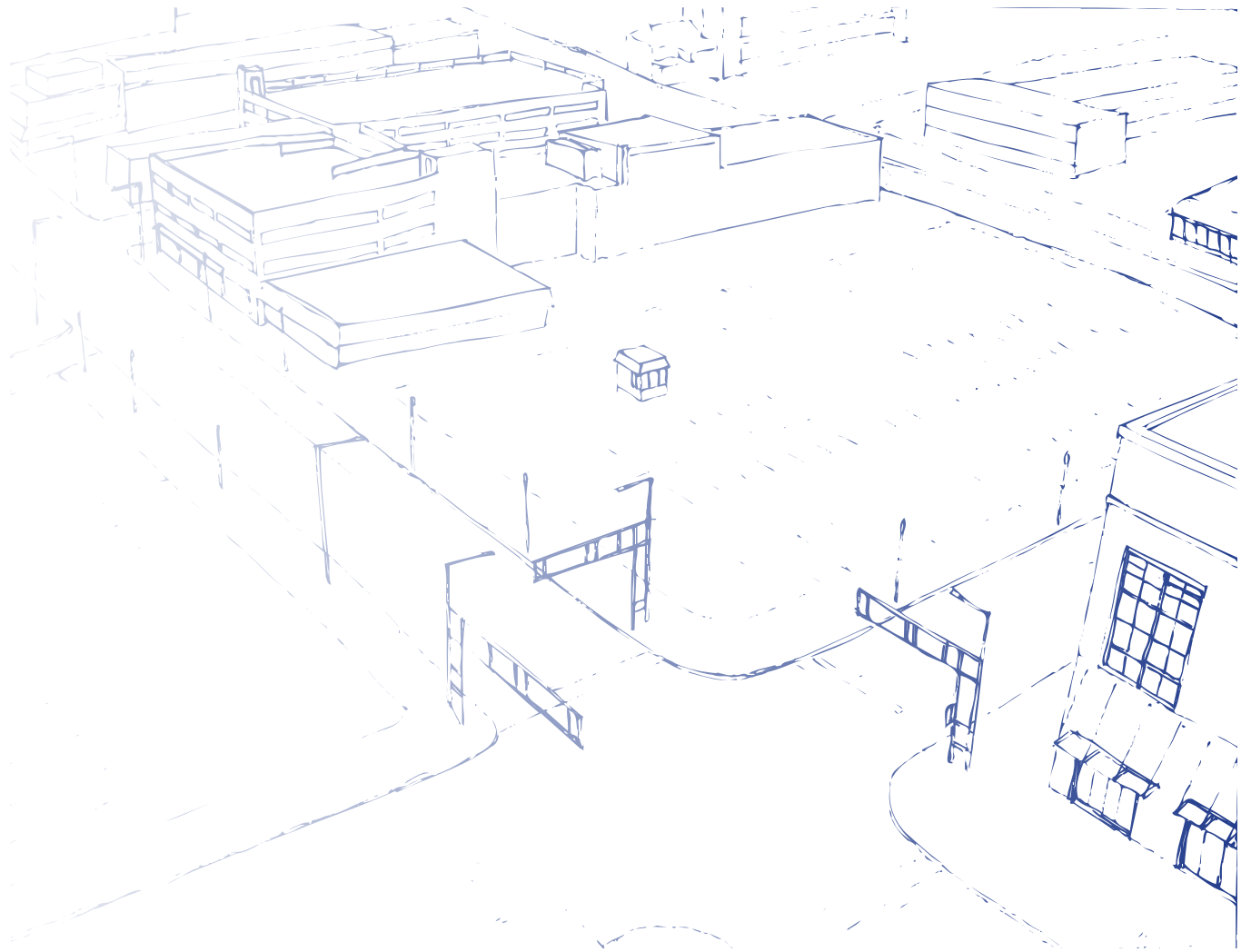
Individual actions that are typically referred to as sustainable are all critically important (e.g., green buildings, recycling, water conservation, land use patterns, healthy downtowns, healthy communities, jobs, balanced budgets, and equitable opportunity for all). Sustainability, however, involves a more holistic balancing and combining of three equally important goals, the “three Es” or the “three Ps.”

1. **Environment or Planet:** Conserving natural systems and minimizing ecological impacts. This is not a do-not-touch preservation concept but a conservation concept. Sustainable practices mean working with natural systems in a way that supports human activities while allowing the natural systems to serve future generations. For many, “environment” includes both the natural environment and those aspects of the built environment that are important to preserve for future generations. Since it is inevitable that human activities will harm some natural systems, mitigation of such inevitable harm is part of sustainable practices.
2. **Equity or People:** Focusing on people and communities and their needs. This does not mean that every action benefits all people, which is an impossible goal. Sustainable practices mean that we consider the needs of all our communities in our actions and ensure that overall we are having a positive impact on our communities, especially including diverse populations, sub-communities, and impacted communities.
3. **Economy or Prosperity/Profit:** Creating a vibrant economy through the creation of wealth, prosperity, and jobs. Balancing short term economic gains with the other two E’s or P’s creates a long term vibrant economy, ensuring prosperity and profit for our cities, our businesses, and our people.

This sustainable and holistic systems approach helps create and maintain great and sustainable cities.



KEY FINDINGS & EXECUTIVE SUMMARY



KEY FINDINGS & EXECUTIVE SUMMARY

Virginia Beach is making excellent strides towards sustainability in some key areas and is already a leader and role model in several fields. In a number of ways, however, Virginia Beach lags behind many of its peer cities. Virginia Beach has the opportunity to eventually become a regional, if not national, model of sustainability if it is willing to make the necessary commitments and investments to ensure its long term future. The SDAT process began with a look at Virginia Beach's sustainability efforts and successes, and then moved on to its challenges and opportunities.

STRENGTHS: ENVIRONMENT AND PLANET

- Virginia Beach's beaches, shoreline, estuaries and shellfish beds are healthier than they have been in years and there is an active and engaged public supporting further improvements. Groups such as Lynnhaven River NOW (an advocacy and education non-for profit formed in 2003), the US Fish and Wildlife Service (which manages the 9,000 acre Back Bay National Wildlife Refuge), the US Department of Defense, and others work with the City in partnership to improve these resources.
- Many of Virginia Beach's national accolades are awarded because of the environment (e.g., 10 Best Places to Grow Up, 10 Greenest Places to Retire, 6th Best Outdoors City, Top 10 Fittest Cities in America).
- Virginia Beach is a national leader in municipal efforts to preserve farmland in an urban area. The City currently holds agricultural conservation easements on 8,000 acres of farmland, and continues to purchase additional easements. In conjunction with Virginia Beach's Green Line, a zoning and infrastructure urban growth boundary, much of the southern portion of the city ("county") is protected as a working landscape.
- Virginia Beach restaurants have increasingly focused on local and organic food, sources, adding to the support for local farming and creating a distinctive appeal to those restaurants.
- Virginia Beach has great federal, state, and city park and recreation resources.
- The Virginia Beach City Council approved a climate protection agreement (2008).
- The Virginia Municipal League designated Virginia Beach a "Certified Green Community" in 2008.
- Both the City of Virginia Beach and the Virginia Beach City Public Schools system have committed that all new and renovated buildings above certain thresholds will be LEED certified.
- Virginia Beach City Public Schools have instituted a number of green practices in their daily operations and incorporated sustainability into their curriculum.
- Virginia Beach is moving forward to purchase former railroad right-of-way, the first step towards a long term light-rail line.
- Virginia Beach has developed a strong, albeit discontinuous, recreation bicycle and multi-use trail system.



STRENGTHS: ECONOMY AND PROSPERITY

- Virginia Beach acknowledges that sustainability must include a healthy economy. The Brookings Institute recently rated Virginia Beach as one of the top 20 economic performing Metropolitan Statistical Areas (MSAs) in the 2008-2009 recession, a sign of a recession resistant economy.
- A one billion dollar off-shore wind farm is in the feasibility and planning phases. Although it faces enormous hurdles (primarily financial), there is broad community and government support for its development.
- Virginia Beach is working to leverage the possible wind farm to attract alternative energy manufacturers as well as green jobs in general.
- Standard & Poors gave the City of Virginia Beach their highest possible bond rating, AAA. This is an indication of an economically sustainable local government and strong local tax base. Virginia Beach's relatively low property taxes make the community affordable while simultaneously providing a margin of safety for any future economic downturn.
- Virginia Beach and the state have made a strong financial commitment to retain the Naval Air Station Oceana by purchasing a buffer and removing incompatible development. Although the long term future of NAS Oceana is uncertain, its loss would not be for lack of local proactive steps.
- The City has identified eight Strategic Growth Areas as perfect sites for redevelopment and expansion. Six of them are located along a likely future light rail backbone.



STRENGTHS: EQUITY AND PEOPLE

- Many citizens serve as community volunteers, including what is reported to be the largest volunteer Emergency Medical Services program in the US, which is especially impressive given the somewhat transient nature of a substantial percentage of the workforce.
- The City has highly knowledgeable and committed municipal staff.
- There are highly knowledgeable and committed local design and environmental communities (both private sector and not-for-profit/NGO)
- Virginia Beach is developing a pattern book of Virginia Beach housing to help residents understand the character defining features of their neighborhoods in order to build upon those features with future development.
- Citizens and government officials have a strong understanding of the imperative need for regional approaches, especially given the regional water supply, transportation networks, and large regional employers.
- Virginia Beach schools are providing strong sustainability education, through both bricks and mortar projects and in the classroom curriculum.

CHALLENGES

In spite of Virginia Beach many sustainability successes, it clearly has opportunities to make major improvements within its sustainability program and initiatives. SustainLane Media, an oft-cited national assessment of municipal sustainability (SustainLane.com), lists Virginia Beach 45th of the 50 largest US cities for sustainability efforts. Their information on local conditions and methodology can be both limited and erroneous (we especially quibble with their low ratings for "Local Food and Agriculture" and "City Innovation", areas where Virginia Beach is a clear leader); nonetheless, many of SustainLane's findings are relevant and help identify some of the opportunities.

KEY FINDINGS & EXECUTIVE SUMMARY

SustainLane Media Rankings	
Category	Rank (of 50 largest US cities)
City Commuting	47th
Metro Transit Ridership	34th
Metro Street Congestion	12th
Energy & Climate Protection	Not rated
City Innovation	Not rated
Knowledge Base & Communications	Not rated
Green Economy	48th
Housing Affordability	26th
Local Food & Agriculture	49th
Green (LEED) Building	35th
Planning & Land Use	37th
Water Supply	16th
Solid Waste Diversion	Not rated
Water Quality	Not rated
Air Quality	6th
Natural Disaster Risk	37th
OVERALL RATING	45th

Smarter Cities, a project of the Natural Resources Defense Council and another frequently referenced national assessment of municipal sustainability and smart growth, uses different measurement tools and a more nuanced approach. They rank Virginia Beach overall 43rd out of the 67 US cities with populations of 250,000 or more, but third in standard of living. Like SustainLane, these scores are limited in their accuracy and open to interpretation. Green space, for example, is based on resident's perceptions. Most residents, however, are probably unaware of the large amount of national wildlife refuge land and permanently protected farmland and consequently, Virginia Beach should score higher in the open space category.

Smart Cities NRDC Rankings	
Category	Rank (of 67 US cities with population over 250,000)
Air Quality	48th
Environmental Standards and Participation	42nd
Green Building	37th
Green Space	37th
Recycling	41st
Renewable Energy	36th
Production and Conservation	
Transportation Options Available	41st
Standard of Living	3rd
Water Quality and Conservation	27th
OVERALL RANKING	43rd

For all the inherent limits of these scoring systems, the rankings are useful in terms of identifying opportunities that Virginia Beach's peer cities have capitalized on. Creation of the proposed off-shore wind farm, for example, would obviously dramatically improve the City's energy sustainability.

For many Virginia Beach residents, "Virginia Beach is primarily a suburban community", albeit a suburban community with many urban features and 436,000 residents. The development pattern that both initially and

KEY FINDINGS & EXECUTIVE SUMMARY

currently attracted many people to Virginia Beach, (i.e., single family homes with relatively easy access to excellent jobs, schools, and recreation opportunities) also creates severe challenges to making Virginia Beach a more sustainable community. These challenges include a lack of sustainable land use patterns, walkable commercial centers, sustainable transportation, viable transit, safe and attractive bicycle and pedestrian travel, and stronger efforts to making farming more viable.

Five long term trends could exacerbate additionally these problems:

1. There is a long term trend for higher fuel prices and increasing political interest in higher gas. Although held back by the 2008-2009 recession, relentless increasing world wide demand will return, making the auto-dependent travel that dominates Virginia Beach increasing more expensive and difficult for many Virginia Beach residents and workers. Concerns about lack of maintenance of our transportation infrastructure and about global warming are going to drive increases in gas or carbon taxes and/or expensive carbon off-set programs.
2. Demographic changes, including longer life spans and the attractiveness of Virginia Beach for retirees, are going to continue to increase the number of older residents who no longer drive automobiles, but have very limited alternative safe and convenient travel options.
3. As traffic congestion increases, capital costs, maintenance costs, rights-of-way issues, and community quality of life issues will limit the community's ability to add lane miles to address congestion. Virginia Beach can no longer build its way out of congestion.
4. The demand for raw land for new relatively low density housing remains strong, thereby continuing the threat to farmland.
5. Finally, some of the newer Virginia Beach development and roadway reconstruction continue to perpetuate the past development patterns that challenge sustainable development, such as roadways that are difficult for pedestrians to cross and medium density suburban housing in "greenfields" or previously undeveloped areas that require new public services and, eventually, wider roads.

The Virginia Beach Sustainable Design Assessment Team examined opportunities from many perspectives to help Virginia Beach understand its opportunities to become a more sustainable community. It is not intended to provide a comprehensive or detailed assessment of all of the opportunities available to Virginia Beach. The SDAT is designed as a strategic planning process; its purpose is to challenge Virginia Beach to find new solutions.

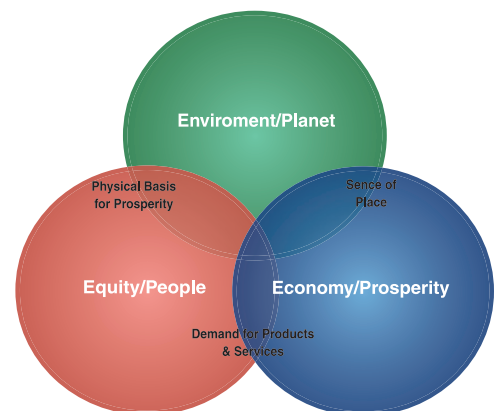
OPPORTUNITIES: FIVE CROSS-CUTTING THEMES

The team identified five themes that we believe should cut across all program areas and actions. These themes helped inform our more specific recommendations on the following pages.

