Middle Peninsula Planning District Commission 2010

SHELLFISH AQUACULTURE AND WORKING WATERFRONT INFRASTRUCTURE: MATHEWS COUNTY PHASE II

This project was funded in whole by the Virginia Coastal Zone Management Program at the Department of Environmental Quality rough Grant # NA09NOS1490163 Task 92 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.
The views expressed are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Commerce, NOAA, or any of its subagencies.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

As many coastal localities struggle with becoming less rural and more suburban, balancing growth, preserving coastal character and culture, and the delivery of public services, forms the basis for a local public policy conundrum. However amidst such changes, Mathews County has articulated a strong desire to preserve their working waterfront heritage, while exploring and encouraging the expansion of aquaculture within their County.

Therefore over the last two years Middle Peninsula Planning District Commission (MPPDC) staff have worked closely with Mathews County Planning Staff as well as aquaculture and working waterfront industry members to gain an understanding of current aquaculture and working waterfront challenges specific to Mathews County. Through the creation and assistance of an Aquaculture Working-Waterfront Steering Committee, consisting of aquaculture and working waterfront industry participants public policy solutions were developed to ease these challenges, and yet provide Mathews County with options to support and enhance aquaculture and working waterfronts in the county.

To continue to explore and develop public policy options for Mathews County, in phase II of this project, MPPDC staff focused efforts on developing the concept and framework of an in-the-water public aquaculture business park and relay areas. In general, the park and relay areas could be utilized by current aquaculture industry members, as well as hobby gardeners and entrepreneurs entering the industry. To gain local support and feedback, MPPDC staff presented these concepts to the Mathews County Industrial Development Authority (IDA) as well as to the Aquaculture Working-Waterfronts (AWW) Steering Committee. The IDA responded positively to the idea and passed a resolution on March 10, 2010, to support future MPPDC staff efforts in this project, while the AWW Committee provided essential local and industry feedback as to the ideal locations for the park as well as potential services that could be offered at the park. Finally, in conjunction with community support, the passing of HB 138 to allow the development of Aquaculture Opportunity Zones (VAC 28.2-602) provided legislative support to implement and ease permitting obstacles for the Mathews County In-the-water Aquaculture Park.

INTRODUCTION

In 2008, the Middle Peninsula Planning District Commission (MPPDC) staff worked with Mathews County Planning Department as well as Mathews County constituents involved in working waterfront industries and aquaculture to gain an understanding of the role these industries play within the County. With the help of an Aquaculture Working Waterfront (AWW) Steering Committee, consisting of industry participants in Mathews County, industry challenges were identified, including water quality, the market, and water use conflicts. This information provided direction for MPPDC staff to develop public policy recommendations that would ease some of the industry challenges, and ultimately support and encourage working waterfront industries in the County.

With a long history of maritime and working waterfront traditions, Mathews County has encountered recent coastal development pressures, an aging demographic as well as fishery stresses that have caused shifts away from a traditional water-based livelihood. Community leaders of Mathews County continue to articulate and discuss the following public question: "to what extent will our future economic fabric rely on the opportunities presented from a coastal environment and what public policies will govern such opportunities." Therefore, Phase II of this project focused on (1) working with the Planning Commission and Board of Supervisors to design and discuss specific policy strategies to strengthen the aquaculture industry and sustain working waterfront infrastructure, and (2) explore possible new policy strategies and initiatives to strengthen the shellfish aquaculture industry and sustain working waterfront infrastructure such as the concept of establishing shellfish aquaculture business incubator, maritime "in-the-water business park", and public shellfish aquaculture "alternative use" areas in Mathews County.

Additionally with legislative support from the passing of HB 138 (Appendix 2- 1) to allow the establishment of aquaculture opportunity zones within the Middle Peninsula, more opportunities to assist the current aquaculture industry and encourage future development of the aquaculture industry were presented.

IN-WATER PUBLIC AQUACULTURE AND MARITIME BUSINESS PARK AND AQUACULTURE OPPORTUNITY ZONES

As a unique business concept, Middle Peninsula Planning District Commission (MPPDC) staff contracted with Neal Barber, President of Community Futures, to develop the concept of creating an In-the-Water Public Aquaculture and Maritime Business Park in Mathews County. With an extensive background in business and economic development, Mr. Barber was specifically tasked with exploring how a traditional land based business park model could be transferred into a marine environment.

To gather details about the park and how the concept could be implemented in Mathews County, a variety of stakeholder meetings were held. First, MPPDC staff scheduled a meeting with professional stakeholders, including representatives from Virginia Marine Resource Commission (VMRC), the Coastal Zone Management (CZM) Program, as well as Mathews County to discuss the passing of HB 138 and how Mathews County may be utilized as a pilot site for Aquaculture Opportunity Zones (AOZ) (Appendix 1). As stated earlier, HB 138 allows the establishment of AOZs in the Middle Peninsula; however with limited interest and response from this bill, as well as VMRC not understanding the full legislative ramifications of the bill, the work completed to date by MPPDC staff has positioned the County as an ideal pilot site.

Following this meeting, MPPDC staff scheduled a local stakeholders meeting (Appendix 2) with Mathews County AWW Steering Committee to introduce the concept of the in-the-water business park and to gain specific information as to (1) the location(s) of the in-water component(s) of the park that are environmentally suitable to grow shellfish, (2) the possible location of on-land facilities (ie. docks, electricity, parking, boat launch, fuel, maintenance areas, cold storage, water and sewer infrastructure, etc.), (3) the types of services desired and needed at the park(s), and (4) the size of the park(s). Consequently through a mapping exercise with the AWW Committee particular locations – on land and in-the-water - ideal for the park as well as potential relay areas were identified by stakeholders. With this information, MPPDC staff were able to map locations using GIS (Geographic Information Systems). The map, which illustrated unassigned areas, currently leased grounds and Baylor grounds favorable for AOZs, was sent to VMRC for evaluation (Figure 1).

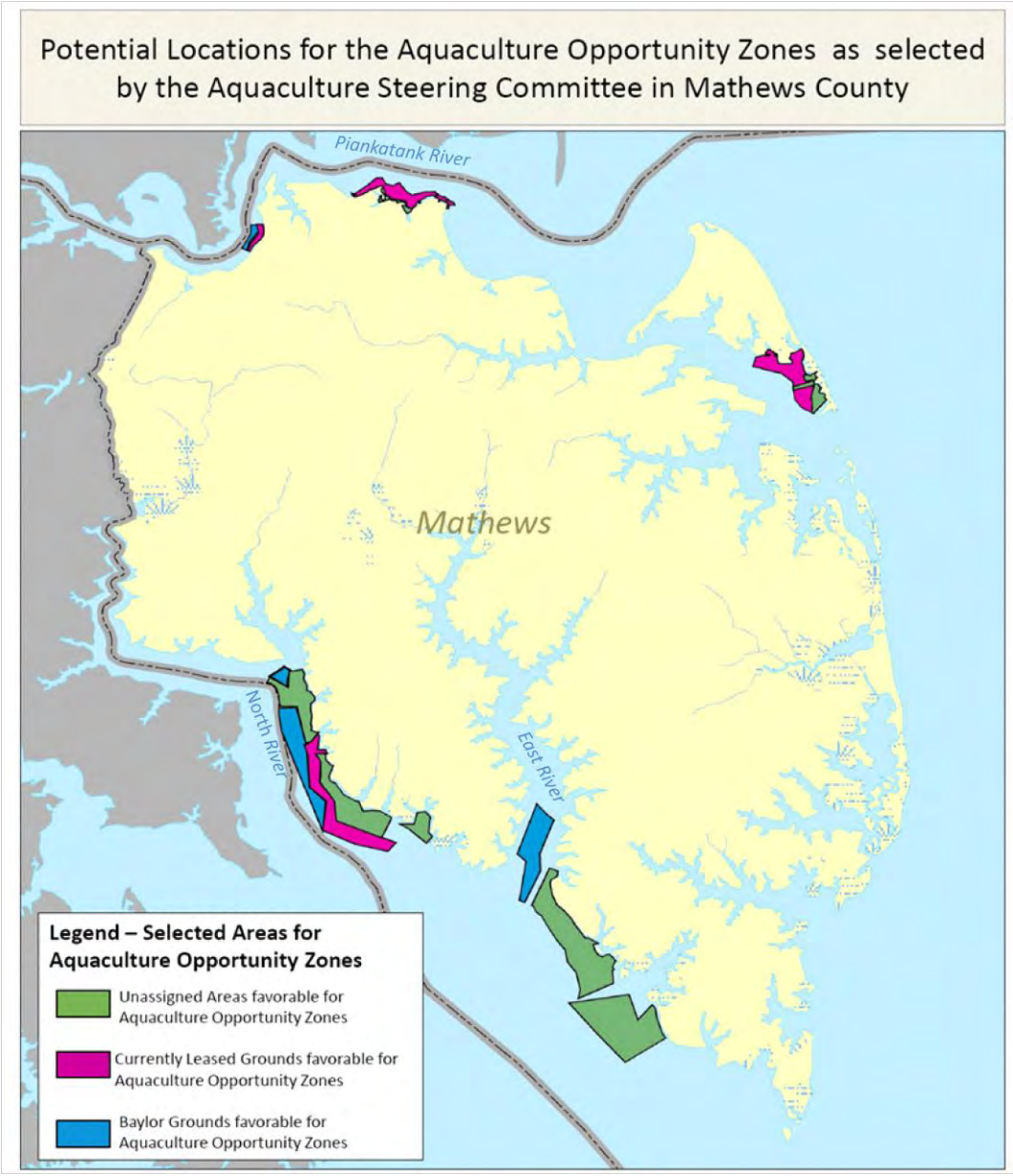


Figure 1: Map of Mathews County and potential locations for the Aquaculture Opportunity Zones as selected by the Aquaculture Steering Committee.

To date VMRC has identified 6-7 sites that range in size from 25 to 100 acres and are generally located inside each of the tributary rivers to Mobjack Bay, with at least one site in each river (ie. East River and North River). Also VMRC is in the process of having their engineers map these areas for the in-the-water aquaculture park as well as "alternative use" areas to verify ecologic compatibility with shellfish aquaculture. However with final adoption of the regulations in November and December 2010, VMRC expects more progress in the implementation and establishment of AOZs within the region.

The full report, describing the concept and business model options of the Mathews County In-the-water Aquaculture Park can be found in Appendix 3.

INTEGRATION OF YORK RIVER USE CONFLICT POLICY RECOMMENDATIONS

Through the course of this project, MPPDC staff worked closely with Mathews County to implement specific policy recommendations from the York River Use Conflict Management Project (NA07NOS4190178 Task 93.01) that would strengthen the shellfish aquaculture industry and sustain working waterfront infrastructure within the County. York River Use Conflict Recommendations that Mathews County had to consider included:

(1) Development and adoption of a coastal living policy;

(2) Denoting land, air, and water territorial boundaries within the County's Comprehensive Plan;

(3) Taking no action regarding aquaculture but instead monitor and evaluate how VMRC's new regulations address the use conflicts associated with this relatively new industry;

(4) Development and adoption of a policy to protect and preserve working waterfronts;

(5) Development of a waterfront outdoor light ordinance;

(6) Adoption of a policy restricting the use of floating homes; and

(7) Development of a master plan for public access infrastructure to ensure safe and equal access for all user groups to the waterways within the County.

Upon updating the County's Comprehensive Plan, Mathews County included approximately 135 references that both directly and indirectly related to the York River Use Conflict Committee Report and Recommendations integrated into the plan. ***Please refer to Appendix 4 which highlights the sections of the updated Comprehensive plan that reference the seven recommendations.***

ADDITIONAL PROGRESS

To gain local support the MPPDC staff also presented the concept of the in-the-water public aquaculture business park and the relay areas to the Mathews County Industrial Development Authority (IDA). Following a discussion of the conceptual framework and showing

the Mathews County Aquaculture Video, the IDA did pass a resolution supporting MPPDC staff efforts in developing the In-Water Public Aquaculture and Maritime Business Park. ***Appendix 5 provides meeting minutes and the signed IDA resolution.***

CONCLUSIONS

With support from state legislation, Mathews County, and the aquaculture and working waterfront industry, progress has been made in the development of an In-water Public Aquaculture Park that will provide in-water shellfish growing areas, on-land support facilities and services for aquaculture operations. While primarily serving private start-up aquaculture businesses, it has the potential to be used by established aquaculture businesses, hobby shellfish growers (gardeners), researchers and those entities engaged in reducing nutrients in water. Therefore the cumulative outcomes from phase II of this project hold promise for the future of shellfish aquaculture and working waterfronts in Mathews County.

PROJECT OUTCOMES

- Concept and framework development of an In-the-Water Public Aquaculture Park in Mathews County (Appendix 3).
- Creation of a partnership between Virginia Marine Resource Commission, Mathews County, and Mathews County Aquaculture Working Waterfront Steering Committee to utilize Mathews County as a pilot location for the development of Aquaculture Opportunity Zones and explore the legislative ramifications of HB 138.
- Integration of the York River Use Conflict Policy Recommendations in the Mathews County Updated Comprehensive Plan (Appendix 4) – with approximately 135 references made throughout the document.
- On March 10, 2010 the Mathews County Industrial Development Authority passed a resolution to support Middle Peninsula Planning District Commission efforts in developing an In-the-Water Public Aquaculture Park (Appendix 5).

NEXT STEPS

Funded through the Community Development Block Grant, MPPDC staff in partnership with Mathews County will explore the economic potential of establishing an aquaculture business park within the county. Specifically this project will focus on developing a business plan and feasibility study for the aquaculture business park in order to gain an understanding of planned management and staffing needs for the facility, the equipment, furniture, and material necessary for operation, the annual operating costs potential marketing strategies, at the projected number of jobs to be created and type of jobs and how these costs will be financed.

Appendix 1:

Aquaculture Opportunity Zone Meeting Minutes

Aquaculture Opportunity Zone Meeting

April 30, 2010

MINUTES

As Middle Peninsula Planning District Commission (MPPDC) staff continues to work on phase 2 of an aquaculture project in Mathews County and with the passing of HB 138 during the last general assembly (GA) session, there was a need to discuss how Mathews County could be utilized as a pilot site for the development of Aquaculture Opportunity Zones (AOZ). Therefore a meeting was held on April 30, 2010 at the Chesapeake Bay National Estuarine Reserve Building in Gloucester Point, VA to discuss such implications with professional stakeholders. Mr. Lewie Lawrence, Director of Regional Planning at the MPPDC, welcomed those in attendance. Stakeholders participating in the meeting included Jack Travelstead, Deputy Commissioner and Chief of Fisheries Management with Virginia Marine Resource Commission (VMRC); Chip Neikirk, Habitat Management Division at VMRC; Laura McKay, Chair Manager of Virginia Coastal Zone Management (CZM) Program; Nick Meade, Coastal GIS Coordinator with CZM; Steven Whiteway, Mathews County Administrator; John Shaw, Mathews County Director of Planning; Matthew Rowe, Mathews County Planner; Neal Barber, President of Community Futures; and Jackie Rickards, MPPDC Regional Planner.

1. Discussion: Where have we been and how did we get here?

Mr. Lawrence provided a brief summary of the work that has been done within Mathews County over the last two years with regard to the shellfish aquaculture industry. Beginning in October 2008, MPPDC staff have worked closely with select stakeholders, including shellfish aquaculturists (commercial and recreational), County staff, and Virginia Institute of Marine Sciences (VIMS) representatives, to generate an understanding of the current aquaculture industry and industry obstacles within Mathews County. The Aquaculture Working-Waterfronts Steering Committee has assisted in the development of public policy recommendations to address the identified industry obstacles, ultimately focused on enhancing the aquaculture industry. In October 2009, the MPPDC started the second year of the aquaculture project looking to develop a framework for a Mathews County In-the-water Public Aquaculture and Maritime Business Park.

2. Discussion of In-the-Water Public Aquaculture and Maritime Business Park and its' Components

Following Mr. Lawrence's review of the last two years, Mr. Neal Barber provided a description of the In-the-water Public Aquaculture and Maritime Business Park concept and framework that he has developed under contract with the MPPDC. Mr. Barber also shared that a meeting has been scheduled with the Aquaculture Working-Waterfront Steering Committee in Mathews County on May 11, 2010, in order to gather specific details and feedback from county stakeholders – including an ideal location(s) for the park/relay area(s) as well as the types of services that are wanted or needed at the site.

3. Discussion of HB 138

Jack Travelstead explained that last GA session HB 138 was passed which allows for the establishment of AOZ within the Middle Peninsula. Currently there has not been much response from people asking for the creation of such AOZs within their jurisdiction; however Mathews County is an ideal pilot site for AOZs due to the work occurring with the aquaculture industry over the last two years. Mr. Travelstead also mentioned that there is still a need to understand the full legislative ramifications of the bill, but VMRC will work to figure out the details.

4. Next Steps

VMRC- Mr. Travelstead

- Will research the question if a political subdivision can lease subaqueous lands?
- Will begin the process of having his staff assess available unassigned areas in Mathews that might be usable for establishing a maritime aquaculture business park.

MPPDC Staff

- Will research the implication of establishing a public moorage field and associated Virginia Department of Health and Department of Environmental Quality septic issue.
- Will work with Mathews County staff to address and identify key public access sites and working waterfront infrastructure that could be potential access sites for the park.

Marine Advisory Services– Tom Murray

- It was suggested that a survey be conducted to help identify and understand what level of interest there is in using a "fast track- permit free" aquaculture business park.
  - How and what services might a watermen, or the next generation 21st century watermen, be interested in accessing or using the maritime aquaculture business park for?
    i. What is the audience to ask such a question? Who is the next generation of aqua -entrepreneurs?
    ii. How can we all best identify and explore a new untapped business model, without aggravating existing industry folks who have established lease areas, pay fees etc. and who might not welcome the public in the business park?
    iii. It would seem that we need to reach out to watermen who are looking to add another "business model" to the normal crab season in the spring and summer and tong oyster season in the fall and dredge in the winter model.

<u>Outcomes</u>:

b. General consensus that establishing public relay areas around Mathews at some equal distance apart could be a good public service. How and for what purpose the public relay areas would serve will need to be further discussed.
   - Establishing "safe areas" for emergency use by industry.
   - Added benefit- offering oyster gardeners a "purging" area for recreationally grown oysters in polluted waters

c. General consensus that aquaculture uses under HB 138 (and in a public maritime park) could include any and all of the following aquaculture approaches:
    - On bottom cages; Floating cages;
    - Floating cages
    - Using the entire water column for aquaculture infrastructure
    - Full scale crop growing like the Northern Neck model

Appendix 2:

Aquaculture Working-Waterfront Steering Committee
Meeting Minutes

Middle Peninsula Planning District Commission
Aquaculture Working-Waterfront Steering Committee
Tuesday, May 11, 2010

Minutes

The Aquaculture Working-Waterfront Steering Committee held a meeting in the Mathews Active Lifestyle Center in Mathews, VA at 7 pm on May 11, 2010. Mr. Lewie Lawrence, Director of Regional Planning at the MPPDC, welcomed those in attendance. Steering Committee members in attendance were: Ken Kurkowski, Middle Peninsula Aquaculture Corp.; Janet Loyd, Maritime Foundation; Dennis Grydor, Briar Patch Oysters; Peter Perina, East Fields Farm; Janice Burns, Mathews County Board of Supervisors; and Mike Oesterling, Virginia Institute of Marine Sciences. Mathews County staff attending the meeting included Stephen Whiteway, Mathews County Administrator; John Shaw, Mathews County Director of Planning; and Matthew Rowe, Mathews County Planner. Also in attendance was Neal Barber, President of Community Futures; and Jackie Rickards, MPPDC Regional Projects Planner.