1. Make Sustainability the Theme of Public Conversation

Sustainability is far more than a simple list of actions and programs. It is even more than a thoughtful balance of the three Es and Ps (Environment/Planet, Economy/Prosperity, and Equity/People). Sustainability is about finding the overlap that allows for the conservation of important natural systems, the creation and preservation of a vibrant economy, and the perpetuation of strong community that serves all of its members.

It is unrealistic to believe that there can ever be a simple sustainability litmus test that allows the community and policy makers to all agree on what are the best actions. Far more important and realistic, however, is that sustainability should become a key part of the public conversation. The City Council, City Manager, School Board, Metropolitan Planning Organization (MPO), Planning Commission, Zoning Board, hearing officers, department heads and division directors, budget analysts, advocacy and not-for-profits, private investors, and the entire community should consider and discuss sustainability in every public debate. We have faith that when the public is talking about sustainability focus is on long term sustainability, decisions are more likely to favor the most sustainable solution.



KEY FINDINGS & EXECUTIVE SUMMARY

2. Focus on Long Term Life Cycle Costs

Many argue, as we heard in one of our focus groups, that “Dreams have costs, costs that Virginia Beach cannot afford.” Ignoring the true lifetime costs of any public policy or investment, however, is far more expensive and is the true dream killer. Any significant public policy, investment, or action should be examined with a century or longer time horizon.

- Building a building with more insulation or otherwise adding energy efficiencies has slightly higher up-front costs, but will pay back the investors many times over with lower energy costs over time, especially as energy costs spiral upwards.
- In many, but not all, situations, widening a road will simply induce more traffic while making pedestrian crosswalks longer and less desirable, ultimately resulting in a very unprofitable and unsustainable investment.
- Installing a new storm sewer outfall with an 80 year lifespan or building new buildings with an even longer lifespan based on current sea levels may be a terrible investment if sea level rise in the next 50 years limits the use of those structures.
- Allowing land development patterns that threaten agriculture and require more road widening and expensive public service delivery patterns may be far more expensive than steering growth to Strategic Growth Areas, even if those SGAs require public investments.

3. Strengthen the Sense of Place

Virginia Beach residents appear to love their community, but many residents report that their sense of place, identity, and community is weak in comparison with many other areas. In Virginia Beach, economic and recreational opportunities abound and many of the daily indicators of the good life (such as low crime, low taxes, high standard of living, and good public schools) are strong. In spite of that, all too many young people vote with their feet and move elsewhere, many of them to communities with a strong sense of place. Accordingly, many of the City’s efforts and our recommendations are designed to help improve the sense of place. For example:

- **Strategic Growth Areas** (in the current and the proposed comprehensive plan) will provide the critical mass to create those defined central areas that are critical to sense of place.
- **Continuing and strengthening the Agricultural Preservation** efforts, including expanding farmland preservation, farmers’ markets, and efforts to help farmers; supporting Virginia Beach’s agricultural economy; preventing sprawl that could further damage the sense of place; and preserving an agricultural identity that is extremely rare among larger cities.
- **Light Rail and a Complete Streets Transportation approach** are critical to efficiently move people and goods, but are equally important to support the understanding that the transportation system will define, for better or worse, what kind of city Virginia Beach is.
- **Urban Design** and the design elements of commercial centers are critical to a sense of place and make the difference between those areas that all seem alike and those areas that we remember as being special.

4. Improve Connections

Virginia Beach is a community of wonderful options: safe suburban residential neighborhoods, the vibrant beach resort, an abundance of parks and recreation areas, farmland, a budding new city center, and much, much more. Cities can be greater than the sum of their parts, however, because of the strong connections and synergy that those connections facilitate. Virginia Beach often has weak connections, and many of the existing connections are nothing more than utilitarian in nature. Neighborhoods are isolated from each other by streets that are moats, preventing safe passage for residents and neighbors. Transportation systems move people, but don’t invite casual walks, bicycle trips, or drives. The spectacular waterways, especially the Lynnhaven River, are surprisingly inaccessible for those without a boat.

Virginia Beach has the opportunity to connect neighborhoods, build commercial areas connected to those who use them, remove barriers to natural connections, and make connections as great an experience as the destination.

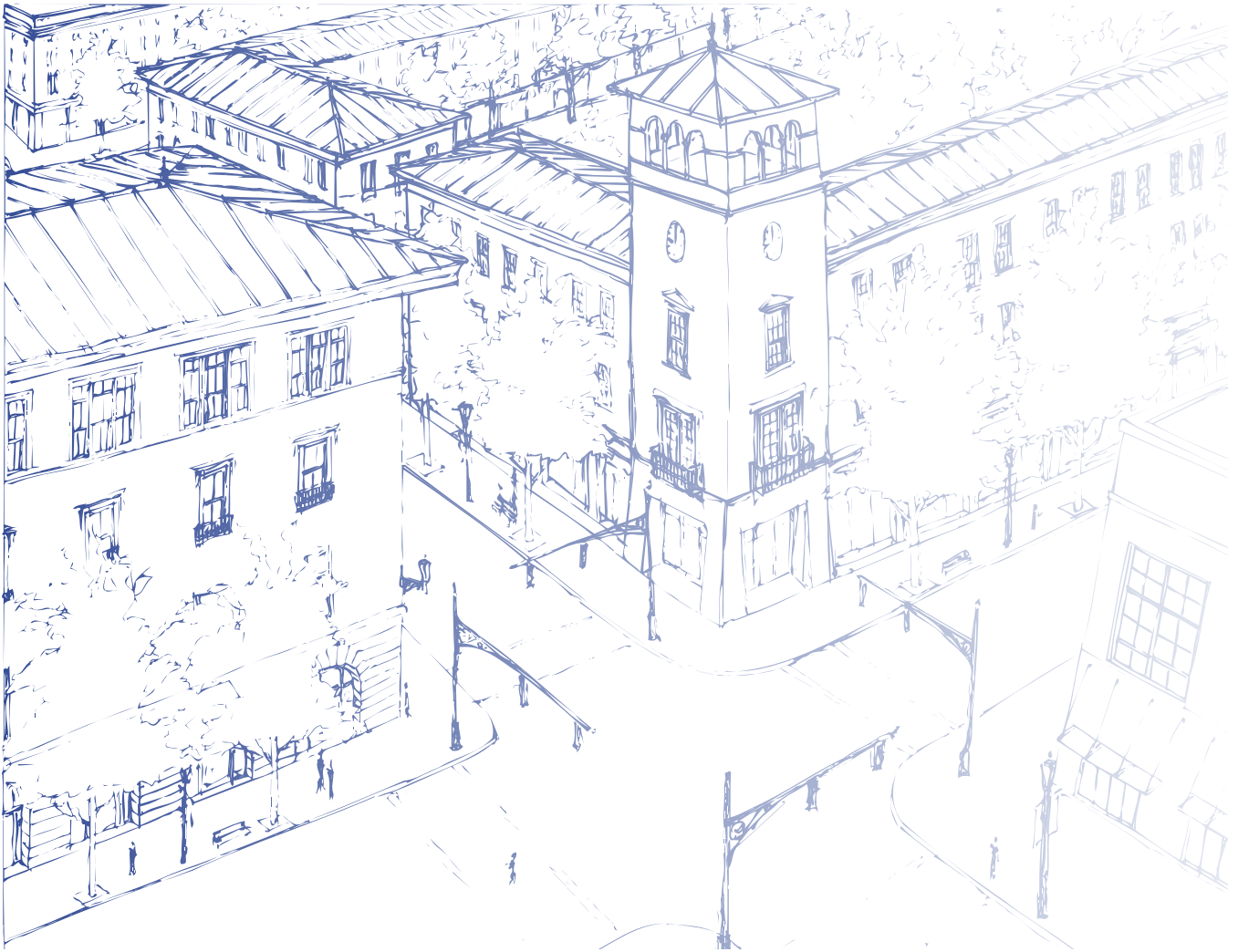
5. Seize the Moment - Get Ahead of the Curve

Sustainability requires a very long planning horizon. It also requires not simply responding to what is already happening, but using foresight to get ahead of the curve.

- The next time gas prices spike up dramatically, whether because of market conditions or increased taxes, it will be too late to redesign a transportation system.
- Sea level rise is happening and will continue over the next century. The rise per year and even per decade is subtle, but will have real effects over the life of buildings and new infrastructure, especially in the low-lying southern area of the city.
- Once land is developed, the development patterns that took such a short time to create can take centuries to change. New actions need to get it right the first time.

Virginia Beach is a city with great amenities, a strong economy, strong municipal finances and institutions, a committed citizenry, and an inordinate amount of promise. These resources help fuel its growth. It is also a city with an increasingly unsustainable land use and transportation system and a city that is facing some future threats to its long term stability. The strategic opportunities that we have identified can help Virginia Beach face these challenges in the short and the long term. Let's get started!

URBAN DESIGN



BACKGROUND

An early part of our country's history is located in Virginia Beach, yet the City as an entity is comparatively young. It was formed in 1963 through the merge of the town of Virginia Beach with Princess Anne County. It developed in a low-density suburban pattern as a bedroom community to Norfolk. Strong growth occurred from the mid-1960s through the 1980s. In 1979, the City established a Green Line, an urban-growth boundary, to concentrate development to the north part of the City and protect its agricultural land to the south. Today, there is limited vacant land available north of the Green Line. (SOURCE: 2003 Comprehensive Plan Policy Document, p5)

As the City of Virginia Beach matures, it looks to revitalize its older neighborhoods and redevelop key areas or Strategic Growth Areas as denser mixed-use communities to accommodate future growth. This is concurrent with the study of a light rail extension from Norfolk to the Oceanfront along Virginia Beach Boulevard to address issues of traffic congestion, energy costs, and environmental concerns. In the past, Virginia Beach looked to Norfolk for business, civic and cultural activities, but today, the City is working to develop its own amenities and attractions. Institutions such as Virginia Aquarium & Marine Science Center, the Sandler Center for Performing Arts and the Virginia Beach Amphitheater are an active part of the community

ASSESSMENT

The development in Virginia Beach is largely based on Euclidian single-use zoning where most land uses are segregated and mixed-use development is generally prohibited. Low-density housing developments are sprawling, and pockets of development are filling the Green Line Transition Zone and creating development pressures south of the Green Line. Many communities are compartmentalized with limited access and connections to their surrounding context. Commercial uses are developed as strip malls located on arterial roads and key intersections. Long distances between land uses have led to a dependency of the car, increased automobile traffic, and wide arterial roads. This auto dependency has led to the use of a large amount of valuable land area for infrastructure and surface parking.

Many residents stated that their neighborhoods lack a 'sense of place' and community. Property lines abut, but neighbors don't know each other. Many if not most children are unable to walk to school or to a nearby park because of unfriendly street crossings and the lack of connected sidewalks. This hostile pedestrian environment requires their parents to drive them, thereby creating even more congestion on the roads.

Other than the resort area, the City also lacks a downtown or center for civic identity. The Town Center provides an alternative to single zoning development. It was developed in 2002 along Virginia Beach Boulevard with office, residential, civic and retail spaces set within a walkable community. It is a model of mixed land use and future development opportunities, but it has not yet reached the critical mass nor the level of commitment to become the true "downtown."

Virginia Beach has a strong relationship with its natural setting. The City is framed by the Chesapeake Bay to the north, the Atlantic Ocean to the east and Back Bay to the southeast. The inland waterways pass through neighborhoods in both the north and south areas of the City. As a result, it is one of the best cities in the country for outdoor amenities and the residents enjoy an active lifestyle. Conservation efforts protect the habitat and water quality. The City, along with its state and federal partners, offers an extensive park and recreation system.

Virginia Beach has a unique opportunity to be a model community for sustainability through its stewardship of the natural environment, its maintenance of the Green Line to protect open land, the active lifestyles of its residents, and its future plans for strategic growth.

URBAN DESIGN

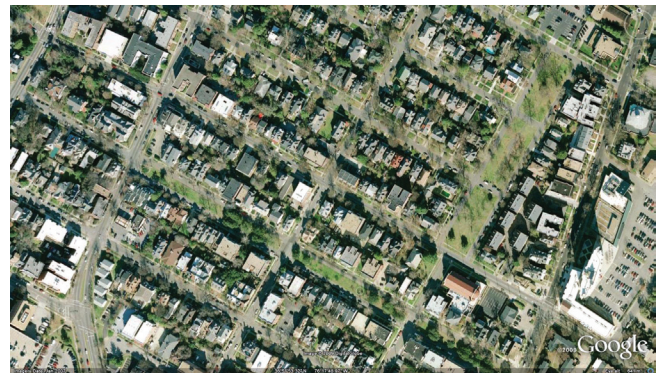
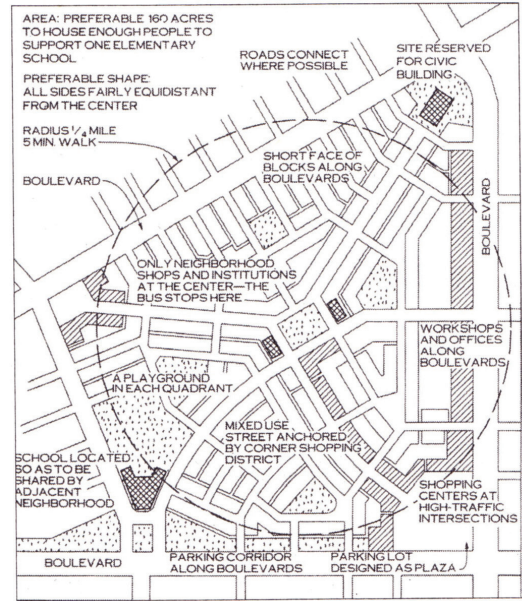
VISION

Walkability and Connectivity in Existing Neighborhoods

A well-known plan for an ideal walkable neighborhood is "An Urban Neighborhood" by Duany Plater-Zyberk.

In this plan,

- The overall size of a neighborhood is suitable for walking. Neighborhoods are a comfortable 5-minute walk or ¼ mile from the center to edge; however, this distance can increase or decrease based on the actual circumstance.
- The neighborhood is diverse in land uses and housing types. It includes parks and playgrounds, neighborhood retail such as dry cleaners, day-care centers or a neighborhood restaurants, and civic uses such as a school or library. Prominent locations in the neighborhood are set aside for civic uses.
- The neighborhood street network is connected and well integrated into its surrounding context. Streets align where possible and there are many points of entry to allow for better access.



A possible strategy to create a sense of place in an existing neighborhood is to articulate its major elements to give distinction and identity within the existing neighborhood fabric.

- **Sidewalks and Trails:** Provide continuous sidewalks on streets and connect trails to existing systems to give better accessibility to children and elderly people, and adults who chose to walk or bike.
- **Streets:** Provide walkable streets defined by sidewalks and streetscape, and framed by building frontages. Local residential or connector streets may be retrofitted with minimum requirements for width and speed to allow for more intimate and friendlier environments. Narrowing the street width also provides space to be used for new sidewalks and landscaping. This would also allow for shorter crosswalks at street intersections.