The primary purpose of this meeting was to introduce the Aquaculture Working-Waterfront Steering Committee to the concept of the Mathews County In-the Water Public Aquaculture and Maritime Business Park and to gather feedback as to the possible location(s) and services, as well as the overall concept of the park.

First, Mr. Lawrence updated the Committee on the work that has been completed during year 2 of this project and also presented information with regard to the passing of House Bill 138 (Appendix 2-1), which will allow for the establishment of aquaculture opportunity zones (AOZ) within the Middle Peninsula.

Next, Mr. Barber introduced the Committee to the concept of the park, in which he has been developing since November 2009. (An overview of the park can be found in Appendix 2-2).
Following the introduction, Mr. Barber asked specific questions in order to gather feedback from stakeholder group. The questions were as follows: (1) Where should the park be located water?, (2) Where should the park's on-land support facilities be located?, (3) What type(s) of infrastructure is needed and/or wanted at this park(s)?, and (4) What type(s) of services are needed and/or wanted?

Through stakeholder discussions the committee provided helpful feedback and new ideas:

a. A series of public relay areas for a variety of uses (ie. recreational and commercial purge sites) could be useful. It was offered that public relay sites could be very small and should be located around the county, 2-5 miles from various public and private access points.
b. The industry folks felt that a public aquaculture opportunity zone should consist of approximately 200 acres, with 5 acres of space offered to each user. However, they felt that 1.5 acres within a 5 acre zone should allow for ample working space and the

remaining 3.5 acres could serve as a buffer area and there is always the possibility that the bottom could be un-useful (ie. “junk” bottom).

c. With 200 acre area split into 5 acres per user, this would allow 40 AOZ units, however the industry folks felt 40 units might be too high a density. Therefore they felt there should be some spacing between areas. In the planning process there should be consideration of reducing the number of units, or assigning the “best” bottom areas first and leaving the poor bottom area un-used.
d. For up land access, the Committee recommended that the in-water component be no more than 5 miles from land but 2 miles would be best.
e. A new idea, presented by Mr. Oesterling, could ease reactions to this concept from existing watermen. Users of the park would be allowed entry into the park for up to 2.5 years. During this time, the user could test technology, perfect a growing strategy, apply for permits and a new lease area and then at the end of the 2.5 years, graduate out of the park and work a new lease area. There was support for this type of idea.

Overall the Aquaculture Working-Waterfront Steering Committee agreed that they saw this park more for people trying to get into the industry, rather than those who are currently in the business. Mr. Kurkowski mentioned that there may be obstacles with local helsinger fishermen in obtaining certain/ideal locations for the park due to fishing interests within the Mobjack. Also Mr. Lawrence mentioned the idea that there may be a possibility of breaking parts of Baylor in order to create an AOZ for the use of the public. However the details and the implications of this will need to be worked out by VMRC.

The group went through a mapping exercise focused on identifying locations for the in-water component of the business park (A map of the selected locations can be found in Appendix 2-3). Some locations identified by the group were unassigned; some locations are currently under lease, but not actively used; some locations are Baylor. Locations include: North River because it has a firm bottom; and the Piankatank/Mobjack Bay Area.

The information gathered during this meeting will be transferred to VMRC.

A next meeting of the Aquaculture Working-Waterfront Steering Committee will be scheduled once VMRC has had the time to respond to the plethora of information gathered at this meeting.

Appendix 2-1: House Bill 138 relating to the creation of aquaculture opportunity zones

VIRGINIA ACTS OF ASSEMBLY -- 2010 SESSION

CHAPTER 27

An Act to amend and reenact § 28.2-603 of the Code of Virginia, relating to creation of aquaculture opportunity zones.

[H 138]

Approved March 4, 2010

Be it enacted by the General Assembly of Virginia:

1. That § 28.2-603 of the Code of Virginia is amended and reenacted as follows:

§ 28.2-603. General oyster planting grounds; aquaculture opportunity zones.

A. Waterfront that is not already assigned or reserved for the riparian owners, and the beds of the bays, rivers, and creeks and shores of the sea lying outside the limits of navigation projects adopted and authorized by the Congress and not required for the disposal of materials dredged incident to the maintenance of such projects, and grounds other than public oyster beds, rocks, or shoals, as defined by law and included in the Baylor survey, may be occupied for the purpose of planting or propagating oysters, including the use of temporary protective enclosures in compliance with this chapter and Commission regulations, and may be leased by the Commissioner upon the receipt of a proper application.

B. The Commission shall establish commercial shellfish aquaculture opportunity zones for the placement of temporary protective enclosures as set forth in § 28.2-603.1, in the waters off the shores of the Northern Neck, the Middle Peninsula, and Tangier Island. Such zones shall be established by regulations. The regulations shall prescribe (i) the location of such zones; (ii) the proper procedures for the maintenance of such zones, including the (a) proper placement and handling of gear and other apparatus so as not to create a safety hazard and (b) seasonal and time-of-day use of such zones; and (iii) penalties for violations of the regulations. Once established, such zones shall be exempt from the provisions of §§ 28.2-606, 28.2-607, and 28.2-608, §§ 28.2-612 through 28.2-615, and 28.2-617. The Commission may establish a single fee for the application and use of the aquaculture opportunity zones.

Appendix 2-2:

Mathews County
IN-THE-WATER
PUBLIC AQUACULTURE & MARITIME BUSINESS PARK

Transforming a traditional land based business park model into the marine environment

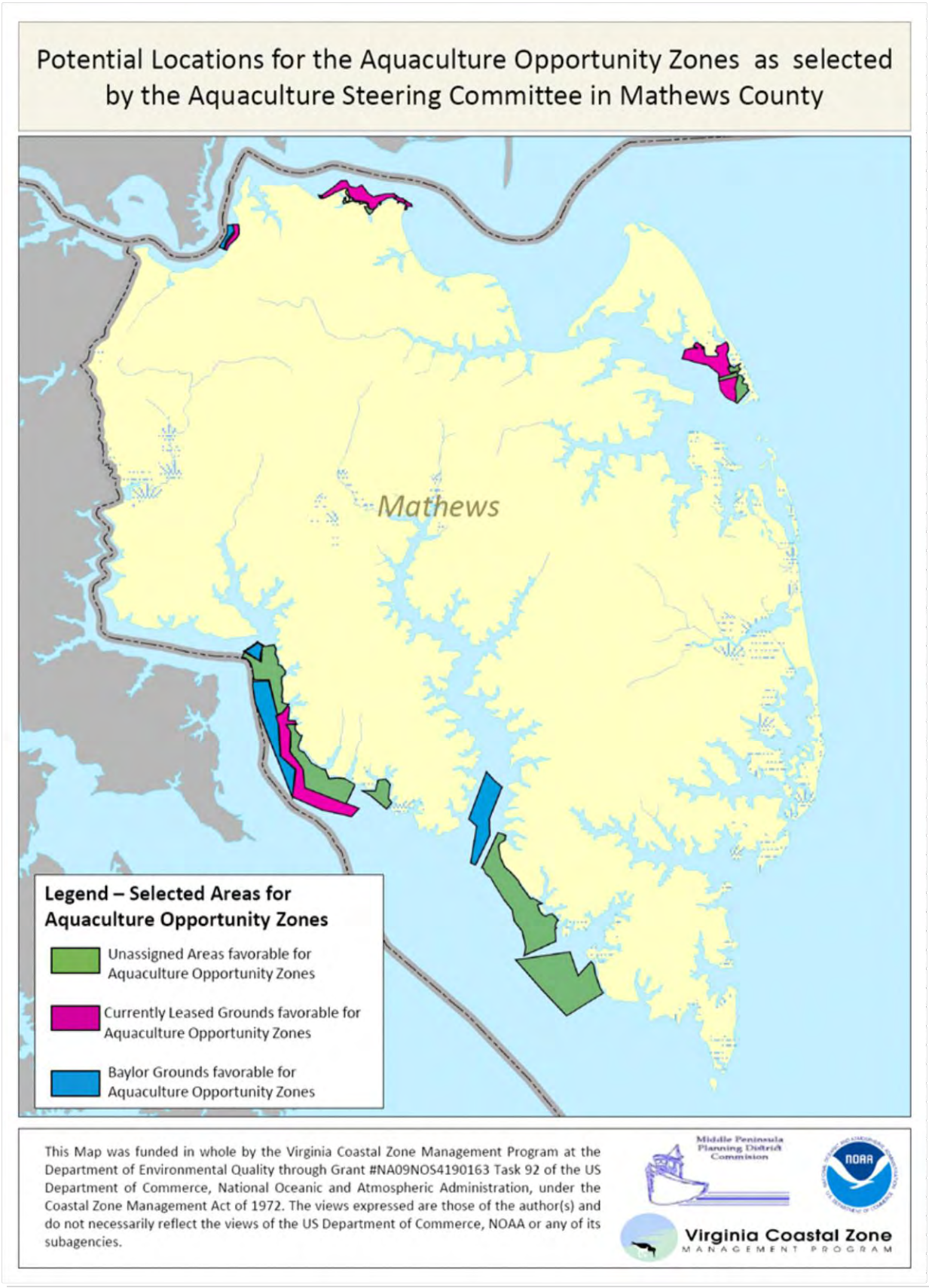
GOAL- Strengthen the maritime coastal economy by leveraging the maritime assets of Mathews County to facilitate employment opportunities and improve water quality.

1. **Concept**: Designate and manage public areas in the tidal waters of Mathews County to grow shellfish (primarily oysters) by watermen/aquaculturists and establish and on-land support facility for the needs of the maritime and aquaculture industry.
2. **Facilities**:
   a. Public In-water operations: lease/sublease public areas for cages, floats or other structures used in growing oysters; selected public areas will need proper environmental conditions
   b. On-land operations: Construct or utilize existing facilities to support the in-water aquaculture operations, which may include a dock, electricity, parking, boat launch, fuel, maintenance area, cold storage, water, sewer, etc.
3. **Potential Services** of the Aquaculture-Maritime Park:
   a. Public aquaculture lease areas
   b. Public relay areas
   c. Public moorages
   d. Public crop insurance
   f. Business plan development
   g. Marketing and accounting
   h. Co-op service
   i. Sorting, grading, processing
   j. Other public services
4. **Auxiliary Services** to Improve water quality
   a. Water Quality Revolving Oyster Program
      i. Program to link volunteer oyster growers with water improvements. The park will serve as a central repository for donated oysters to clean water. Bi-annually donated oysters will be sold on the open market and proceeds will be rebated back to volunteer oyster growers.
   b. Nutrient Trading Bank-further assist with water cleanup initiatives related to Chesapeake Bay restoration.

This product was funded in whole by the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA09NOS4190163 Task 92

Virginia Coastal Zone

Appendix 2-3:


Potential Locations for the Aquaculture Opportunity Zones as selected by the Aquaculture Steering Committee in Mathews County
Mathews
Legend – Selected Areas for Aquaculture Opportunity Zones
Unassigned Areas favorable for Aquaculture Opportunity Zones
Currently Leased Grounds favorable for Aquaculture Opportunity Zones
Baylor Grounds favorable for Aquaculture Opportunity Zones
This Map was funded in whole by the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA09NOS4190163 Task 92 of the US Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972. The views expressed are those of the author(s) and do not necessarily reflect the views of the US Department of Commerce, NOAA or any of its subagencies.
Middle Peninsula Planning District Commission
NOAA
Virginia Coastal Zone
MANAGEMENT PROGRAM

Appendix 3:

Mathews County In-the-water Aquaculture Park – Concept Paper

Mathews County
In-the-water Aquaculture Park

Concept Paper

September 1, 2010

Table of Contents

I. Introduction

Over the past several decades Mathews County has seen a dramatic change in its economic base from an economy heavily dependent upon the bounty of the Chesapeake Bay to one that has little dependence on the working waterman. Endemic oyster diseases, changes in lifestyle and shifting market forces have resulted in a vanishing working waterfront and decline in the number of working watermen. The tradition of making a living from the tidal waters is well established in the culture and heritage of Mathews County. While there are desires to continue the traditions of making a living off the water, these traditional ways no longer provide for a financially decent living. New ways of growing and harvesting shellfish and finfish must be employed if watermen are to have a chance at earning a sustainable income.

Aquaculture practices for shellfish production have been successfully implemented in other regions of the nation as well as on the State's Eastern Shore. If these practices can be implemented on a broad scale, Mathews County may hold the potential for reviving the traditional waterman's way of life.

This paper explores an exciting new concept of creating an in-the-water aquaculture park providing shellfish growing areas and on-land support facilities and services for aquaculture operations. While primarily serving private start-up aquaculture businesses it has the potential to be used by established aquaculture businesses, hobby shellfish growers (gardeners), researchers and those entities engaged in reducing nutrients in the water.

This study evaluates the conceptual framework of establishing an aquaculture park along with the on-shore support facilities. The primary objective is to assess how such an in-the-water aquaculture park could be organized, managed and funded.

II. Executive Summary

The half-shell oyster market appears to be the most logical type of aquaculture that will be initially conducted in the aquaculture park. While other types of aquaculture have potential, oysters have well-established markets and watermen are familiar with the production methods.

The aquaculture park should serve as a "business incubator" for start-up aquaculture businesses with the leasing of small (possibly five acre) plots in the water for the production of shellfish. After a few years of growth these aquaculture businesses would move to more permanent locations in the County. The aquaculture park could also provide an area for transfer and cleansing/purging of shellfish from contaminated waters, support aquaculture research, and enhance nutrient reduction in the waters of Mathews County.

Here are summary findings and recommendations contained in this report:

Facilities – In-the-water

- The County, through the Mathews County Industrial Development Authority, would lease master areas (200 plus acres) from the Virginia Marine Resources Commission (VMRC) then sublease smaller areas (possibly five acres) to aquaculture operators.
- Request VMRC to designate the master lease areas as "Aquaculture Opportunity Zones" in accordance with House Bill 138 of the 2010 General Assembly (Appendix C).
- Five areas, Pianatank River, Milford Haven, East River, North River and Mobjack Bay have been tentatively identified as desirable for aquaculture production.

Potential Facilities – On-Shore

- On-Shore support facilities should be within 2 miles by water from the on-the-water aquaculture operations.
- The on-shore facilities should be located with easy access to a hard surface road able to handle truck traffic and have reasonable water depth and access at the dock for workboats.
- Minimum land facilities include; dock with loading/unloading capacity, electric power, parking for trucks and boats.
- Additional on-shore facilities could include; cold storage, water, equipment storage, fuel, boat maintenance area, boat ramp, etc.

Businesses Services

- The aquaculture park should be equipped to provide a range of business services to the watermen. These services can be available through an agreement with a third party such as the Middle Peninsula Business Development Program or through private professionals. These services could include;
    - Business plan development
    - Technical aquaculture guidance
    - Marketing and advertising
    - Community relations
    - Accounting
    - Graphic design
    - Legal

    - Insurance
    - Human resource management
    - Internet marketing
- A fact sheet on the costs and potential earnings/benefits of becoming an aquaculture business should be prepared and distributed widely to local watermen.
- Conduct interviews of existing watermen, high school and college students, and natural resource economists to gauge the interest and feasibility in establishing an aquaculture business.

Training

- The conversion of watermen in the county/region from traditional methods of oyster production to aquaculture will require training of existing watermen and individuals wishing to enter the business. In addition to the technical aspects of aquaculture there is the need to provide training in modern business practices. This training should be coordinated with existing state institutions such as VMRC, VIMS and VA Tech.
- Rappahannock Community College should be requested to establish a training program on aquaculture techniques and this program could be offered to Mathews High School students on a dual enrollment basis.
- Watermen should be encouraged to participate in "starting a business" training offered by the Middle Peninsula Business Development Program and other providers.

Organizational Structure

- Mathews County should own and develop the on-shore facilities in order to be eligible for grant funding for the development of the on-shore facilities.
- The Mathews County Industrial Development Authority (MCIDA) should lease the on-shore facilities from the County in order to be able to sublease portions of the on-shore facilities to private businesses without having to hold a public hearing on each lease agreement.
- The MCIDA should be the entity that leases and subleases the on-the-water and on-shore areas/facilities to individual watermen.
- The County should initially provide staff assistance for the management of the aquaculture park facilities. As the activities in the aquaculture park expand and revenue is generated staff could be hired or contracted with a private provider.

Finance

- Mathews County should apply for a Community Development Block Grant (CDBG) Planning Grant to assist in developing the information required to prepare a competitive CDBG and a US Department of Agriculture (USDA) Rural Business Enterprise Grant (RBEG) infrastructure grants for the development of the on-shore support facilities.
- Mathews should pursue applying for a USDA RBEG grant providing additional funding support for the on-shore facility development.
- A portion of the CDBG grant should be allocated as a loan loss reserve to encourage the private financing of the individual aquaculture ventures.
- The County should consider designating the aquaculture park facilities as a “Technology Zone” (Appendix A) to be able to provide additional incentives to the individual aquaculture businesses.

III. Conceptual Framework

The concept of an in-the-water aquaculture park in Mathews County consists of a designated area within the County's tidal waters that can be used for both the growing of shellfish (primarily oysters) by local watermen, aquaculturists, and entrepreneurs and for the on-land support facilities that would be necessary to support the aquaculture operations.

The aquaculture park is a new and exciting concept of providing a range of common services and facilities that a number of local watermen, aquaculturists, and entrepreneurs could use to grow, harvest and market shellfish. Portions of the aquaculture park could be leased to aquaculture businesses or to hobby shellfish growers, who are not interested in a commercial venture. The aquaculture park could also have auxiliary uses such as a nutrient bank to improve water quality or as a nursery for growing seed/spat in support of other aquaculture ventures. The concept includes a management organization that would lease the rights to use the bottom and water column over a specific water area, provide access to on-land support facilities, (such as a ramp, dock, parking, power, etc.) and potentially provide a range of business services.

This is a new conceptual framework for encouraging aquaculture production and there are no established models or examples to build upon. Traditional economic and business development tools over the years may provide a place to begin to look for successful models for business creation/expansion in an aquaculture park in Mathews County.