- **Neighborhood Retail:** Convenience retail and neighborhood shops could be located within the neighborhood along main streets and at key intersections. Restaurants and bakeries may serve local produce and goods. A variety in land uses offers opportunities to meet and socialize with neighbors in a walkable distance.



- **Community Uses:** Schools, parks, and libraries serve as a focus in each neighborhood. Their location should have high visibility; streetscape can provide further identity. Small, frequently interspersed parks and playgrounds are destinations for children; they are not formed by leftover and unused development areas. Varied landscaping including shade trees provide different spaces or “outdoor rooms” for a range of outdoor activities.
- **Greenways:** A network of greenways and natural ecological systems offer conservation of habitats and fauna. This network can be integrated into communities and connected through access to parks and trail systems.

It is important to provide diverse land uses that encourage resident socializing in order to create a sense of place. Sharing local parks, shops, sidewalks, and streets, especially while enjoying similar activities at neighborhood events, all create a sense of inclusion and community. These ideas can also be implemented in building design by addressing architectural features and by programming activities that create lively public spaces and comfortable pedestrian environments.



URBAN DESIGN

Redeveloping and Connecting Existing Commercial and Retail Areas

A possible strategy to redevelop existing big-box retailers is to focus commercial activity away from the parking lot to the street.

- **Lot Size:** Divide the large blocks with new streets, and align the streets to the adjacent properties where possible. Provide a compact retail development along a street to improve walkability and more efficiently use land.
- **Setbacks:** Reduce building setbacks. Bring commercial activity closer to the street in order to create more interest in architectural features or window displays. Parking remains located behind the new buildings.



VACANCY-TO-ART

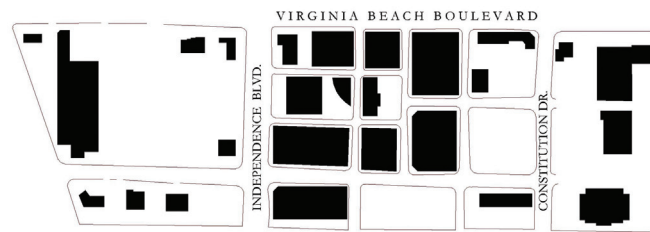
Art can turn vacant spaces, space that harm the vibrancy of commercial areas, into exciting spots that add vibrancy. Most of these efforts are simply trying to find temporary tenants who keep vacant space alive, from efforts as small as window art to active use of the space. Such activities prevent urban decay and can reduce the time commercial spaces remain in a vacant purgatory by highlighting the strength of those locations. They also promote the arts and support artist by allowing art showcases without rental costs.

These programs have been around for many years all over the world at different scales. They have been expanded in many areas as commercial vacancy rates have soared.

- Arts Council England's Art in Empty Space program is a government nationwide grant program to promote art in vacant spaces.
- Karlsruhe, Germany Kunst Transit (Art on the Move) is a non-government effort in one German City.
- Lower Manhattan Cultural Council's Swing Space "connects artists and arts organizations with vacant commercial space downtown."
- Minneapolis/St. Paul's Twin Cities Fine Arts Organization's Save Canvas program, which gets its name from the idea that empty buildings are simply an empty canvas waiting for art.
- Greater Kansas City's Charlotte Street Foundation has worked to match landlords of vacant spaces with artists for no or low cost short term leases.
- Boston's Paint Pens in Purses is an effort by a single art collective to covert a single vacant space to art uses.

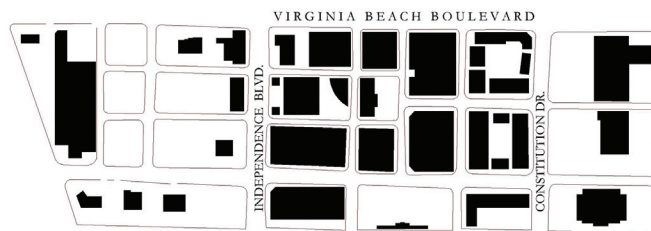
Virginia Beach could benefit from such a program in vacant new commercial space (e.g., Town Center)

- **Building Entries:** A new development should address the street with sidewalks and pedestrian-scaled architectural features that provide a comfortable walking environment. Primary building entrances are afforded from the street, and secondary entrances are from the rear parking lot. Requirements of site landscape and building frontage including an elimination of blank walls may be introduced.
- **Surface Parking Lots:** Large surface parking lots are unfriendly to pedestrians. They can be divided in smaller segments by providing a through street and incorporating landscaping and sidewalks between segments and between each parking row. By using the appropriate landscape, bio-swales can be used to filter stormwater before it enters the City system.



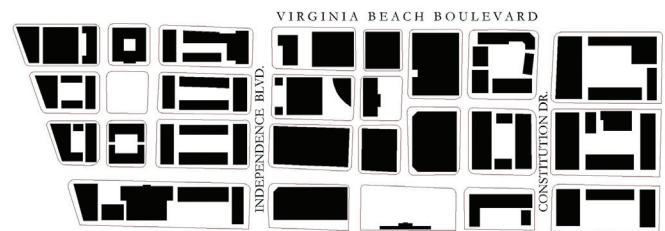
CURRENT CONDITION

FIGURE-GROUND PLAN of TOWN CENTER, VIRGINIA BEACH



PHASE I DEVELOPMENT

FIGURE-GROUND PLAN of TOWN CENTER, VIRGINIA BEACH



PHASE II DEVELOPMENT

FIGURE-GROUND PLAN of TOWN CENTER, VIRGINIA BEACH

Establishing Connections throughout Virginia Beach

The City of Virginia Beach has implemented a Bikeways & Trails Plan to improve “connectivity between communities and to promote trail projects throughout the City so that all Virginia Beach residents and visitors benefit from pedestrian systems, trails, bicycle on/off road paths”. (SOURCE: Bikeways and Trails Advisory Committee, October 2008)

The existing plan can be expanded to provide a continuous network not only from neighborhood to neighborhood but also to parks, schools, greenways, inland waterways and beaches. To promote local awareness of historic sites and habitats, interpretive signage can be integrated in the network, similar to that already utilized on the Cape Henry trail. These destinations must be reachable by safe and convenient sidewalks and trails.

Streets have been designed for the safe, efficient movement of vehicles and sized for the traffic volume. Although this is of critical importance, other transportation modes such as bicycles or pedestrians should also be integrated. A more holistic approach to streets may be conducive in connecting communities by not serving as barriers between them. The street is an extension of public space. Its definition should reflect the character of the community. It can become a destination to visit, walk and cycle, rather than existing simply as traffic thoroughways and, at times, impenetrable as moats between neighborhoods.

URBAN DESIGN

Creating Centers along Transit Boulevards

The Strategic Growth Areas (SGAs) as defined by the City are mixed-use developments located along key transportation routes. They offer opportunities for better access and increased options for housing and transportation. The SGAs along Virginia Beach Boulevard are located adjacent to the future light rail system. Successful transit service may not be fully implemented until after the mixed-use development but land use patterns should lead to transit-oriented development (TOD).

Each SGA will serve as a node of activity and should be developed to emphasize specific uses and density based on a consideration of existing conditions and the character of the surrounding community. Primary uses include residential, retail, office, cultural or recreational.

Mixed-use developments offer choices to live, work, shop and recreate. A pedestrian-friendly environment is emphasized; the mixed-use component should extend out so that a variety of services are within an approximate 5-minute walk. Residential uses are crucial for creating a viable mixed-use development as it provides activity after business hours and on weekends. Shared parking arrangements can also be implemented for commercial and residential uses. While only a small percentage of people may live within a walking distance to work, mixed-use communities enable people to live or work where they can walk to daily activities. The development may be designed with restaurants, shops, health clubs, and day-care centers to eliminate the need for frequent vehicle trips.

Shared public space (parks, plazas, and open space) is a main focus of a community. These spaces act as meeting places, recreational centers, lunchtime locations, and leisure zones. These are important features where residents, retailers and business workers meet and gather. Public space is typically more centrally located within the community. Plazas and parks support civic uses for public events and residential uses for informal activities. Public art, landscaping, and landmark features provide points of interest and identity. People enjoy being around other people; this generates pedestrian activity. It is important not to plan for a single activity but to layer a rich variety of activity types. Programs should be planned for year-round use for all ages; this may include farmer or antique markets, concerts, art fairs, parades, festivals and cultural events.

Triangulation is a concept that clusters activities next to each other to encourage further interaction and activity and minimize vehicle trips generated between activities. Rather than have a single dominant use, offer a range of uses. A park may have one activity, but a park with a playground generates more. Additionally, a park with a playground located next to a library with a café generates a variety of activities of all ages. The synergy created by the combination of activity is greater than the sum of individual activities. This principle of placemaking can be applied not only to an individual place but also to mixed-use development, a neighborhood or an entire city. From the developers' point of view, an active plaza or lively street generates pedestrian traffic for commercial uses and is seen as an amenity to residential uses. Successful public places have been shown to increase property values for surrounding properties.

In addition to Strategic Growth Areas along Virginia Beach Boulevard, a mixed-use corridor at the Oceanfront resort area provides opportunities to redevelop and strengthen underutilized parcels with year-round activity. The existing area is comprised of dense hotel and commercial uses along the oceanfront. The urban fabric breaks down a couple of blocks inland with areas of surface parking and underutilized parcels before transitioning to low-density residential areas.

A mixed-use development should provide a transition in use and scale from the hotels at the oceanfront to the residential neighborhoods. These developments can provide a range of housing options in a denser environment directed to young singles and couples. The development can be primarily residential with commercial uses and street-level retail. It can share existing public spaces and entertainment uses in the surrounding resort area.

Open Space and the Environment

Parks and open space are beneficial to all neighborhoods and districts; they greatly enhance the quality of life. The City of Virginia Beach has strong initiatives to protect and maintain a high quality of open space on both land and water. In keeping with this practice, it is strongly recommended to maintain development restrictions of the Green Line. Additionally, best practices for filtering stormwater should be implemented to continue to improve water quality. These include:

- **Control stormwater from building roofs.** Connect roof gutters to downspouts and drain to rain gardens at all downspouts. The rain gardens would account for 20% of the roof area. Use native or adaptive plants in the rain garden.
- **Reduce lawn with garden of indigenous landscaping.** Use native or adaptive plants on half of site in place of a manicured lawn.
- **Green roofs.** Promote extensive green roofs to benefit stormwater retention, thermal values of the roof, and roof durability.
- **Increase tree cover.** Promote tree coverage for 25% of open space on lot to provide shade and increase stormwater retention capacity.
- **Use drainage swale or bio-swales.** Use swales instead of pipes in order to reduce tax on municipal infrastructure and increase run-off filtration.

RECOMMENDATIONS

Short Term Goals for Implementation

- Revise the Zoning Code to promote mixed-use development, especially along the major corridors, non-industrial commercial centers.
- Replace parking requirements minimums with maximums. Require that any parking above a small minimum utilize pervious pavement.
- Avoid greenfield site development.
- Maintain or strength development restrictions south of the Green Line and consider measures to limit development within the transition zone.
- Fully implement plans to use LEED New Construction for all municipal building projects.
- Use LEED Neighborhood Development as reference for new development.
- Develop list of the City's sustainability goals to implement, with measurable benchmarks for each.
- Include representatives from community organizations in Steering Committees to periodically review and respond to Plan Reviews.
- Create a Vacancy-to-Art program.

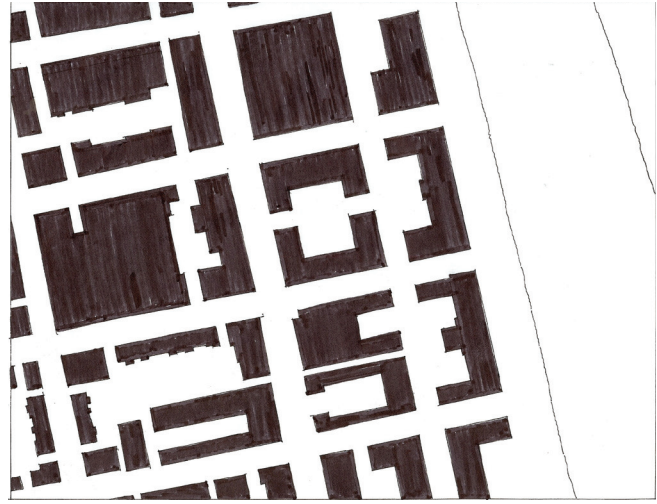
Long Term Goals for Implementation

- Introduce urban design guidelines or standards for special districts.
- Develop benchmark and tracking system for all sustainability goals and regularly monitor progress and report back to the community.
- Introduce LEED Existing Buildings to monitor efficiency of existing municipal buildings.
- Introduce a mix of housing types and densities in mixed use areas.
- Encourage the redevelopment of underutilized sites for mixed uses.
- Establish transit oriented and pedestrian friendly development.
- Restore the street grid to large commercial development areas within a mile, or more, of Town Center.
- Implement form-based code or other measures to require new buildings along commercial strips to be developed up to or much closer to street sidewalks.