The traditional industrial park model, where a local government or an economic development authority purchases property and develops the property and resells it to businesses, could be an approach to the development of the aquaculture park. The development of the property in an industrial park often includes: clearing and grading the site, providing infrastructure such as water, sewer and storm-water management facilities and constructing an adequate access road. To enhance the marketability of industrial parks a number of localities have even constructed speculative shell buildings as a way to expedite the location of new businesses into the park. In most cases the property, land and building, is sold to a prospective business but, on occasion, the real estate is leased to the prospective business.

The second model often used to stimulate business development is the "business incubator". This model provides a building with leasable space for start-up business tenants. The concept is to provide a space

where fledgling businesses can locate for a number of years while they grow their business to a point that they can relocate to permanent space in the community. The business incubator typically provides some common facilities and services to the tenants; such as meeting space, copying equipment, mail service, and mentoring and business plan development. On occasion there are provisions for a variety of other business services such as: financing, marketing, accounting, insurance and legal counseling.

The third concept is that of a wholesale farmers market that is often used to spur agriculture production. This model establishes a central facility where agricultural products are brought in at harvest time from a number of contract producers and the products are then sorted, graded, processed, packed and shipped to established markets outside the area. This model relies upon a central facility that can receive and process the agricultural products and a management team that has the ability to negotiate contracts with external markets, negotiate contracts with local growers and the ability to manage various processing and shipping operations. The success of this model relies heavily on the willingness of the growers to produce the products and the skills and abilities of the management structure of the farmers market.

The concept of the aquaculture park is likely to have components of all three of these models: industrial park, business incubator and farmers market. In addition, because of the demonstration character of the aquaculture park there may be some components set aside for research and development, nutrient reduction and/or an oyster purging area. If facilities are well established and readily available, it is possible to support advanced research on shellfish production at the aquaculture park from various state educational institutions such as the Virginia Institute of Marine Sciences (VIMS), Old Dominion University (ODU) and/or Virginia Tech.

Given the need to reduce nutrient loading in the Chesapeake Bay, a portion of the aquaculture park could be set aside for a permanent shellfish growing area where harvesting would be done only to sustain a given level of nutrient reduction capacity. The aquaculture park should have a positive net nutrient reduction impact on its adjacent waters based upon the characteristics of the water body and the level of aquaculture carried out.

Another auxiliary use to the aquaculture park could be a temporary relocation area where oysters from contaminated waters are deposited to allow time for these filter feeders to purge themselves of harmful bacteria and/or toxins. If the aquaculture park has areas distributed

around the County the local aquaculture businesses could utilize the aquaculture park areas as relay/purging areas when their leased grounds are threatened with water quality issues or condemned for shellfish production by the Virginia Department of Health. Often these water quality issues impacting existing aquaculture businesses are a result of sudden occurrences such as a pollutant discharge into the water or a stormwater event. This results in closure of a shellfish area for limited periods of time. During these times when the private leased grounds are closed for direct shellfish production the aquaculture park could serve as an area for the oysters and other types of shellfish to remain until they have cleansed and purged themselves of pollutants or toxins.

IV. Aquaculture Park

a. Facilities

If the aquaculture park is to be successful a number of in-water and on-land facilities will need to be available to watermen, aquaculture businesses, and hobby growers, to carry-out their aquaculture operations. While shellfish aquaculture could support the growing of clams, mussels and oysters, the most likely aquaculture operation will be the growing of oysters. Due to the Chesapeake Bay's perfect mixture of salt and fresh water, the native Virginia oyster once naturally thrived and supported an entire commercial fishery. Given the reliance of past watermen on this fishery, there is a rich history in harvesting and growing oysters in Tidewater Virginia, and through the years this traditional industry has transformed itself from various harvesting techniques (such a tonging, nippering, dredging and scraping) to today's form of aquaculture. The most likely and lucrative market is the fresh oyster in the shell, "half-shell market", used in restaurants and retail outlets. The shucked oyster is a potential but the scale of operations necessary to support shucking is likely beyond a start-up aquaculture business or waterman. While mussels, shrimp and clams could potentially be grown, there is limited knowledge of the aquaculture practices for these species among local watermen, aquaculturists, and entrepreneurs .

The aquaculture park will most likely be established in waters controlled by the Virginia Marine Resources Commission (VMRC) and leased to the entity that will manage the aquaculture park. Virginia law did not allow for the sublease of publicly controlled oyster grounds until legislation, House Bill 138 (see Appendix C), was passed during the 2010 session of the General Assembly. This legislation provides a mechanism for a master lease for aquaculture purposes and subleases to individual watermen. The Marine Resources Commission has yet to establish the implementation procedures for this legislation.

While oysters can be grown on the bottom of the waterway, it is more likely that the watermen, aquaculture businesses, and hobby growers will choose to grow oysters in the upper levels of the water column to prevent disease and predators from attacking the oysters. There may be circumstances where combinations of growing techniques, on the bottom and in structures in the upper levels of the water column, are carried out.

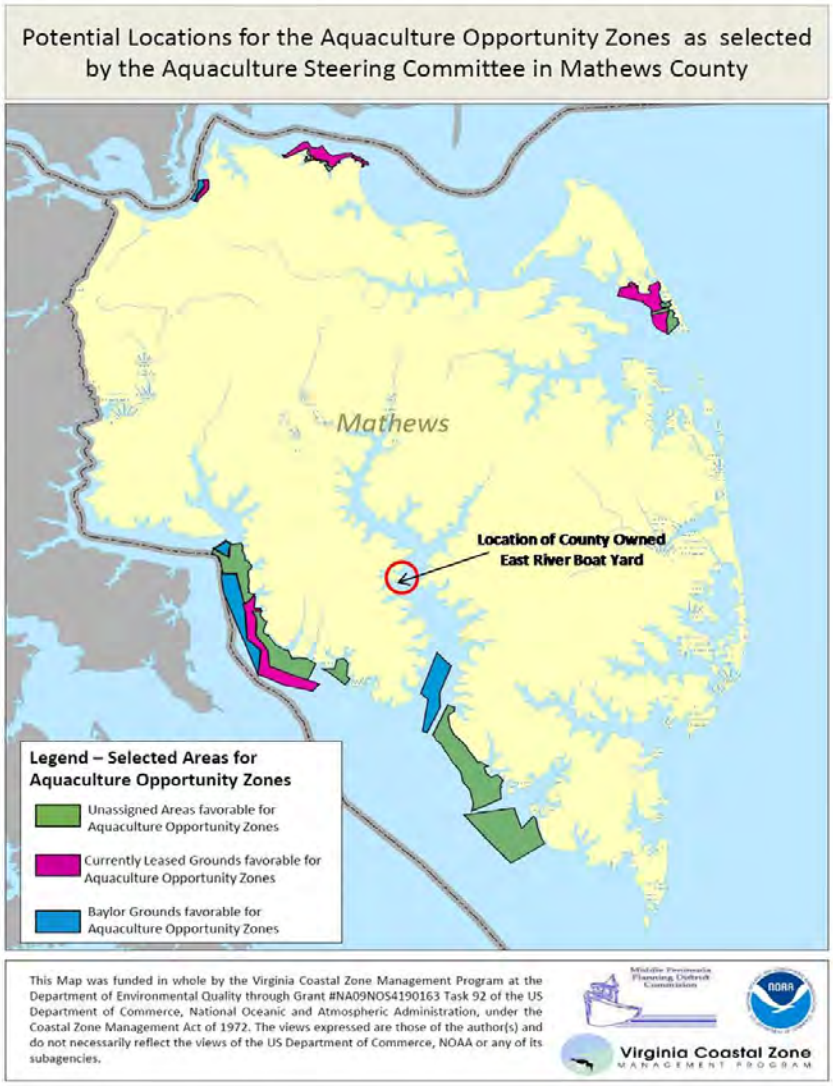
The facilities that may be required to support the in-the-water operations may be; boundary markers delineating the leased/subleased areas and cages, floats or other structures used in the growing of the oysters.

Here are some of the environmental criteria that may be used to identify potential water areas for the aquaculture park:

- Water quality
  - Salinity
  - Nutrients
  - Nearby shellfish condemnations
  - Proximity to marinas
- Physical characteristics
  - Depth of water
  - Exposure
  - Closeness to on-land water access facilities
  - Wave and wind action
  - Presence of submerged aquatic vegetation
  - Bottom depth and conditions
  - Tidal flushing

The local Mathews County Aquaculture Working Waterfront Steering Committee (MCAWWSC) recommended five general areas in the waters of the County for consideration for the aquaculture park. These included sites on the Piankatank River, Milford Haven, East River, North River and Mobjack Bay. The

Steering Committee recommended that each master leased area be about 200 acres in size with the subleases to individual aquaculture businesses being around 5 acres. The Marine Resources Commission is now reviewing these designated sites to determine if there are any unleased bottom areas available in these areas.



While aquaculture activities occur in the water, there is the need for a broad complement of support facilities located on land. The size and nature of the aquaculture operations will play a large part in determining the type and character of the support facilities needed on land. In addition, there may be specialized functions or services provided that will be integral to the business plan of the aquaculture

park such as equipment maintenances facilities, processing facilities, cold storage, etc.

MCAWWSC recommended that the on-shore facilities be located within two nautical miles from in-the-water aquaculture operations.

Since relatively small scale oyster “grow-out” aquaculture is the most likely initial endeavor, it is proposed that the minimum land-based facilities should include:

- Dock with loading/unloading capability
- Electric power to the dock
- Parking areas large enough to handle truck turn-a-round

Desired additional land-based facilities could include:

- Equipment storage area for cages, floats, nets, boat trailers, etc.
- A boat launching ramp
- Fuel
- Boat maintenance area
- Incubator tanks
- Cold storage
- A packing and/or shipping building
- Water
- Sewer

Here are some criteria that could be used in evaluating land-based facilities in support of an aquaculture operation:

- Ownership
    - Publicly owned
    - Privately owned – owner willing to sell
    - Publically owned – adjacent owner willing to sell
- Land use/site characteristics
    - Compatible adjacent land uses
    - Zoning compatible
    - Condition of the site
    - Useable structures
    - Depth of water
    - Water quality
    - Environmental issues/conditions
    - Historical significance
- Access
    - State maintained hard surface highway – truck traffic
    - Adequate hard surface private road with a road maintenance agreement
- Parcel size
    - Less than 1 acre

    - 1 to 2 acres
    - 2 to 5 acres
    - 5 to 10 acres
    - 10 acres or more
- Utilities
    - Electricity
    - Water
    - Sewer

b. Services and Functions

The aquaculture park could be developed either as a “distributed business model” where subaqueous land and on-shore facilities are leased to individual watermen to carry out their own aquaculture enterprises or on a “consolidated business model” where certain business functions are conducted through a single organizational entity.

The “distributed business model” is the simplest to set up and administer since each waterman is his own business and there is simply a contract for the lease of the water area and whatever services to be supplied by the aquaculture park management.

Looking to the business incubator model as an example, the management entity of the aquaculture park could provide a variety of business services to the individual waterman. These services can be provided directly by the management entity or on a fee for service through third party providers. Some of the business services that could be provided might include:

- Business plan development
- Technical aquaculture guidance
- Marketing and advertising
- Community relations
- Accounting
- Graphic design
- Legal
- Insurance
- Human resource management
- Internet marketing

If the “consolidated business model” is chosen then the “farmer’s market” structure serves as an example of the types of business functions that would be carried out by the management entity. In this model the watermen would grow the shellfish (oysters) under contract to the management entity. The management entity would then sort, grade, process, ship, and market the product to the customer (retail or wholesale).

There is the possibility of a hybrid combination of the “distributed model” and the “consolidated business model”, which could be developed serving the specific needs of the watermen.

A common issue facing aquaculture would be a catastrophic event (disease, hurricane, market, etc) that would devastate the shellfish or the support facilities. In this case, crop insurance to cover the value of the shellfish should be considered. Without crop insurance such a catastrophic event would surely lead to severe financial hardship for the watermen and the aquaculture park.

V. Finance and Incentives

There are several types of financing that may be required for the aquaculture park, including: financing for the infrastructure and management of the park and financing for the individual businessmen/watermen that would use the aquaculture park. As a general rule, “grant” funding is limited to public and non-profit organizations while loan and equity financing are available to for-profit and non-profit businesses. Various types of loan/debt instruments are also available to public, non-profit and for-profit entities.

- Infrastructure Financing – It would be preferable, from a financing point of view, to have the aquaculture facilities owned by a public organization, such as Mathews County or MCIDA. The two most promising grant sources for infrastructure development are the Rural Business Enterprise Grant (RBEG) program administered by USDA Rural Development and the Community Development Block Grant (CDBG) program administered by the Virginia Department of Housing and Community Development (DHCD). The CDBG program provides initial planning funding to assist communities in preparing the information necessary for a competitive construction grant application. The demonstrative nature of this aquaculture park project and its aim of conversion of traditional watermen to aquaculture businesses make this an attractive project for CDBG funding.

  The aquaculture park infrastructure can also be financed through a variety of debt instruments including: bonds issued by the IDA, government loan sources, and conventional financing from lenders and banks. The credit worthiness of the aquaculture park is based ultimately on the sound nature of the business plan for the operation of the park and an adequate revenue stream to pay the debt service. It is unlikely that any lender will finance 100% of the total cost of the infrastructure improvements, thus some equity will need to be present in the project. This equity could be in the form of cash, land, and/or grants from public sources or donations. Often, in order to be able to encourage private financial institutions to provide debt capital, a credit enhancement may be required. Credit enhancements can be in the form of a loan guarantee, a loan loss reserve or insurance. Some of the public sources of capital provide these credit enhancements.

- Operating Capital – In addition to the financing of the infrastructure, the aquaculture park management organization

will need capital to cover its costs of operations. In the typical business model of new business ventures, an operating loss would be expected in the first couple of years of operation. Again, a sound business plan with reasonable financial projections would indicate the amount and duration of any operating subsidy needed. With the exception of rare cases of the public sector providing a limited amount of short-term operating capital or research and development funding, most of the operating capital needs are provided for by equity in the project or from the lease proceeds.

There are some public techniques that can provide a revenue stream to cover operating expenses and/or debt services. The options include the establishment of a Local Technology Zone, creation of a Community Development Authority or the establishment of a Development District. All of these institutional structures dedicate future annual revenues (taxes or fees) or a portion of an existing revenue stream, to cover the costs of the project. A key question is whether businesses in the proposed aquaculture park will generate sufficient additional local revenues to be able to subsidize operating or debt service costs.

- Business Finance – The aquaculture park as conceived would provide opportunities for a number of watermen to use the facilities. There is likely to be the need for financing the start-up costs of establishing an aquaculture operation. The initial aquaculture equipment costs are higher than traditional oyster operations. Since these are for-profit businessmen the source of the capital will likely be private equity and/or debt. There are a number of sources of public supported debt, examples of which can be found through the Small Business Administration and Department of Business Assistance, USDA – Rural Development, but they all rely on the soundness of the individual business plan.

  Here are a couple of examples of types of oyster aquaculture and the related costs and revenue that could be expected:

  Spat on Shell - A tank, pump, and aerator for every 1000 bushels/year put in the water would be required -- which would result in an initial investment of about $5,000. This equipment should be used during many years of production.

  Shells to set the larvae would cost about $1.00/bushel or less, and the larvae are about $10,000 for 1000 bushels of shells.

This is an annual investment of about $11,000 to place 1000 bushels of “spat on shell” in the water. If you are able to harvest 1 bushel of marketable oysters for each bushel of seed oysters at $30/bushel then you would gross $30,000. Recent production has resulted in more than one bushel of marketable oysters for every bushel of seed at some sites. Growing the seed oysters in cages accelerates the growth rate and protects them from cow-nose ray predation.

Cage Aquaculture -- Cages and seed are required. Cages tend to produce 50,000 oysters at a cost about of $4,000. Cages can be used for several years’ production. Seed oysters cost between $500-$1,200 for 50,000 oysters, depending on their size. If 60% grow to marketable size, you would sell 30,000 market oysters at $.20 each (more possibly), or a total sum of $6,000. An individual would normally set as many units of 50,000 oysters as he needed to make a living. The maximum one person could grow would be around 500,000 oysters, but most persons would grow fewer. The cash flow from seed oysters to market size should be estimated at 18-24 months for any loan analysis.

These examples do not include capital costs of a boat or the operating costs for the business, gas, insurance, taxes, etc.

If the capital needs of the small businesses are relatively small the local financial institutions may be the best source of this capital.

If the CDBG program is utilized for the infrastructure cost, a portion of the project can be used to set up a revolving loan pool or loan loss reserve with the local banks to help offset the financing needs of the watermen.

Incentives – There may be the need to have some incentives for local watermen to convert to the aquaculture production of oysters. Typically, if financing is available at reasonable or no cost and terms are favorable, businessmen will take advantage of the opportunity. In addition to financing, there may be the need for assistance with the development of sound business plans, and navigating through the tangled web of regulations surrounding aquaculture. Incentives are typically more useful if they are provided upfront, when the small business starts up, rather than tax incentives over a long period of time.

- The establishment of a Technology Zone over the aquaculture park and its land facilities would allow the County to provide special incentives for businesses in that designated area. The County could establish an incentive program, matching grants, low interest loans, special tax policies, etc., for aquaculture investment.

  The typical state incentives of Enterprise Zones, Governor's Opportunity Fund and Major Facility Tax Credits are not in the realm of probability given the projected small number of jobs that will be created by any one business.

VI. Organizational Structure

There are several options for the organizational structure for the aquaculture park: public entity, non-profit corporation, cooperative and for-profit organization. Since the concept of an aquaculture park is untested there are no organizational models to compare or analyze.

As discussed earlier, the main advantage of having a public organization own and manage the aquaculture park is the potential for public sector funding of the infrastructure and the early start-up costs of the park. Public ownership and management does pose some internal problems in day-to-day management since governing bodies are subject to a host of laws/rules governing daily operations.

The advantage of a non-profit organizational structure is the access to some, but not all, public financing sources with few of the public sector restraints. The disadvantage is in the inability to raise the required amount of equity capital to get the aquaculture park established. Non-profit corporations do have an advantage of being eligible for foundation grants that neither a local government or private sector corporation would have. Unfortunately, foundation resources are typically limited in size and availability.

A “cooperative” is a private corporate structure where the watermen join together, each having a share in the corporation, for the management and control of the park. This model has historically been used in agricultural operations all across the US. The USDA has a special program of assistance for the establishment of these cooperatives. The success of this management structure is having a sufficient number of aquaculture businesses willing to work together towards common goals.

The private corporation model is the easiest to establish and implement but is totally dependent upon the strength of the aquaculture park business plan for its success. Being that conventional business financing is very difficult to obtain, particularly for a start-up company, a combination of a public-private sector partnership provides the advantages of public sector grant funding with private sector responsiveness to market factors.

The ability of the Mathews County Industrial Development Authority to lease public property without having to hold a public hearing gives it a logistical advantage over Mathews County in the management of the aquaculture park and its related facilities. A watermen’s cooperative or individual waterman under lease or contract with the manager of the

aquaculture park facilities is the preferred method of making sure that successful businesses result.