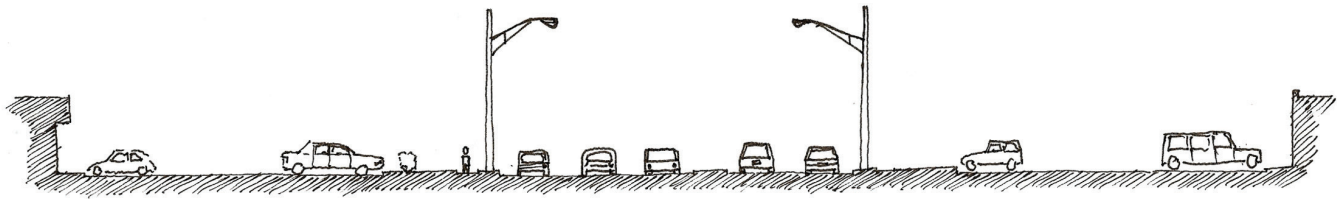
URBAN DESIGN



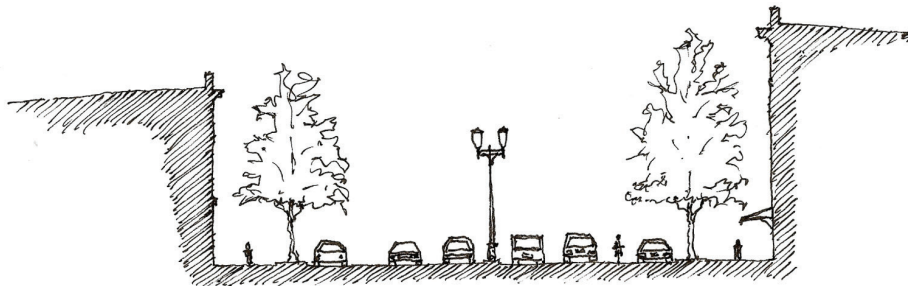
Current Plan



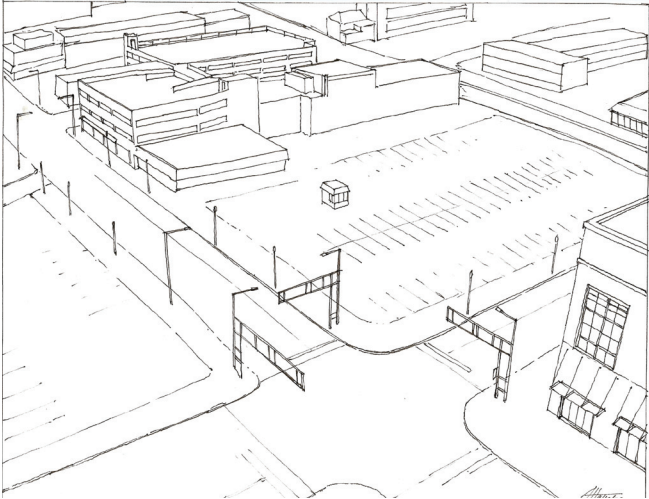
Proposed Plan



CURRENT STREET



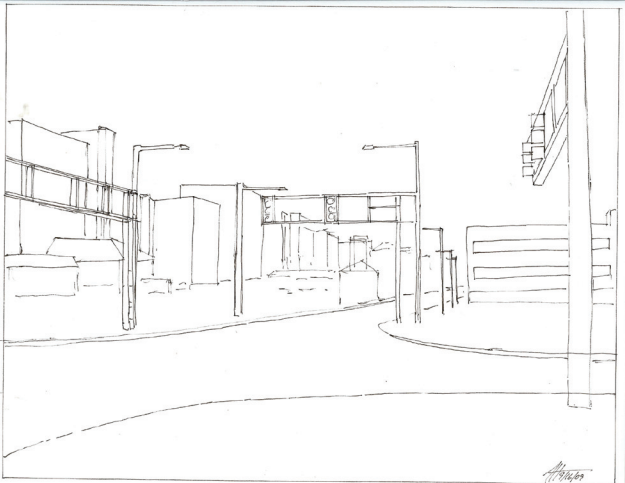
PROPOSED STREET



Current Aerial Perspective



Proposed Aerial Perspective



Current Street Perspective



Proposed Street Perspective

AGRICULTURE



If more of us valued food and cheer and song above hoarded gold, it would be a merrier world. -J.R.R. Tolkien

BACKGROUND

To say that the City of Virginia Beach is agriculturally unique almost seems trite. The City may be without an equal in all of the U.S. Within the jurisdiction lies an urban area with nearly a half million people and nearly 27,000 acres of prime agricultural land with agricultural products worth more than \$12.5M annually (2007 Census of Agriculture, County Profile, USDA). With some 174 farm production units listed by the 2007 Census, the crop and production profile for such an urban area is surprisingly reflective of the larger agriculture of the state and nation.

Virginia Beach agriculture is dominated by large (by eastern standards) farm operations. These operations produce, in terms of dollar value, mainly grain crops followed by nursery and greenhouse production. Far behind are vegetables, potatoes, fruits and berries. According to the 2007 Census, 109 farming units out of 174 reported losses (with the City reporting net loss in agriculture overall). These facts seem surprising for an agriculture area so close to an urban center where high value agricultural opportunities should abound. The data show an area of many small farms (151 with sales under \$100,000), struggling to be financially viable, dominated by a few large farming operations focused on grains.

Unique, too, is Virginia Beach's history of national leadership in farmland preservation. The Agricultural Reserve Program (ARP) has protected, through agricultural conservation easements, over 7,933 acres, or nearly of the remaining farmland in the City. This is a remarkable record, but, with fewer than 600 acres enrolled last year and only 135 acres enrolled so far in 2009, progress is very slow. There was a perception among agriculture focus group members who participated in discussion during the SDAT that in recent years substantial monies from the ARP's dedicated funding source have been siphoned off for other purposes.

Of upmost concern to the future of agriculture and rural sustainability is the status of the urban growth boundary, or Green Line, in Virginia Beach and its fate in the revised City comprehensive plan and the ensuing implementation. SDAT focus group participants consistently expressed concern about the City's commitment to maintaining the integrity of the Green Line. Troubling, low density incursions into a Transition Zone alarmingly illustrate the softening of the urban growth boundary. The continued dependence of the agricultural economy on grain production and the relatively small commitment to high investment, high return agriculture also suggests that the farmland owners of Virginia Beach are wary of the protections afforded agriculture in the comprehensive plan and the slow pace of agricultural land preservation efforts.

The City of Virginia Beach Farmers' Market continues to be an effort to connect urban buyers with the City's agricultural economy. Results are mixed. The continued reliance on a single, central market with a predominance of vendors who are not direct producers of farm and seafood products from the City has led to a lagging of the market. Its location, with traffic congestion and access difficulties, also hampers growth and does nothing to strength Virginia Beach's urban centers. There is little sense that the Market "connects" people in the neighborhoods with farmers and watermen of the area. Discussions about relocation have divided citizens committed to the current market, and others who envision a different approach. At least one non-profit is sponsoring a competing farmers market more closely attuned to local producers and a sustainable approach to the food system.

Overall, both farmers and urban citizens seem concerned over the future permanence of agriculture in Virginia Beach. If agriculture is to flourish and become a key to the sustainable future of the City these concerns must be addressed. Any game plan for a sustainable future must include the agricultural and seafood industries as key players.



AGRICULTURE

ASSESSMENT

It is clear that the people of Virginia Beach are committed to the health and sustainability of the community and the continued viability of the city's agricultural community. At the same time it's apparent that feedback from agricultural participants during the SDAT was circumspect in terms of the future. It was not altogether clear to them, for example, that there was real potential for profits in the expansion of food production for local consumption. Given the solid profits in grain production in recent years, the likelihood of new investment and commitment to fruits, vegetables and ornamentals was seen as unlikely. Until local support for agriculture is more clearly evidenced, in both public and community actions, there will be only small changes in agricultural production in Virginia Beach.

The farmland preservation efforts need to move to the next stage. These efforts will have to address two major areas of concern. First, the existing Agricultural Reserve Program needs to "gear up" to reinforce the City's long-standing commitment to farmland preservation. The City will have to reassure landowners that the commitment to finishing the job of compensating landowners for the preservation of the remaining farmland is still strong. Secondly, there is a clear need to add additional "tools" to the toolbox in the preservation of farmland, and, perhaps more importantly, farmers.

The Green Line is under pressure. The largest enemy of sustainability in Virginia Beach has been the suburban sprawl characterizing so much of the growth in recent years. The discipline of the Green Line needs to be reaffirmed as the City strives to create viable Strategic Growth Areas, bring excitement to new urban growth and better utilize the urban areas as they now exist. Not coincidentally, such discipline will reaffirm a long-term commitment to agriculture. All across America when farmers are asked why they will sell their land for development, the answer's the same: impermanence. "Impermanence" is the realization that there are not long range prospects for agriculture. It's the uneasy feeling that "I may be the last farm here as agriculture disappears" coupled with "My kids can't really depend on a future in agriculture around here." Even with the preservation already accomplished in Virginia Beach, this feeling pervades. Reinforcing the Green Line can go far in dispelling this feeling and encouraging new investment and new directions for farmers in the city.



There are real opportunities to better connect people and communities in Virginia Beach. In terms of the agricultural area, this is relevant both in terms of the food system and physical connections to the rural environment. The current city farmers' market is inadequate in representing the local foods and flavor of the area. While busy, it lacks the vibrancy of many small, community markets around the country which put producers directly in face-to-face contact with neighbors. The newly created Old Beach Farmers Market comes closer as a vibrant meeting place for people seeking the freshest of local foods.

In the larger picture, the data shows that grain farming predominates in Virginia Beach. Yet little has been done to capitalize on some unique opportunities here that could enhance profitability in this sector. Virginia Beach farmers sell grain to just a couple of buyers. This may mean that the opportunity exists to maintain "crop identity" for greater profits. For instance, enhanced grain varieties created through genetics that have special characteristics must be segregated from the commodity market flows in order to fetch higher prices. Likewise, some markets are now paying premiums for agricultural products that are non-Genetically Modified Organisms (GMOs) but which must be scrupulously separated from GMO products. Demand for "certified organic" grains has skyrocketed because of demand to produce "organic" meats and grain products. Virginia Beach, because of its geographic characteristics and agricultural marketing system, is well-positioned to capitalize on these profitable alternatives. Finally, in the overall sustainability theme, bio-fuels could play a key role in the agricultural sector. The SDAT heard about the local interest in a bio-diesel plant for the area that could be fed by algal feed stocks. Soybeans, the major crop in Virginia Beach, could be a successful input to a bio-diesel effort as well.

Many have claimed that the rural heritage of the Virginia Beach area is on the verge of disappearing. The loss of direct contact with the rural areas of the city and with the bounty of sea and estuaries is part of this feeling. With most agricultural land devoted to the production of commodity grains rather than fruits and vegetables, the separation from the agricultural industries has widened.

In summary, changes in agricultural crops, slowing of farmland preservation, continued sprawling into rural areas -- all create disconnects with the local food system and the twin heritages of farming and fishing. Recreating those linkages will be critical aspects of making Virginia Beach a more sustainable and resilient community.

VISION

Live as if you'll die tomorrow, but farm as if you'll live forever. – Old Farming Proverb

Certainly one of the roots of a sustainable community must be a resilient and sustainable agriculture. Virginia Beach is fortunate to have a farming community within its borders. How that community becomes a part of the future sustainability of Virginia Beach is the agricultural contribution to a sustainable vision for the future.

- Create a clear understanding by all residents of the importance of agriculture and seafood to the community's economy and health, accomplished by:
 - Regular presentation of quantifiable data about the importance of agriculture and fisheries to the local economy.
 - Studies that substantiate the "multiplier effects" of natural resource industries, impacts to the environment, and the extent of food supply in Virginia Beach.
 - Spokespersons who represent the natural resource industries in the deliberations of the City Council on all issues, especially as these relate to sustainability.
- Reinvalidate the farmland preservation program.
 - The City Council must make firm commitments to funding the APR program.
 - Program policies, procedures, and payments should be regularly reviewed with the target of preserving at least 1,000 acres per year under easements
 - All city residents should be aware of the strides being made in preservation and kept informed about the importance of preserving all the remaining farmland in the city.
- Expand the "tools" in the City's toolbox for protecting farmland.
 - Enact new programs to encourage expanded investment by young and beginning farmers especially.
 - Policy makers, farmers and citizens should convene discussions on additional steps that the City can take to preserve farmers and the business of farming beyond just the preservation of land in easements.
 - Developers of new, urban projects should be encouraged to be more sustainable by being granted additional units or square footage, including bonuses for the permanent preservation of farmland.
- Demonstrate a strong commitment to maintaining a clear Green Line.
 - The Green Line delineation must be crystal clear in the Comprehensive Plan.
 - Densities and development plans should be clearly different at the Green Line.
 - There should be super majority requirements for any variance from the Green Line and clear statements that such variances should not be granted.



AGRICULTURE

- Create new physical connections between city and country.
 - There should be bike and pedestrian connections to the southern, largely agricultural areas of Virginia Beach.
 - Signage in rural areas should highlight landscape features, farm production, farm markets, and rural heritage.
- Maintain a robust local food system which reduces transportation, supports a healthy diet for all, and provides profit opportunities for farmers.
 - City economic development and agriculture departments should cooperate on enhancing the City's agricultural industry.
 - The local school system should provide healthy meals based on local farm products.
 - Local restaurants and institutions should emphasize local and sustainable food to improve healthy diets, reduce transportation footprint and "connect" to local farmers.
 - Virginia Beach's local "food shed" out to a 100-mile radius should provide a wide variety of produce, meats, seafood, dairy and value-added products.
 - Local grain production needs to build on bio-fuels potential.
 - Local grain farmers should capitalize on "crop identity" potential for GMO, non-GMO and organic production.



- Create vibrant markets that are places of face-to-face interaction between farmers and neighbors
 - Everyone should have access to local, fresh food, including seafood, farm produce, and local, value-added farm products.
 - Markets should offer food for all cultures and tastes in order to ensure fun and vibrant centers of communities downtown.

RECOMMENDATIONS

Short Term Goals for Implementation

- Engage regional agricultural research institutions in quantifying the economic impacts of agriculture and fisheries. The agriculture and economic development offices of the city government should join forces to update a broad range of data on the importance of the natural resource industries in the city. The starting point for reconnecting the citizens of Virginia Beach with farming and seafood industries is to highlight the key role these play in the economy. It is especially important that this analysis include an economic impacts study

that documents the multiplier effects of these industries. We know their impacts go far beyond direct employment and expenditures on farms and in the fleet. Construction, transportation, food processing, wholesale distribution and a host of other economic sectors benefit greatly from basic economic activity on farms and the fishing fleet. All the citizens will need to be familiar with these facts in order to support farmers, fisherman, and the many sustainability efforts that get underway. ([Virginia Tech Agricultural Economics](#))

- [Engage the Old Beach Farmers' Market non-profit and other interest groups to lead the expansion of the farmers market system in Virginia Beach.](#)

Community groups are generally the best way to support the development of small, neighborhood-based farmers' markets, such as the Old Beach Farmers' Market. This success should be replicated in other neighborhoods in the city. This will require City support for changes in zoning, assistance with site selection and ensuring that markets promote local food and not merely sites for vendors.

Small-scale sites also provide opportunities for farmers and fishermen to test market concepts on a limited basis. A farmer might choose to attend just one or two days a week, at various locations. Farmers can tailor their crops to certain markets and customer preferences. Most importantly, people can come into direct contact with their food supply and the farmers and fishermen who bring it to them. Neighborhood-based and supported markets become vibrant, healthful places to shop and meet friends, new and old, on a face-to-face basis. Look to CitySeed, Inc in New Haven, Connecticut as an organization recognized as a best practice.



- [Establish a new, Town Center farmers' market.](#)

The City's efforts at creating a vibrant, lively town center will be enhanced by a quality farmers' market. Many downtowns across America have re-discovered the vital roles that local markets once played in the urban lifestyle. Young people especially have rediscovered the magnetic attraction of a lively downtown with a blend of high quality employment, residential choice, shopping, and – yes – access to local food. Such a market should be right in the "middle of things" providing a lively meeting place that makes quality food available during working hours and on weekends. Such markets expand the "hours of operation" for downtown and add another reason to go there. Local restaurants, especially, welcome the focus on food and can expand their own connection to local food by featuring "market menus" and similar promotions.

- [Defend the Green Line.](#) A commitment to sustainability and farming requires reinforcing the Green Line against changes and compromises. Both the urban form and agricultural "permanence" will be enhanced. Making sure that the urban growth boundary is firmly in place will reassure working farmers that they are in a long-term business in Virginia Beach. The many years of dedication to farmland preservation will be recognized in this strong commitment. It will lay the foundation for greater efforts in the future. It may be worth considering requiring a super majority vote for any changes to the Green Line as a way to insure its longevity, although a clear commitment to avoid any changes that would reduce farm land or farming viability is more important.

AGRICULTURE



Medium Term Goals for Implementation

- **Implement a “Young/Beginning Farmers” program.** Programs across the country are aimed at assisting the transition in farming to next generation and the next crops. Besides preserving land it is vital that the next generation of farmers have access to land, capital and other resources. Such assistance also can aid in diversifying a farming operation into new areas. The equipment and operating costs involved in transitioning acres to new vegetable crops, fruits or organic production can be steep. The City’s Agriculture Department can spearhead these efforts to augment the outstanding work being done in preserving farm land. Look to Virginia and its efforts but build a program that is suited to the unique qualities of Virginia Beach – and its farmers. Consult with the young farmers and aspiring farmers in the region so they can help lead the way in designing the right program.
- **Establish three to six neighborhood farmers’ markets over the next few years.** About five small markets are needed to serve the needs of a city the size of Virginia Beach, based on the experiences of cities else where in the East. Ultimately, the number and location should be based on community interests in forming such markets, the growth in demand as city residents learn the value and quality of local food and the interests of farmers in the region for producing for the market demand. Markets should be restricted to producers from a region determined by community consensus. While other kinds of markets may also have a place in the city, these would be for producers only. This control is essential to establish the “connections” with local food and to support the farmers and fishermen of Virginia Beach and surrounding areas. One of these markets should be established in connection with the new light rail system. One of the stations along the route would be ideal for a market. Such a farmers’ market provides a focal point of excitement and interest for other activities to coalesce around. As transportation connections radiate from stations, residential and commercial uses spring up, the market would provide not only for users “daily bread” but would be another “connection” to the culture, working lands and natural resources of Virginia Beach.
- **Work with local institutions such as restaurants, colleges, universities and public facilities to establish and implement local food purchasing policies.** A truly robust and resilient local food system must be linked to all the places people eat – not just at home. Over half of all the meals eaten in the U.S. are eaten away from home. Restaurants, including many in Virginia Beach, have found that there is market share and profit in linking to local produce, fish, and farmers. Restaurants today often feature the farmers that they buy from and increase diners’ interest and their profits. The City’s Economic Development and Agriculture Departments should join forces with those institutions that serve meals in the city. Colleges especially have been leaders in sustainable purchasing and especially local food purchasing policies. These initiatives are often driven by students who are demanding better, more sustainable diets at their schools. In elementary and secondary schools, parents lead the drive for a better, healthier menu as we all are working harder to fight childhood obesity. A healthier, and certainly more sustainable, population starts with our kids.



Long Term Goals for Implementation

- Make bicycle and pedestrian connections from the urban area to the rural regions of the city.**
 While markets do a great job of bringing farmers, fishermen and urban neighbors together, there is also something vital about the literal, physical contact with the rural landscape that is special. Virginia Beach should include in its long range transportation plan connections that will allow cyclists and pedestrians to experience the working lands up close. The facilities for bikers should include resting/picnic areas where they can enjoy the scenery and flow of the working landscape. These can also connect to opportunities for direct marketing by producers. Plans for connections to the rural areas should include an emphasis on exposing city dwellers to the heritage and historical landscapes of Virginia Beach. While these transportation connections linking urban and rural will take time, planning, sensitivity and money, the pay offs could be huge. What better way to build support and enthusiasm for protecting the working landscape, local food and the economic health of farming and fishing than to bring as many people as possible into intimate contact with these treasures.



- Build the facilities required for a diverse, local food supply network.**
 Building a robust local agriculture and fishery able to supply fruits, vegetables, fresh meats and seafood will require the facilities to wash, process, pack, clean, refrigerate and handle many products. Working with the private sector, on a timetable dictated by the growth in the market, the City can serve a vital role in coordinating cooperative efforts. While this effort may lie far in the future it is not too early to begin the explorations.

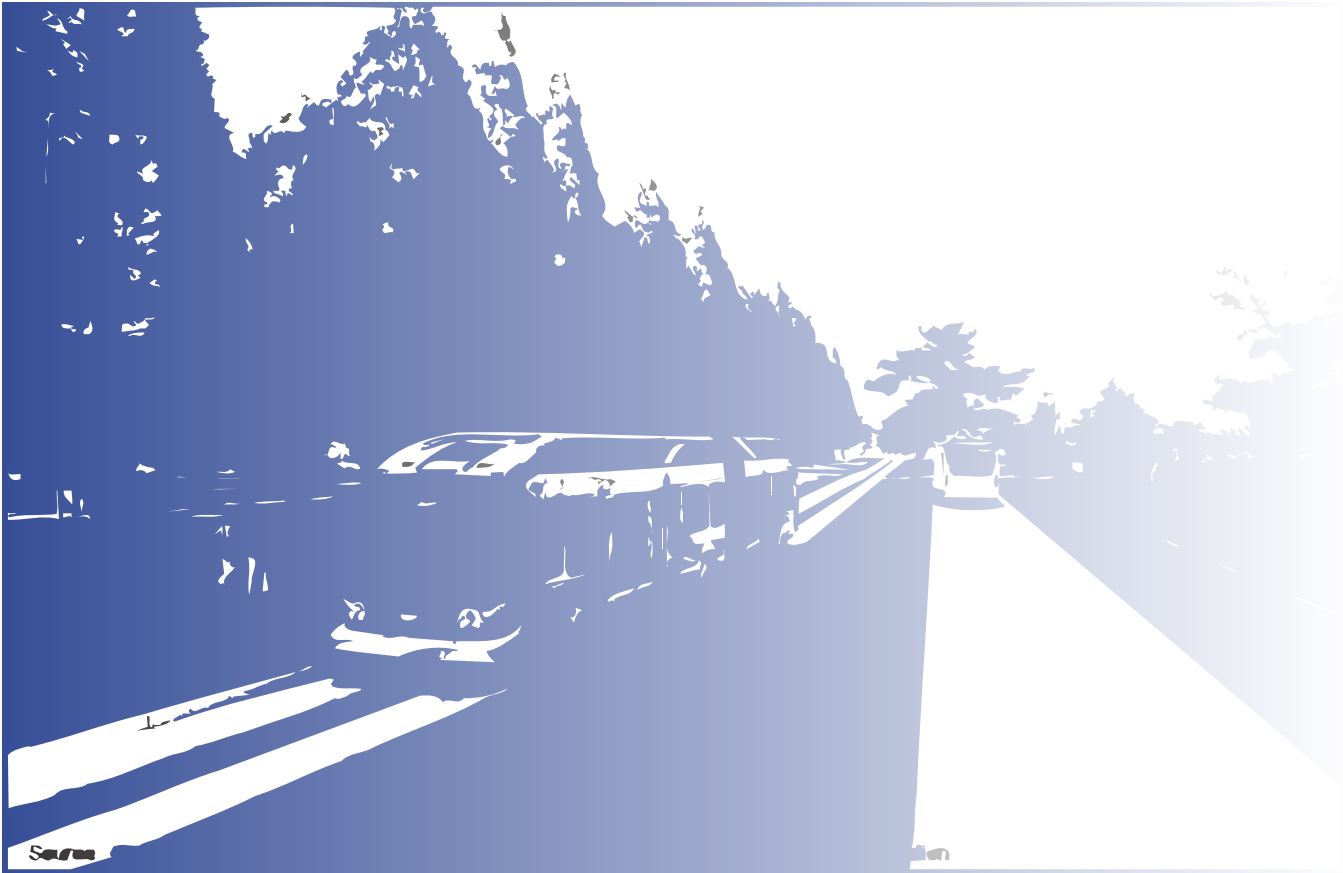
SUMMARY

At the end of the day, agriculture, fisheries and the food system must be key elements in Virginia Beach’s push to sustainability. There may be several paths to sustainability but any one must involve communities and, ultimately, the connections among people, places, the land and their daily lives. What touches all of these more than the food we eat?



Tell me what you eat, and I will tell you what you are. - Brillat-Savarin

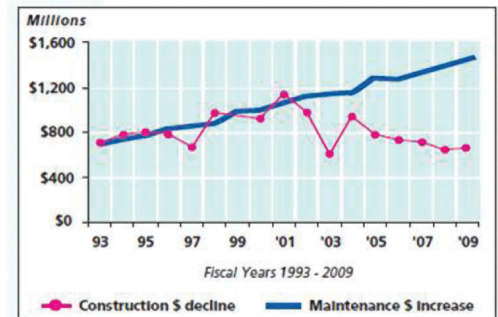
TRANSPORTATION



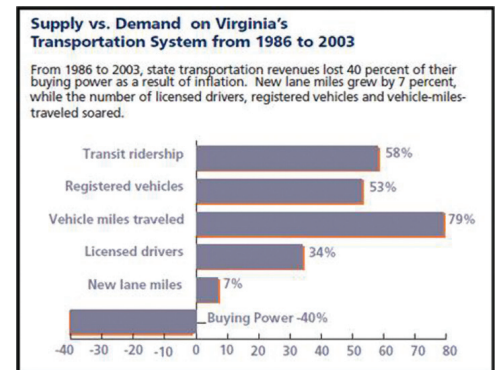
BACKGROUND

When we think of a sustainable transportation infrastructure, most people immediately think of alternate modes of transportation. For the engineers in Virginia Beach, necessity dictates that they focus on finding ways to sustain the existing aging 3,500 lane miles of roadways, traffic signals, bridges, drainage structures, etc. At the same time, new developments are creating pressure to expand the roadway infrastructure to accommodate the new traffic those developments bring.

According to the Virginia Department of Transportation, funding sources for transportation infrastructure have remained stagnant while costs have continued to rise. Between 1986 and 2003, construction dollars lost 40% of their buying power due to inflation, while the demand for infrastructure has increased. With an aging infrastructure, more of these scarce state and federal funds have had to be dedicated to maintenance projects and less to new construction. According to the Virginia DOT, vehicle miles travelled increased by 79% between 1986 and 2003 while there was only a 7% increase in new roadway lane miles. (Source: VDOT Transportation Fact Book – Funding Trends)



As fewer dollars become available from State and Federal funding sources, more pressure is placed on the City of Virginia Beach to fund these maintenance and construction projects through its Capital Improvement Program. According to a presentation given to the City Council on April 2009, 233 lane miles of roadway need to be maintained each year to keep up with the maintenance cycle, but for Fiscal Year 2010, only 190 lanes miles could be funded, a pattern seen in previous years that is resulting in an increase in the backlog of repairs and, if the trend continues, eventually a deteriorating roadway infrastructure.



With the exception of the identified Strategic Growth Areas and the new Town Center, the predominant development patterns are primarily car orientated in nature and has an unsustainable transportation infrastructure. Much of the new growth is suburban sprawl occurring in the transition zone northerly of the Green Line. For example, the Municipal Complex, where approximately 3,500 city employees work, is a sprawling complex in the transition zone requiring employees and those who have with business with the City with little option but to drive. As traffic increases, so does congestion on the existing roadways.

Traditionally, the solution to congestion has been to increase capacity of the roadways and intersections. The adjacent graphic shows the intersection of Virginia Beach Boulevard and Independence Boulevard, an intersection which has been widened to 12 lanes in order to accommodate the traffic levels. This giant intersection is not only intimidating to car drivers; it creates a huge barrier to those wishing to use alternative modes of transportation such as walking, bicycling and transit. This results in people getting in their cars to make trips that could easily be made by foot or bike, which then increases traffic at the intersection, which in turn must be accommodated by additional lanes, thereby resulting in a spiraling cycle of unsustainable growth. Eventually, there will be no opportunity to increase the width of the roadways due to limitations in right of way; however, before that point is reached, the roadway will no longer function efficiently due to its size. Conversely, the infrastructure is not in place in the southern part of the community to accommodate the new sprawling development in the transitional zone. Many of the roadways in this area are narrow two lane roadways similar



TRANSPORTATION



to that shown in the adjacent graphic, with deep drainage ditches close to the edge and existing housing development which limit the opportunities to widen the roadways even if funds were available.

Complicating the issues is the fact that many of the residents who are moving to the transition zone are attracted by these idyllic country roadways and become upset and oppose the necessary functional changes for these roadways and do not make the connection that they are part of the problem.

VISION

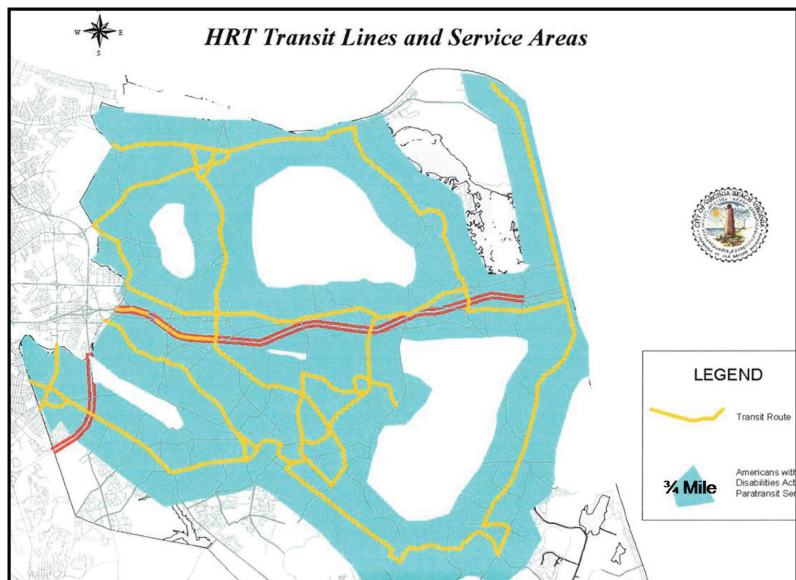
As long as the current car-orientated development patterns continue, it will be necessary to continually add capacity to the road network to maintain a functional system. Even without further development, the existing road infrastructure is strained and needs capacity improvements to alleviate congestion caused by the car-orientated development. Expanding roads forever to meet the needs of sprawl is extremely expensive, unsustainable, and will harm the quality of life in Virginia Beach.

One way to improve the efficiency of the road system and reduce the need to add lanes and widen intersections is through the use of technology in Intelligent Transportation Systems (ITS). Some efficiency can be achieved through improvements to the coordination of traffic signals and in incident management. The Virginia DOT operates a Hampton Roads Transportation Operations Center which uses technology to manage its roadways in the area. Virginia Beach is currently in the process of setting up its own Transportation Operations Center to manage its own roadways. This step, while critically important, is not by itself sufficient.