VII. Funding

The potential funding for the aquaculture park in large part depends upon the type of organizational structure established to own and manage the park. Typically, private sector corporations are not eligible for grant financing from the government or foundations. Private sector corporations typically receive capital in the form of debt or equity from other private sector investors or lenders. The sustainability of the aquaculture businesses will dictate private sector funding types and amounts. The public sector does assist with debt capital for special types of lending through a variety of credit enhancements, loan guarantees and insurance programs. On occasion, the public sector will provide direct lending for specialized economic development projects. While the public sector does not provide equity investments directly, it can provide tax credit programs to leverage private equity in specific types of projects.

Grant funding from foundation sources is limited to funding of non-profit corporations. Typically foundations prefer to fund special projects that benefit the priorities of that foundation; examples being environmental justice, at-risk pre-school education programs, etc. Foundations prefer to join with other funding partners to leverage their limited resources. Likewise, foundations prefer to fund program activities, not capital or general administrative expenses. A clear case statement and program description would need to be developed in order to recruit foundation financial support. If a foundation(s) believes in the mission of the non-profit organization it will often commit to support that organization for multiple years.

Public sector grant funding is available to non-profit and public sector organizations. Depending upon the grant program, they can be used for capital and/or programmatic expenses. Often there are limitations on the use of public sector grants for general administrative overhead costs associated with the organization. Typically, public sector grants are for a one-time specific project with a defined timeframe.

Potential public sector potential funding sources:

- COMMUNITY DEVELOPMENT BLOCK GRANTS – Covers capital cost of economic development projects benefiting low-to-moderate income (LMI) individuals. Grants typically are awarded for amounts ranging from $500,000 to $1,000,000. Grants can cover 100% of the cost of the project but the rating criteria is strongly weighted towards projects that have other committed sources for funding. The program, as administered by the Virginia Department of Housing and Community Development (DHCD), provides planning assistance to explore the feasibility of a project prior to applying for construction

funding. Awarded planning grants are typically less than $25,000.

- USDA - RURAL BUSINESS ENTERPRISE GRANTS (RBEG) PROGRAM - The RBEG program provides grants, $10,000 to $500,000, for rural projects that: finance and facilitate development of small and emerging rural businesses, help fund business incubators, and help fund employment related adult education programs. To assist with business development, RBEGs may fund a broad array of activities.

- USDA - INTERMEDIARY RELENDING PROGRAM (IRP) - The purpose of the IRP program is to alleviate poverty, and increase economic activity and employment in rural communities. Under the IRP program, loans are provided to local organizations (intermediaries) for the establishment of revolving loan funds. These revolving loan funds are used to assist with financing business and economic development activity, to create or retain jobs in disadvantaged and remote communities. Intermediaries are encouraged to work in concert with State and regional strategies, and in partnership with other public and private organizations that can provide complimentary resources.

- USDA - BUSINESS AND INDUSTRY GUARANTEED LOANS (B&I) - The purpose of the B&I Guaranteed Loan Program is to improve, develop, or finance business, industry and employment, and improve the economic and environmental climate in rural communities. This purpose is achieved by bolstering the existing private credit structure through the guarantee of quality loans that will provide lasting community benefits. It is not intended that the guarantee authority will be used for marginal or substandard loans or for relief of lenders having such loans.

- SBA – 7(a) LOAN PROGRAM - This is the US Department of Commerce's Small Business Administration's (SBA) primary and most flexible loan program, with financing guaranteed for a variety of general business purposes. It is designed for start-up and existing small businesses, and is delivered through commercial lending institutions.

- SBA – CDC/504 LOAN PROGRAM - This program provides long-term, fixed-rate financing to acquire fixed assets (such as real estate or equipment) for expansion or modernization. It is designed for small businesses requiring "brick and mortar" financing, and is delivered by CDCs (Certified Development

Companies)—private, non-profit corporations set up to contribute to the economic development of their communities.

- EDA – ECONOMIC ADJUSTMENT ASSISTANCE – This program provides 50% grants to address the needs of distressed communities experiencing adverse economic changes that may occur suddenly or over time, generally resulting from industrial or corporate restructuring, new Federal laws or requirements, reduction in defense expenditures, depletion of natural resources, and/or natural disaster. A Comprehensive Economic Development Strategy for the region must be prepared and approved by the Economic Development Administration (EDA) of the US Department of Commerce prior to project funding. Economic Adjustment Assistance grants are intended to enhance a distressed community's ability to compete economically by stimulating private investment in targeted areas. Current investment priorities include proposals that:
  a) Enhance the competitiveness of regions in the global economy by supporting existing industry clusters, developing emerging new clusters, or attracting new regional economic drivers;
  (b) Support technology-led economic development and reflect the important role of linking universities with industry and technology transfers; and
  (c) Advance community- and faith-based social entrepreneurship in redevelopment strategies for regions of chronic economic distress.

VIII. Process, Next Steps and Recommendations

The following is a set of recommendations that will assist in moving the project forward.

Future Aquaculture Businesses

- Prepare a fact sheet on the costs and potential earnings/benefits of becoming an aquaculture business, along with assistance that may be available to interested individuals and distribute this information to local watermen, aquaculturalists and entrepreneurs.
- Conduct an interview of existing watermen and high school/college students to gauge the interest in becoming aquaculture businessmen. The local crabbers that have been capitalized and trained over past year and a half through the VMRC/VIMS efforts would be a good target audience.

Services and Assistance

- The aquaculture park should be operated similar to a business incubator with the lease of subaqueous lands for a period of 5 years with the goal of graduating individual businesses to larger private lease areas in the County.
- An aquaculture curriculum should be created in the local high school and at the Rappahannock Community College to train prospective aquaculture business entrepreneurs.
- Business plan development services and direct business assistance will need to be provided through the Middle Peninsula Business Development Program for those individuals wishing to become an aquaculture business.
- As the number of sub-leaseholders increases, the services offered by the management entity would be based upon the needs of these aquaculture businesses.

Management Structure

- It is recommended that the Mathews County Industrial Development Authority (MCIDA) act as the management organization for the aquaculture park.
- It is recommended that Mathews County provide the initial staff assistance to the MCIDA for daily operations of the aquaculture park (sublease of the aquaculture park, maintenance of the facilities, provision of services, etc.).
- Individual watermen, aquaculture businesses and/or hobby growers would then lease the water column and bottom within the aquaculture park from the MCIDA.

Facilities

"In-the-water"

- The Virginia Marine Resources Commission needs to identify available subaqueous lands that are available for master lease for establishing the aquaculture park.
- It is recommended that the Mathews County Industrial Development Authority apply and enter into a master lease for the desired subaqueous lands that are available.
- Subdivide the lease areas into sublease parcels of approximately 5 acres.

"On-shore"

- Apply for a CDBG Planning Grant to evaluate the potential "on-shore" facilities in relation to the "in-the-water" facilities to determine development costs and identify prospective users.
- Select the most suitable "on-shore" facilities and develop a budget for the development of the selected sites.
- Gain site control, if not publicly owned, of the selected/preferred privately owned "on-shore" sites.
- Prepare and apply for grant funding (CDBG and USDA Rural Development) for the acquisition/improvement of the selected "on-shore" sites.

Appendix A
Technology Zones

§ 58.1-3850. Creation of local technology zones.

A. Any city, county or town may establish, by ordinance, one or more technology zones. Each locality may grant tax incentives and provide certain regulatory flexibility in a technology zone.

B. The tax incentives may be provided for up to ten years and may include, but not be limited to: (i) reduction of permit fees; (ii) reduction of user fees; and (iii) reduction of any type of gross receipts tax. The extent and duration of such incentive proposals shall conform to the requirements of the Constitutions of Virginia and of the United States.

C. The governing body may also provide for regulatory flexibility in such zone which may include, but not be limited to: (i) special zoning for the district; (ii) permit process reform; (iii) exemption from ordinances; and (iv) any other incentive adopted by ordinance, which shall be binding upon the locality for a period of up to ten years.

D. Each locality establishing a technology zone pursuant to this section may also adopt a local enterprise zone development taxation program for the technology zone as provided in § 58.1-3245.12.

E. The establishment of a technology zone shall not preclude the area from also being designated as an enterprise zone.

(1995, c. 397; 1996, c. 830; 1997, c. 168; 2002, c. 449.)

§ 58.1-3245.12. Local enterprise zone program for technology zones.

The governing body of any county, city, or town may also adopt a local enterprise zone development taxation program for a technology zone, as described in § 58.1-3850, located within its boundaries, regardless of whether such technology zone has been designated by the Governor as an enterprise zone pursuant to Chapter 49 (§ 59.1-538 et seq.) of Title 59.1. Such program for a technology zone shall be adopted by local ordinance. All other provisions in this article as they relate to a local enterprise zone development taxation program for enterprise zones shall apply to such program for technology zones.

(2002, c. 449; 2005, cc.

Appendix B
Mathews County Aquaculture Working Waterfront Steering Committee

In October 2008, the Middle Peninsula Planning District Commission (MPPDC) was funded through the Virginia Coastal Zone Management (VCZM) Program to explore the need for public policy to promote aquaculture-working waterfront economic sustainability (ie. jobs, business sales, and fiscal revenue) as well as to explore other economic tradeoffs and/or competing economic interest of existing local public policy.