There is no single alternative that will eliminate the need for people to drive, but by developing a transportation system that provides viable choices to people, it is possible to reduce the proportion of the single occupancy vehicle trips. Additionally, having choices and options adds to the attractiveness of Virginia Beach to prospective businesses and residents. We heard multiple times during our visit the desire to retain the younger generation in the community. Many of the younger generation gravitate to communities where these choices of transit, bicycling and walking are readily available.

Transit Vision

Virginia Beach is part of the Hampton Roads Transit (HRT) system, which serves the seven cities within the Hampton Roads district. HRT contracts separately with each of the seven cities and approximately 30% of its revenue is provided by each City, with the specific amount based on the level of service provided. HRT provides both the fixed route service as well as the "Handi-Ride" service for those who are disabled and live with $\frac{3}{4}$ of a mile of a fixed service route. The current level of service is not regarded highly by residents; it runs for only 13 hours per day and most routes run on a 60 minute headway. The ridership is said to be primarily those who have no other choice. The below graphic shows the HRT fixed routes in Virginia Beach with the $\frac{3}{4}$ mile buffer on each side associated with access to the Handi-Ride service.

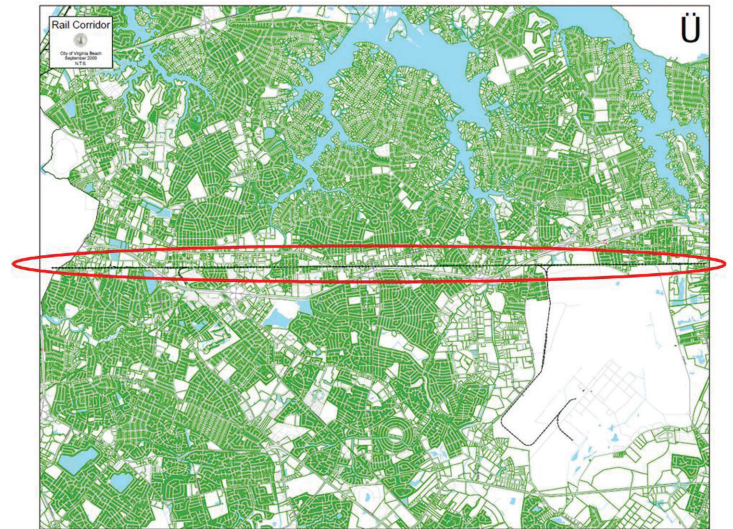


What is interesting about this graphic is that it appears that a large proportion of the developed area of the City is within $\frac{3}{4}$ miles of a fixed transit route. While we generally assume that people will comfortably walk

¼ mile, with a sufficiently comfortable walking or bicycling environment from homes and places of work and an attractive, efficient transit system, people will walk and especially bicycle greater distances. If these improvements were made, transit ridership could become a viable option to many of those who are looking for alternative ways to commute or make trips within Virginia Beach.

Light Rail Vision

In coordination with the Strategic Growth Area Corridor, Virginia Beach is looking to create a light rail corridor from Norfolk to the ocean front as shown in the graphic. This corridor could act as the spine for the transit system that could feed into it, thereby helping to create a more robust transit system.



Bus Rapid Transit Vision

Some of our discussions throughout the SDAT broached the idea of a potential future expansion of the Light Rail system with possible connections to the Municipal Complex to the South and along the Ocean Front. The potential uses and densities in the Strategic Growth Areas along the currently proposed Light Rail corridor could be sufficient to provide the fare box portion of a light rail system operating costs. However, the likely development patterns along potential additional corridors to the south would not be sufficient to support light rail. In this area, a Bus Rapid Transit (BRT) system would be a better alternative.

Bus Rapid Transit can provide the majority of the benefits of the light rail system, but typically at much lower cost and with greater route flexibility to meet the community's needs. BRT includes some or all of the following features:

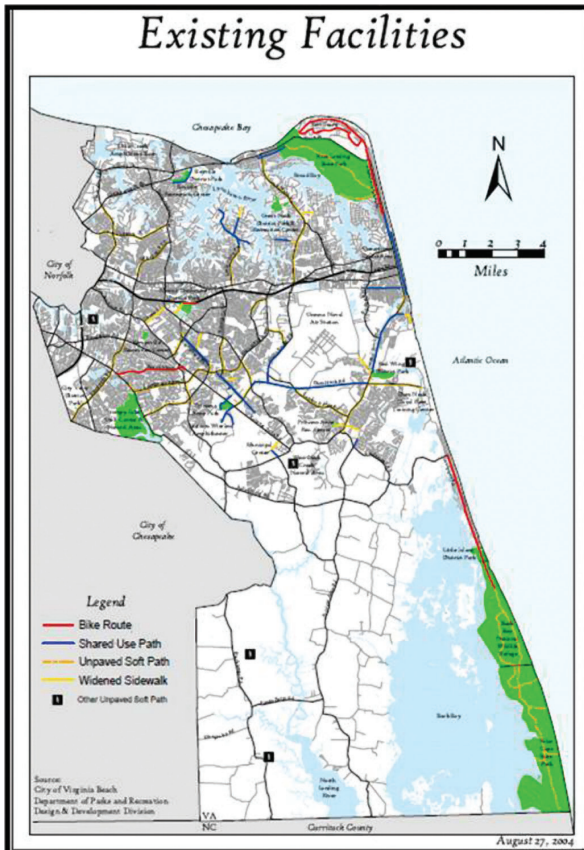
1. The system utilizes comfortable buses or specialized vehicles.
2. Vehicles travel on a combination of dedicated lanes or separated guideways (desirable) and roadways (when no other option is available and in areas of limited traffic congestion).
3. Buses utilize Traffic Signal Preemption (TSP), whereby a bus sends out an electronic message to traffic signals and the green phase is extended by a few extra seconds in order to speed the bus on its way.
4. High volume stops are designed to maximize bus loading and unloading (typically on platforms at the height of the bus floor and often with payment made in the platform and not on the bus or using some type of partial honor system).

On existing multilane surface roads, one lane of the road can be dedicated to buses, and perhaps carpools. In the transition zone, the Municipal Complex, hospital, and other office complexes not directly adjacent to Princess Anne Road could be served by a guideway along that route to service those facilities. The graphics show of examples of the type of facilities commonly associated with a BRT system. It should be noted that Virginia Beach currently has some elements of a BRT system in its dedicated Trolley Lanes along Atlantic Avenue.



TRANSPORTATION

Bicycle Facilities Vision



Virginia Beach has a growing network of bicycle paths, but they tend to be more effective as recreation facilities than as serious transportation facilities. If these facilities were instead planned and built as bicycle transportation facilities, they would serve better for destination related trips, but would still naturally fulfill recreational needs. Virginia Beach developed a Bikeways and Trails Plan in 2004 and although this document referenced the need for bicycling to be seen as an alternative mode of transportation, the existing infrastructure is not conducive to create bicycling for that purpose and is focused more on the recreational facilities. The adjacent graphic shows the Existing Bikeway Facilities shown in that plan.

When the plan was written, 43 percent of the existing bikeway system was made up of widened sidewalks. Widened sidewalks or sidepaths are not a suitable alternative to providing on-street means to accommodate the commuter type cyclist who, just like a car driver, wants to find the most direct and efficient route from point A to B. In many situations, sidewalks are less safe than on-street facilities because vehicles using driveways do not expect and therefore cannot adequately see speeding bicyclists on the sidewalk. The plan only references on-street facilities for low-volume, low-speed roadways, and on-street bicycle facilities are very rare in Virginia Beach.

The City should establish a clear goal to integrate bicycling facilities into all the roadways in the City. This could largely be achieved by reallocating some of the existing paved roadway width from travel lanes to a bike lane. The graphic shows a six lane divided highway, like several of those observed in Virginia Beach, which still provides a bike lane.

The AASHTO Green Book provides guidelines on appropriate lane widths on different types of roadways. Twelve foot travel lanes are often cited as the minimum width required for arterial type roadways when in fact the Green Book provides a range of lane widths from 10 to 12 feet and indicates that lanes widths less than 12 feet are adequate for low speed (less than 45mph) situations. Studies have found that there is little to no impact on safety or capacity by utilizing lanes as narrow as 10ft. Virginia Beach has the potential to increase substantially the on-street bicycle facilities by simply reviewing the existing lane widths and reallocating the space by restriping. As more facilities come on line, more bicyclists will feel comfortable taking to the roads, which will then raise their visibility and encourage others the take to the streets on their bikes.



Pedestrian Facilities Vision

Virginia Beach all too often has a disconnected pedestrian network. Sidewalks are often not continuous, and even when there are sidewalks a key section might be missing, such as a connection into an office park, retail development, or housing project. Many neighborhoods do not have sidewalks on at least one side of the street, despite being located on low speed, low volume streets where pedestrians and motor vehicles could mingle safely and comfortably. With many of the residential developments built on cul-de-sacs, there is little internal connectivity between the neighborhoods. This once again necessitates the need for the use of a car even to visit a neighbor

on the next street. There may be an opportunity to connect these neighborhoods for pedestrian and bicycle traffic by using existing utility or drainage easements that run between them. Pedestrian facilities should also be a component of the development review to ensure that connections are completed not just along the roadways, but within the development itself. Pedestrian facilities are an important part of the potential attractiveness of a transit service, since all transit trips start and end with a pedestrian trip.

Roundabouts

The existing arterial road infrastructure creates huge and often insurmountable barriers to pedestrians, bicyclists and transit riders. Most of these corridors are high speed, multi-lane facilities with as many as 12 lanes at the intersections. Roundabouts, although not necessarily appropriate for all of these large corridors, provide the opportunity to create road diets on multi-lane corridors. Since roundabouts do not need as many lanes at the intersections, typically the road section can be shrunk along a corridor with the installation of multiple roundabouts. Roundabout corridors are becoming more and more popular in the U.S. as the safety and efficiency benefits of them become more widely accepted. An example with a decade long track record showing the success and benefits of a roundabout corridor is in Golden, Colorado. Golden transformed an 84 foot wide, five lane highway business corridor into a four lane boulevard type corridor utilizing four multi-lane roundabouts ranging in diameter from 105 feet to 145 feet along its ¾ mile length. The aerial view shows the corridor with the roundabouts. The result was a much more aesthetically pleasing corridor. The graphics show the before and after corridor.



The improvements created a more comfortable pedestrian and bicycling environment, but also a more efficient and safer corridor. The roundabouts allowed business driveways to become right-in, right-out only, as vehicles could reverse their direction at the roundabouts eliminating the need for left turns mid block. The results were dramatic; while traffic increased by 40% in the five years after the project was completed, crashes were reduced by 60% and injury crashes were reduced 96%. Recorded vehicle speeds along the corridor were lower with the roundabouts, but the travel time was faster due to the reduced delays at the intersections. The corridor also saw significant economic development impacts, with a 60% increase in sales tax receipts following the completion of the project. Roundabouts are not a solution for all circumstances, but Virginia Beach should be utilizing them whenever possible and consider them along with other intersection controls as part of all projects.

TRANSPORTATION

TRANSPORTATION RECOMMENDATIONS

- Insure that adequate funds are being allocated to keep up with the maintenance of the existing infrastructure.
- Limit future development in the transition zone, instead concentrating development in areas with existing infrastructure and access to alternative forms of transportation.
- Look into expanding the transit service to increase headways during busy times and increase the length of available service during the day.
- Develop Light Rail as envisioned by the community on the current planned north-south corridor and potentially some day extending out to the airport, but use lighter Bus Rapid Transit for other lower traffic transit corridors.
- Review travel lane widths on existing roadways and restripe where possible to provide shoulder and bike lane facilities on all roadways.
- Develop a Complete Streets Policy to ensure that all modes of transportation will be accommodated on the road network. Street design should ensure that bicyclists and pedestrians feel comfortable, safe and welcome on every street in the city.
- Ensure that pedestrian, bicycle and transit issues are incorporated into the project development review process.
- Make roundabouts an alternative that is reviewed for all intersection improvements.

GREEN ECONOMY

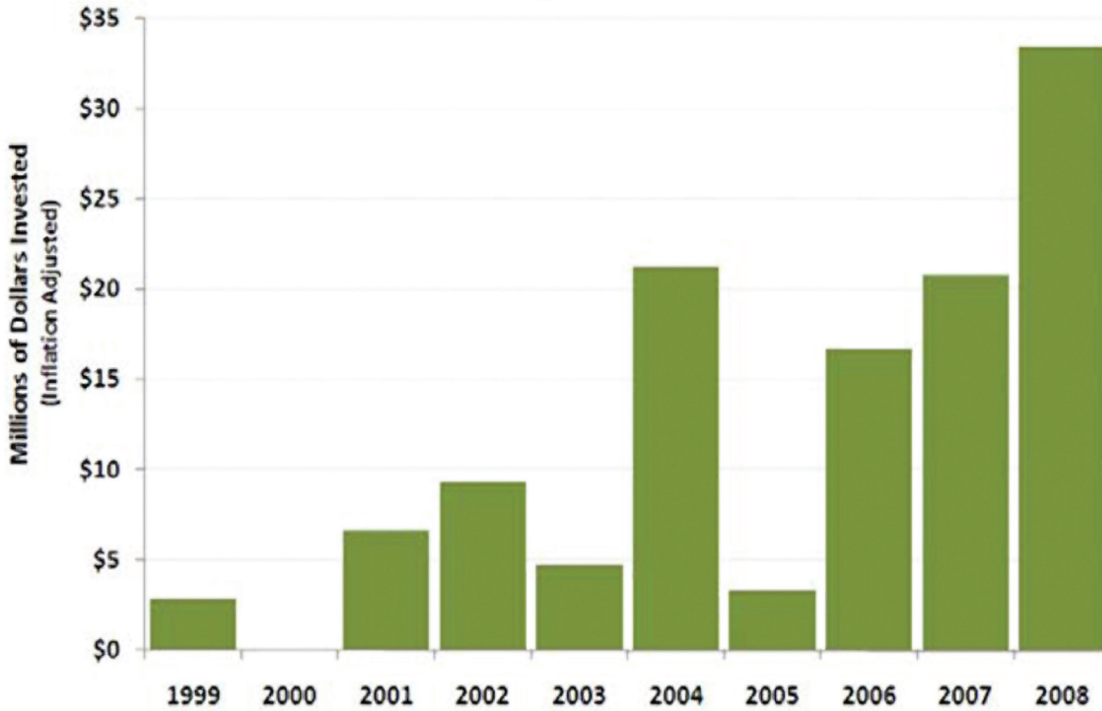


GREEN ECONOMY

BACKGROUND

The nation and world stand at a pivotal point in developing the green economy. The pace of investments in the green economy has grown rapidly and stands to increase further in the coming years. Globally, the market for wind, solar photovoltaic, biofuel, and fuel cell/distributed hydrogen fuel cell grew nearly 40 percent from 2006-2007 and is expected to triple within a decade Clean Energy (“Clean Energy Trends”. 2008. CleanEdge). At a national level, the passage of the American Recovery and Reinvestment Act (ARRA) of 2009 represented the first-ever large-scale investment in the clean energy economy, directing \$100 billion for renewable energy development, energy efficiency and weatherization, technological research, and workforce training and education.

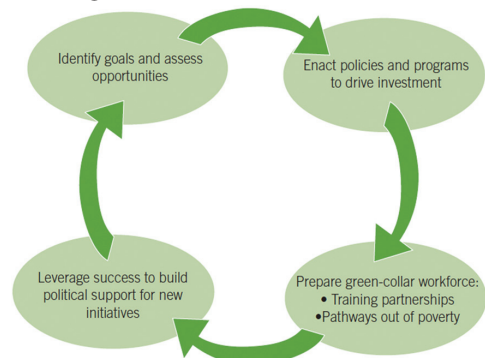
Venture Capital Investment in Clean Technology
VIRGINIA



These investments have created a range of fast-growing jobs making energy efficient products, maintaining renewable energy systems, researching new forms of renewable fuels, and installing efficient heating systems. Between 1998 and 2007, clean-energy jobs grew by 9.1%, while total jobs grew only 3.7% (Pew Charitable Trusts, 2009).

Looking forward, investments into the clean energy economy are poised to grow further and will continue to be a source of job growth. As this is being written, an unprecedented comprehensive climate and energy bill is being considered by Congress. While the ultimate details of a climate and energy bill will not be decided until final passage, one recent estimate found that a nationwide investment of \$150 million per year similar to the comprehensive climate bill being debated in Congress will generate 45,000 jobs in Virginia (Pollin, et al., Center for American Progress and the Political Economy Research Institute, 2009). With the green economy poised to grow substantially, cities like Virginia Beach are smartly considering how to capture a portion of this growth in their home communities.

Virginia Beach could benefit from a green economy strategic investment planning process, with broad input from residential, community groups, and institutional partners. Investments in the green economy can include both direct monetary investment into a specific market by the government, as well as private or outside funds leveraged by an investment of non-monetary resources such



as staff time and or regulatory authority. Once markets, and accompanying jobs, are created, pathways into these positions should be developed so that local residents can benefit from new opportunities in the green economy. Finally, measurement and communication of successes is vital to building support for future investments.

Green Economy Resources:

- "Green Collar Jobs in America's Cities." Apollo Alliance and Green for All, 2008. www.americanprogress.org/issues/2008/03/pdf/green_collar_jobs.pdf.
- "The Clean Energy Economy." Pew Charitable Trusts, 2009. www.pewcenteronthestates.org/uploadedFiles/Clean_Economy_Report_Web.pdf.
- "American Recovery and Reinvestment Act: Moving American Towards a Clean Energy Future." 2009. www.whitehouse.gov/assets/documents/Recovery_Act_Energy_2-17.pdf.
- "Clean Energy Investments Create Jobs in Virginia." Center for American Progress and the Political Economy Research Institute. 2009, Pollin, et. al. http://images2.americanprogress.org/CAP/2009/06/factsheets/peri_va.pdf.

ASSESSMENT OF GREEN ECONOMY EFFORTS

Virginia Beach has taken several important first steps towards building a local green economy. While these are important first steps, there are areas for improvement in each.

1. Implement a public building retrofit program funded through the City's capital budget and committing to build all new public buildings to LEED Silver status.
2. Convene a series of working groups around sustainability issues, including the Joint Energy Task Force, Alternative Energy Task Force, Green Ribbon Commission, etc.
3. Use the development review process to encourage new private construction to be built to LEED standards
4. Challenge a major industry sector (the hotel industry) to become more sustainable through participation in the Department of Energy's Energy Star program.

VISION

The city of Virginia Beach is blessed with a remarkably diverse economy. Within its limits, the City has approximately 28,000 acres of agricultural land, a vibrant hospitality industry associated with its waterfront, large government employers including the City and military, as well as a strong residential housing market when compared other peer cities.

Virginia Beach should strive to become a national example of integrated, cross economy sustainability. Programs and collaborations aimed at improving the environment and creating jobs in the green economy can knit together often isolated parts of the Virginia Beach community. Homeowners and residents can benefit from fresher, more sustainable food through expanded farmers' markets. Unemployed and underemployed residents could be trained for new job opportunities created by pursuing energy efficiency investments in the hotel and restaurant industry. The military can serve as a starting point for a community-wide residential energy efficiency retrofit program which increases the expendable income of fixed-income military retirees. The construction industry can see further investment through more sustainable, compact development along the light rail corridor as well as improvements to existing public infrastructure.

RECOMMENDATIONS

- Continue Community Discussions. Residents participating in the SDAT assessment frequently cited their desire for greater communication from the city regarding its sustainability efforts. In a community with lingering skepticism about green initiatives and in which a full understanding of sustainability is not yet achieved, enhanced community discussions are an important step in developing political support for green economic development practices. In building such a planning process, Virginia Beach should strive to include as broad a range of stakeholders as possible. In particular, the city should actively seek involvement from its major institutions, including the military, Tidewater Community College and other higher education institutions.

GREEN ECONOMY

Newark, New Jersey Green Economy Planning
Newark Mayor Cory Booker, working with the Apollo Alliance, convened a year-long community green economy planning process with four steps:

Step 1: Collaborate and Assess

- Identify existing environmental and economic goals and strategies
- Gather existing research and data
- Brainstorm strategies that build on existing strengths
- Identify local leaders

Step 2: Engage

- Inspire community engagement
- Invite local input and involvement
- Draft core principles for green development
- Expand the table – plan outreach to other stakeholders

Step 3: Define Goals:

- Reconvene core working group members and new stakeholders
- Articulate goals and the opportunities and challenges for meeting those goals
- Identify knowledge gaps; work with national partners on research and data collection
- Continue brainstorming new potential allies and partners

Step 4: Refine goals; Brainstorm Strategies

- Identify best practices from other cities and communities
- Develop strategies to achieve local goals
- Identify green jobs training opportunities to connect to goals and strategies.

- **Grow the Energy Efficient Buildings Sector.** As global and national investment in renewable energy, energy efficiency, and renewable fuels increases, an entire range of new green jobs will be created. However, the most immediate opportunity for building the green economy is in energy efficiency. Nationwide, it is estimated that there are over 250 billion square feet of buildings in need of retrofits (Feinstein, Jeff and Butler, Michael. Schuster Group and Cascadia Capital). As Department of Energy Secretary Steven Chu said to describe the size of the opportunity: “When it comes to saving money and growing our economy, energy efficiency isn’t just low hanging fruit; it’s fruit laying on the ground” (June 29, 2009). The City should consider the following to capitalize on the Virginia Beach’s segment of the energy efficiency opportunity:
 - **Formalize the Public Building Retrofit Program:** The city should build off the initial successes it has had with retrofitting municipal buildings and committing to build new buildings to LEED standards by formalizing and expanding the retrofit program. In particular, the City should identify a dedicated level of annual investment into building retrofits, which is driven by an overall energy use reduction target. One example of where this has been done is in Philadelphia, where the Mayor Nutter’s Greenworks plan set a goal of reducing City government energy use by 30 percent by 2015.
 - **Create an Incentive or Requirement Program to Encourage Sustainable Building Practices in Private Buildings:** Cities can employ a number of different policies to ensure that newly constructed buildings are built to high efficiency standards. The strongest policies require all new buildings over a set number of square feet to build to LEED standards. However, it is also possible to incentivize more efficient construction practices through expedited permitting, density bonuses, or financial incentives. If citywide adoption of green building regulations or incentives proves politically impossible, Virginia Beach should consider piloting them in the strategic growth areas where the highest amount of new development will occur.
 - **Create a residential retrofit program to capitalize on the large residential energy efficiency market:**

The largest opportunity to build a local energy efficiency market is in the residential sector. Virginia Beach, like all cities, has an aging housing stock, which is in need of energy efficiency upgrades. Recent studies estimate that investing \$2,500 in a home retrofit program could produce an energy

Efficiency Opportunities in Virginia	
Average Energy Bill*	\$2,228
Retrofit Cost**	\$2,500
Annual Savings**	\$668
Payback	< 4 years

saving of about 30 percent per year (“Green Prosperity: How Clean Energy Policies can Fight Poverty and Raise Living Standards in the United States.” June 2009. Pollin, et al.). Because of these immediate opportunities and short payback period, energy efficiency retrofits on private residences hold the potential to directly create jobs in the auditing and construction work of installing new insulation, windows, and heating systems, as well as to generate additional local economic activity from captured energy costs savings.

Energy Efficiency Resources

Some examples of city-level programs aimed at financing and providing energy efficiency retrofits to private homeowners are the Long Island Green Homes Initiative, the Seattle Green Building Capital Initiative, and the Milwaukee Energy Efficiency (ME2) Initiative. Of note when considering a possible residential retrofit program in Virginia Beach is that it is well positioned to meet one of the primary challenge or residential energy efficiency programs – aggregating demand across a number of small residences. Because the city has so many retired military staff, it could be possible to work in collaboration with the military to advertise the program and provide a payback mechanism through existing relationships these residents have with their former employer.

Resources:

- Long Island Green Homes, <http://ligreenhomes.com>
- Seattle Green Building Capital, www.seattle.gov/mayor/PDF/090422PR-GBCIpolicyReport.pdf
- Milwaukee Energy Efficiency (ME2), www.cows.org/collab_projects_detail.asp?id=54
- “A Short Guide to Setting Up a City-Scale Retrofit Program” Center on Wisconsin Strategy, www.cows.org/pdf/rp-retrofit.pdf
- “Green Building Incentives That Work: A Look at How Local Governments Are Incentivizing Green Development”. National Association of Industrial and Office Properties. 2007. www.naiop.org/foundation/greenincentives.pdf
- “Green Cities: How Urban Sustainability Efforts Can and Must Drive America’s Climate Change Policies”. Living Cities. May 2009. www.livingcities.org/download/?id=12
- “Green Prosperity: How Clean Energy Policies can Fight Poverty and Raise Living Standards in the United States.” June 2009. Pollin, et al. www.peri.umass.edu/fileadmin/pdf/other_publication_types/green_economics/green_prosperity/Green_Proprosperity.pdf

- **Create the Capacity to Manage Energy Policy at a Local Level.** In order to manage an expanded portfolio of sustainability initiatives, the City of Virginia Beach should assign dedicated staff to achieving sustainability goals. This capacity should be separate from any one department, allowing staffers to work across departments and search out opportunities for greater cross-departmental efficiency. Sustainability must be integrated into all functions of government, as well as the broader community.
- **Develop a Power Purchase Program for Businesses.** One way the City can engage its business community in sustainability efforts is by creating a power purchase program for small businesses, similar to the Boston Buying Power program created by the city of Boston in fall 2008. This program aggregates the energy needs of over 800 local businesses into an energy-buying group which procures energy competitively in the deregulated energy markets. Through joint purchasing, the Boston Buying Power program has saved its buying group 15% on electricity costs in the past year, saving participating businesses over \$1.5 million in energy costs (Steve Rumpler, Boston Department of Neighborhood Development. September 15, 2009). In addition, all the energy purchased through Boston Buying Power is at least 10% renewable-sourced, with options for higher percentages of renewable power at the business’s request.

Administering this project comes at a very small cost to the city of Boston. The procurement of energy is done through a professional contractor who is compensated through commission made on each purchase of energy. Because the aggregated demand lowers energy costs so deeply, the contractor makes a return while still saving participating businesses money. Under this arrangement, the city is only responsible for advertising and enrolling businesses in the program.

GREEN ECONOMY

Virginia Beach could adopt a similar program for its hospitality industries, challenging hotels and restaurants to go beyond the voluntary “Virginia Green” program and establish itself as a leader among Virginia cities. For more information on the Boston Buying Power Program see the City’s Request for Responses document in the appendices, as well as the program website at: www.bostonbuyingpower.com.

Request for Responses Energy Procurement and Contract Management Services For a Boston Small Business Sector Energy Buying Group



Thomas M. Menino, Mayor
City of Boston
Evelyn Friedman, Chief and Director
Department of Neighborhood Development

The City of Boston, in an effort to respond to the issue of the increasing cost of energy and its adverse effect on Boston’s small business sector, is issuing this Request for Response (RFR). The purpose of this RFR is to identify an energy broker/consultant, which would assist Boston’s small business community in the procurement of electricity and natural gas in the deregulated energy markets through the creation of an energy-buying group. Energy is an extremely complex commodity for small businesses to procure, especially considering today’s volatile energy market. It is the desire of the City of Boston to provide an opportunity for Boston’s small businesses to have much more control over their utility bills in this period of high market volatility and to obtain some certainty about their energy costs. This opportunity should reflect the City’s commitment to reducing CO2 emissions and the procurement of energy in a socially responsible manner.

Therefore, The City of Boston through its Department of Neighborhood Development’s (DND) Office of Business Development (OBD), requests responses to this RFR from qualified energy brokers/consultants to provide energy supply acquisition/procurement and performance-based energy management and sales services for a Boston Small Business Sector Buying Group (hereinafter sometimes referred to as a/ the “Buying Group”). The Broker/Consultant must possess a combination of energy consultant skills and the technology to perform energy auctions in addition to a sales and marketing/contract staff capable of accomplishing this initiative. The preference is for Brokers/Consultants that focus solely on energy commodities and are constantly conducting procurements in the electricity and natural gas markets.

- **Pursue Renewable Energy Investments and Engage Colleges/Universities in Workforce Training for New Industries.** Virginia Beach has great opportunities for local renewable energy research, development and production, including off-shore wind power and the development of a biofuels research facility. Virginia Beach should aggressively pursue these outside investments through its economic development authority, with support and assistance provided by the institutional and community partners convened through a community planning process. Virginia Beach is well suited to providing prospective renewable power generators is a skilled workforce. Any local workforce development strategy should be developed and managed by a multi-stakeholder partnership that includes educational institutions, labor unions, employers, community-based organizations, and the local Workforce Investment Board. Strategies must build on existing local assets, match with existing jobs and occupations experiencing job growth, and ensure equitable access to work and training opportunities.

Models of workforce training in renewable energy:

- An emerging wind turbine installation and technician program at Kankakee Community College (Illinois), to provide workers for a proposed 33,000-acre wind farm. See: <http://apolloalliance.org/uncategorized/vision-energys-1-billion-wind-energy-bet-in-illinois/>
- A Wind Energy Technology certificate offered through Kalamazoo Valley Community College (Michigan) which places graduates into positions with a local wind turbine manufacturer. See: www.kvcc.edu/careerguides/displayProgram.php?trsfr=NO&prog=WE.CERT
- A 1-year certificate and a 2-year associate degree in Renewable Energy Technology through Columbia Gorge Community College (Oregon). See: www.cgcc.cc.or.us/Academics/WindTechnologyPage.cfm

For more on existing renewable energy training programs,
see: <http://apolloalliance.org/programs/apollo-14/signature-stories/>

- **Capture Growth along Light Rail - Promoting Walkability and Preserving Open Space & Manufacturing.**
If the City is successful in building a light rail system through its strategic growth areas, it should serve as an anchor of for new development in the emerging city center. In addition to physically anchoring new development, it is also likely to serve as a catalyst for property value growth in the surrounding neighborhoods. According to the Denver Post (October 10, 2008), a recent study of home values in Denver showed that homes along light rail rose in value nearly 4%, while all others declined 7.5% between 2006-2008.

The city should capture a portion of this increased investment by creating a rail-line corridor tax increment financing (TIF) district, which could provide funding for a number of sustainable development projects along the line. In particular, TIF revenues could be used to finance the development of additional community spaces and facilities which provide Virginia Beach's downtown with a greater sense of place. They could also fund the development of local farmers' markets, or biking facilities as proposed elsewhere in this paper. Finally, they could also be used to provide financial support to encourage new development in the district integrate small scale renewable energy systems or achieve LEED certification, as a concrete demonstration of Virginia Beach's commitment to the green economy and sustainability.

MOVING FORWARD



The interest in sustainability throughout the nation and in Virginia Beach is palpable. There is a new understanding that acting on and investing in sustainability will reap huge benefits and save the taxpayers money and increase the quality of life and the environment. As a result, Virginia Beach has a unique opportunity to move forward on many of the recommendations in this report, possibly using the framework outlined below.

Make Sustainability the Theme of Public Conversation

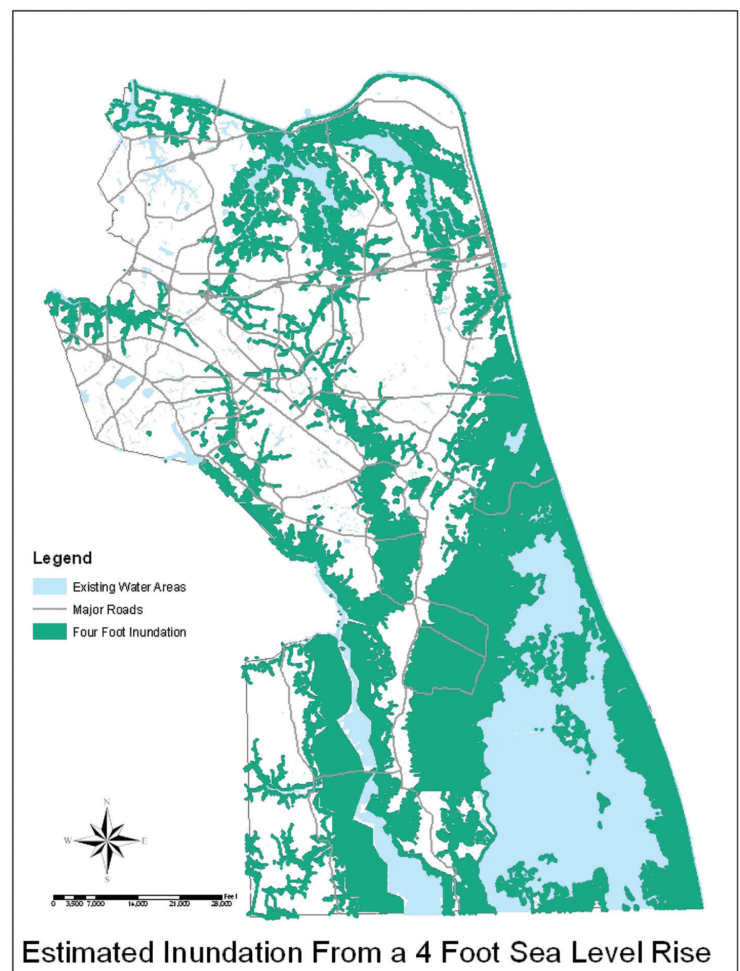
Sustainability should be the lens through which the new comprehensive plan and implementation steps are judged and should become part of the public conversation. Use measurable sustainability metrics and benchmarks, examined annually and reported on the City's web site, as part of all plans and significant city actions. Metrics should be used to evaluate whether public actions:

1. Promote urban design that adds to the sense of community;
2. Increase transit, bicycle, and pedestrian travel modes and generate fewer vehicle trips per unit than existing land use patterns;
3. Concentrated development patterns more than traditional in Virginia Beach;
4. Promote mixed uses, unless a very strong justification is provided for doing otherwise (e.g., NAS Oceana clear zones);
5. Promote public equity and ensure environmental justice;
6. Direct development to previously developed areas (grayfields) or previously developed areas that might be contaminated (brownfields) and otherwise conserve or restore natural systems; and
7. Create additional and sustainable jobs and economic activity.

Focus on Long Term Life Cycle Costs

All public plans, policies, and investments should be evaluated using a long time horizon. Major public actions should:

1. Create a positive benefit-cost ratio (benefits/costs > 1.0) over the long term and alternatives should be assessed to evaluate if a longer planning horizon would change the best decisions;
2. Be evaluated assuming that energy costs will rise significantly faster than the cost of inflation; and
3. Be evaluated assuming that sea level rise is inevitable over the next century, although the exact level of sea level rise is still unknown. Adaptation to sea level rise is critical.



MOVING FORWARD

Strengthen the Sense of Place

Public actions should be directed to creating a sense of place with a greater focus on amenities, central places and nodes that bring people together, and greater public choice. Public actions should:

1. Expand housing choice, retaining traditional attached single family homes but expanding other denser and mixed use alternatives with a wide variety of price points;
2. Expand and create mixed use town and village centers (strategic growth areas), especially in conjunction with planned light rail stops;
3. Preserve additional farmland and make agriculture more a part of Virginia Beach's citizens' lives by expanding the reach of farmers markets to all village and town centers;
4. Remove barriers to safe and desirable pedestrian and bicycle movement; and
5. Use urban design to enhance the identity and unique strengths of Virginia Beach.



Does this map represent the best of Virginia Beach?
It is what your tourists get when they arrive.

Improve Connections

Connections and the synergy that connections provide are the core of what makes urban life more than just a collection of stuff. Virginia Beach policies and actions must:

1. Improve transportation connections so that transportation connects in all modes (cars, transit, trucks, pedestrian, bicycle) and transportation does not create a moat dividing neighborhoods;
2. Improve connections between water (especially the ocean, the bay, and the Lynnhaven River) and people's lives;
3. Improve connections between agriculture and the average Virginia Beach resident; and
4. Improve connections between sustainability as an educational topic in school and everyday actions taken by the City and its citizens.

Seize the Moment- Get Ahead of the Curve

Sustainability requires a very long planning horizon and focusing on the bottom line not of the next year but the next century. For example, evaluate policies and actions to ensure that they:

1. Expand green jobs and businesses to position Virginia Beach for an economy that thrives with increasing energy prices, strict carbon regulations or taxes and/or cap-and-trade expenses, and a change in national values that rewards such businesses;
2. Expand clean energy production to replace polluting and high-carbon energy;
3. Create a plan for dealing with land use and infrastructure changes to address sea level rise over the next century (see, for example, PlaNYC 2030, New York's Sustainability Plan and climate change strategy); and
4. Use this report, and the plans and actions that Virginia Beach is working on, to proactively build a sustainability agenda, and reputation. Approach national rating groups (e.g., SustainLane.com and NRCD Smarter Cities) and share the word that Virginia Beach wants to lead.

Virginia Beach can be a model of sustainability, but it is not there yet. More work is needed to build the community and political consensus to become a great and sustainable city.

The first step is to make urban design and sustainability, real sustainability and not greenwashing, a part of every public policy conversation. Let's make Virginia Beach great for ourselves, our children, children's children, and our children's children's children. Let's make them all proud to stay in Virginia Beach and the proud of legacy we leave them.

ACKNOWLEDGEMENTS & TEAM



ACKNOWLEDGEMENTS & TEAM

THE AMERICAN INSTITUTE OF ARCHITECTS SUSTAINABLE DESIGN ASSESSMENT TEAM MEMBERS

WAYNE FEIDEN, FAICP - TEAM LEADER

Mr. Feiden is the director of planning and development for the City of Northampton, Massachusetts. His work helped Northampton receive the highest score for sustainable/smart growth efforts in Massachusetts, at least as measured by the state's scoring system for those efforts.

Mr. Feiden has also worked on sustainability projects in Hungary (Eisenhower Fellowship), South Africa (University of Venda-Fulbright), and as a consultant for other municipal clients. His publications include numerous research papers, monographs, and planning studies, with a focus on sustainability, subdivision regulations, performance guarantees, and decentralized wastewater treatment. Mr. Feiden is an adjunct faculty at both the University of Massachusetts and at Westfield State College.

Mr. Feiden is a Fellow with the American Institute of Certified Planners. He has a B.S.N.R. from the University of Michigan and a Masters in Regional Planning from the University of North Carolina and 28 years of planning experience.

Mr. Feiden previously served as a leader for the AIA design assessment teams in Staten Island, Tampa, and Port Angeles Washington. He participated on AIA teams in Lake Havasu, Longview Washington, Alpena Michigan, New Orleans, Central Louisiana, and Culver City California.

AARON HELFAND - ENVISIONING URBAN DESIGN (TEAM GRAPHICS)

Mr. Helfand is an associate with Judge, Skelton & Smith, Architects in Boston. He is an accomplished graphic artist, watercolorist, and photographer, and has participated in urban design charrettes in both the United States and England. Mr. Helfand received his BA in Art History & Practice from Williams College, and both a M.Arch and M.ADU from the University of Notre Dame.

SUSAN HICKEY, AIA - URBAN DESIGN AND VILLAGE CENTERS

Ms. Hickey is an architect with Gensler in their Chicago office. She works in Gensler's Planning and Urban Design Practice Area and is a member of their Sustainability Taskforce. Her project involvement includes corporate, campus, residential, commercial and mixed-use master planning. Ms. Hickey has been practicing architecture for 15 years. Ms. Hickey is also an adjunct design professor at Illinois Institute of Technology and is active in a number of community organizations addressing issues of urbanism.

Ms. Hickey has a Bachelor of Environmental Design and B. Arch from Ball State University and a M.Arch in Urban Design from the University of California Los Angeles.

MATT MAYRL - SUSTAINABLE AND GREEN ECONOMIC DEVELOPMENT

Mr. Mayrl is national Policy Director for the Apollo Alliance, which works to promote clean energy and a green economy. His expertise is in public finance, tax increment financing (TIF), government management, and energy and economic development policy.

He returned to the Apollo Alliance from the City of Boston, where he worked in the Mayor's Office and Office of Administration and Finance, advising the City's Chief Financial and Operating Officer on operational and financial management topics. Previously, Mr. Mayrl helped build the Apollo Strategy Center, housed at the Center on Wisconsin Strategy (COWS), coauthoring New Energy for States and New Energy for Cities.

Mr. Mayrl holds a Masters in Public Policy from Harvard University's Kennedy School of Government and a B.A. from the University of Wisconsin-Madison.

ACKNOWLEDGEMENTS & TEAM

MICHAEL MCGRATH, AICP - AGRICULTURE

Mr. McGrath manages the Delaware Agricultural Lands Preservation Foundation and the Planning Section in the Delaware Department of Agriculture. The Foundation has preserved 555 farms and over 150,000 acres of farmland in Preservation Districts and over 95,000 of those acres are now permanently preserved. Mr. McGrath leads the Department's efforts in statewide land use planning and agricultural development.

Mr. McGrath was born on a small vegetable farm in Southern New Castle County, Delaware. He operated the family greenhouse business for five years, marketing vegetable plants and ornamentals to retail outlets. In 1974, Mr. McGrath began working in the New Castle County Executive's office, where he led county efforts in such areas as farmland assessment and economic development. He was lead planner for the county in downtown revitalization efforts in Middletown and projects to bring affordable housing to the area.

He speaks extensively nationally on farmland preservation and the use of advanced geographic information systems in land use planning. He has served as president and executive committee member of the Philadelphia Society for Promoting Agriculture, the nation's oldest agricultural organization (1785). He is a member of the American Institute of Certified Planners.

KEITH WILSON - TRANSPORTATION AND COMPLETE STREETS

Mr. Wilson is the Transportation Senior Planner/Engineer for the Santa Fe Metropolitan Planning Organization in New Mexico. Mr. Wilson works on a variety of short and long term transportation planning issues within the Santa Fe metropolitan planning area, working to create a transportation system that includes rail, transit, bicycle, pedestrian and roadway as an integrated system.

Previously, he was the Transportation Planning Engineer with a Franklin Regional Council of Governments, a Massachusetts regional planning agency. During that time Mr. Wilson worked with local communities and the Massachusetts Highway Department to improve pedestrian, bicycle and roadway safety, often using innovative measures and was a strong advocate for roundabouts. Mr. Wilson served on the States Traffic Records Coordinating Committee and Highway Safety Improvements Program Task Force.

Mr. Wilson grew up and was educated in Scotland. He has a Bachelor in Engineering in Civil and Transportation Engineering from Napier University in Edinburgh. He is a member of the Institute of Transportation Engineers.

ERIN SIMMONS - AIA NATIONAL STAFF

Erin Simmons is the Director of Design Assistance at the Center for Communities by Design at the American Institute of Architects in Washington, DC. Her primary role at the AIA is to provide process expertise, facilitation and support for the Center's Sustainable Design Assistance Team (SDAT) and Regional and Urban Design Assistance Team (R/UDAT) programs. In this capacity, she works with AIA components, members, partner organizations and community members to provide technical design assistance to communities across the country. To date, Erin has served as staff lead on over 28 design assistance teams. Prior to joining the AIA, Erin worked as senior historic preservationist and architectural historian for an environmental and engineering firm in Georgia, where she practiced preservation planning, created historic district design guidelines and zoning ordinances, conducted historic resource surveys, and wrote property nominations for the National Register of Historic Places. She holds a Bachelor of Arts degree in History from Florida State University and a Master's degree in Historic Preservation from the University of Georgia.

VIRGINIA BEACH SDAT STEERING COMMITTEE

Clay Bernick - Environmental Coordinator, Virginia Beach Planning
Ross Brockwell, PE, Leed-AP - Infrastructure Asset Manager, VA Beach Public Works
Nicole Davilli, AIA, Leed-AP - President, Hampton Roads AIA
Dr. Bob Dyer - City Councilor, Centerville, Virginia Beach City Council
Karen Forget - Executive Director, Lynnhaven River Now
Steve Herbert - Deputy City Manager, City of Virginia Beach
Cynthia Whitbred-Spanoulis - Virginia Beach Economic Development
Rosemary Wilson - City Councilor At-Large, Virginia Beach City Council

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sdat@aia.org

The American Institute of Architects
Center for Communities by Design
1735 New York Avenue, NW
Washington, DC 20006-5292



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1735 New York Ave., NW

Washington, DC 20006-5292

Phone 202.626.7300

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