With goals to support efforts to preserve a heritage and culture defined by commercial fishing working waterfronts, Mathews County, a member locality of the MPPDC, was very much interested in participating in this project. Therefore to kick off this project, the Mathews County Aquaculture Working Waterfront Steering Committee (MCAWWSC)was created in the winter of 2009 to begin to understand the current scope (ie. economic, ecologic and social aspects) of aquaculture-working waterfront industry within the county. With the help of the Mathews County Administrator and County planning staff, committee members were appointed based on their active participation in the aquaculture and/or working waterfront industry. Specifically the committee consisted of commercial and hobby oyster and clam farmers, county planners, and the Mathews Maritime Foundation.

Through a series of meetings in 2009, the MCAWWSC identified current industry challenges, shared aquaculture business models, and discussed how the aquaculture-working waterfront industry could be supported or enhanced by the County. Also the Committee assisted in the development of public policy options that addressed the identified concerns and challenges within the aquaculture industry (eg. water quality, user conflicts, zoning, etc).

As this project was funded for a second year through VCZM, MPPDC continued to utilize the expertise and insight of the MCAWWSC members to develop the concept of the In-the-Water Aquaculture Park.

Committee Member	**Affiliation**
Mr. Ronny Sopko	-Sea Farms, INC.
Mr. George DeMarco	-Pepper Creek Shellfish Farm
Mrs. Janet Loyd	-Maritime Foundation
Mr. Ken Kurkowski	-Middle Peninsula Aquaculture Corp.
Mr. Jack White	-New Point Oysters
Mr. Stan Allen	-Virginia Institute of Marine Science, Professor/Director, Aquaculture Genetics and Breeding Technology Center
Mr. Rolf Zierow	-Tidewater Oyster Gardeners Association, member
Mr. Gladestone	- Tidewater Oyster Gardeners Association, member

Chandler	
Mr. Peter Perina	-East Field Farms
Mr. Dennis Gryder	-Briar Patch Oysters
Mr. John Shaw	-Mathews County Planning Department, Director of Planning
Mr. Matthew Rowe	-Mathews County Planning Department, Planner

Technical Resource Expert	**Affiliation**
Mr. Mike Oesterling	-Virginia Institute of Marine Science, Fisheries and Aquaculture Specialist
Mr. Thomas Murray	-Virginia Institute of Marine Science, Marine Business and Coastal Development Specialist
Mr. Jack Travelstead	-Virginia Marine Resource Commission, Deputy Commissioner and Chief of Fisheries Management
Mr. Chip Neikirk	-Virginia Marine Resource Commission, Habitat Management
Ms. Laura McKay	-Virginia Coastal Zone Management Program, Program Manager
Mr. Lewie Lawrence	-Middle Peninsula Planning District Commission, Director of Regional Planning
Ms. Jackie Rickards	-Middle Peninsula Planning District Commission, Regional Projects Planner I

Appendix C

Aquaculture Opportunity Zones

CHAPTER 27

An Act to amend and reenact § 28.2-603 of the Code of Virginia, relating to creation of aquaculture opportunity zones.
[H 138]
Approved March 4, 2010

Be it enacted by the General Assembly of Virginia:

1. That § 28.2-603 of the Code of Virginia is amended and reenacted as follows:

§ 28.2-603. General oyster planting grounds; aquaculture opportunity zones.

A. Waterfront that is not already assigned or reserved for the riparian owners, and the beds of the bays, rivers, and creeks and shores of the sea lying outside the limits of navigation projects adopted and authorized by the Congress and not required for the disposal of materials dredged incident to the maintenance of such projects, and grounds other than public oyster beds, rocks, or shoals, as defined by law and included in the Baylor survey, may be occupied for the purpose of planting or propagating oysters, including the use of temporary protective enclosures in compliance with this chapter and Commission regulations, and may be leased by the Commissioner upon the receipt of a proper application.

B. The Commission shall establish commercial shellfish aquaculture opportunity zones for the placement of temporary protective enclosures as set forth in § 28.2-603.1, in the waters off the shores of the Northern Neck, the Middle Peninsula, and

Tangier Island. Such zones shall be established by regulations. The regulations shall prescribe (i) the location of such zones; (ii) the proper procedures for the maintenance of such zones, including the (a) proper placement and handling of gear and other apparatus so as not to create a safety hazard and (b) seasonal and time-of-day use of such zones; and (iii) penalties for violations of the regulations. Once established, such zones shall be exempt from the provisions of §§ 28.2-606, 28.2-607, and 28.2-608, §§ 28.2-612 through 28.2-615, and 28.2-617. The Commission may establish a single fee for the application and use of the aquaculture opportunity zones.

Appendix 4:

Mathews County Updated Comprehensive Plan showing sections relating to the York River Use Conflict Committee Report and Recommendations

Description: The following pages have circled numbers and highlighted sections that indirectly or directly relate to the York River Use conflict Committee Report and Recommendation. The circled numbers correspond to the recommendations below:

① *Development and adoption of a coastal living policy;*

② *Denoting landing, air, and water territorial boundaries within the County's Comprehensive Plan;*

③ *Taking no action regarding aquaculture but instead monitor and evaluate how VMRC's new regulation address the use conflicts associated with this relatively new industry;*

④ *Development and adoption of a policy to protect and preserve working waterfronts;*

⑤ *Development of a waterfront outdoor light ordinance;*

⑥ *Adoption of a policy restricting the use of floating homes; and*

⑦ *Development of a master plan for public access infrastructure to ensure safe and equal access for all user groups to the waterways within the County.*

A Strategic, Comprehensive Plan for Mathews County 2030

How do we achieve our vision for the future? What are the goals and priorities for Mathews County over the next 10-20 years? Where and how should growth occur? Where are public services, infrastructure and facility improvements needed? What are important public and private actions that can help us achieve our future goals and community vision?

2030 Comprehensive Plan Overview

Mathews County is located at the eastern edge of the Middle Peninsula of Virginia with shores on the Chesapeake Bay and the North, East and Piankatank Rivers. The County contains over 200 miles of waterfront shoreline, and an abundance of forests, wetlands and special environmental areas. Identified as the "Pearl of the Chesapeake," the County is ~~a~~ home to approximately 9,500 residents (2008 population estimate) and a destination for seasonal visitors seeking a rural coastal lifestyle among natural vistas and quaint business areas.

By 2030 Mathews County is envisioned to be a model community that celebrates its outstanding quality of life and showcases its unique natural resources, while sensitively balancing development and promoting eco-friendly practices and businesses. More detailed vision and goals are discussed in the sections that follow.

To achieve the long-range vision, this Plan establishes a number of guiding policies for encouraging the ~~kinds~~ types of development and patterns desired for the future. Also, the Plan recommends a variety of action strategies and potential action projects for achieving the future goals and vision for Mathews County. An appendix to the plan includes an implementation matrix which summarizes the strategies and identifies suggested ~~timeframes~~ priorities for undertaking recommendations, as well as both public and private partners who should be involved in carrying the strategies forward.

Key Planning Themes

- Renewed emphasis on preserving environmental quality to enhance the quality of life for residents and visitors, protecting the unique environmental features of the County, and sustaining the local and regional economy;
- Committed leadership to managing future growth and development in a way that balances development, jobs, revenues, and public services while sustaining the rural character and special natural features of Mathews County;
- Increased cooperative approaches and initiatives to enhance the economy through heritage tourism, eco-tourism, aquaculture, and working waterfront business development that complements the environment; and

4

- Continued public involvement and engagement of multiple partners to address community challenges and pursue potential revitalization or rehabilitation opportunities in each of the County planning areas.

Key Planning Recommendations

People and Housing

4

- Increased public education regarding environmental influences and development constraints;
- Increased diversity of housing types and options, including ~~senior~~ age-restricted housing and workforce housing in commercial centers (above ground floor retail uses or in small groupings); and
- Monitoring and enforcement of zoning and building codes and violations.

Economy

- Increased efforts, tools, and incentives to support and promote water-based businesses and aquaculture;
- Enhanced tourism initiatives, especially heritage tourism and eco-tourism; and
- Increased business and mixed-use development (residential and commercial) in the Mathews Court House area and designated hamlets, preferably where there is access to public utilities;

History & Culture

- Increased survey and documentation of County historic properties; and
- Designated local historic district for the Mathews Court House business area and other areas of the County, as appropriate.

Public Facilities & Services

- ~~Continued study of regional~~ Develop a policy regarding water supply and management options in the Mathews Court House area as well as other areas of the County;
- Implementation of Phase I of the Sanitary Sewer Transmission Force Main from Mathews Court House to Gloucester County;

- Improved telecommunications network;
- Updated 2035 Transportation Plan (with multi-modal options) and study of additional transportation evacuation routes in Mathews;
- Increased public education regarding shoreline erosion, flooding, septic system capacity limitations, development constraints, etc.

Environment

- Protection and improvement of water quality through increased public education and revised zoning regulations; ~~including a Floodplain Overlay District~~
- Preservation of natural resources and increased environmental stewardship through promotion of best management practices, vegetative methodologies for shoreline stabilization (living shorelines), and utilization of available technology and tools (e.g., VIMS Shoreline Inventory);
- Increased training for County Wetlands Board members, contractors, and citizens in "living shoreline" stabilization methods and development of a model certification program that can be used by other communities; and
- 7 Improved recreational access to the County's waterfronts and beaches;

Land Use and Development

- Increased conservation and management of large tract agriculture and forests;
- Targeted development in Mathews Court House area, hamlets and crossroad areas;
- 1 4 Updated zoning and subdivision regulations to guide and manage future growth, particularly with respect to entrance corridors, historic areas, business centers and the waterfront; and
- 1 4 Planning in anticipation of shoreline erosion, coastal subsidence and sea level rise in order to protect public and private investments and minimize impacts from flooding.

2030 Vision for Mathews County

By 2030, Mathews County with its 217 miles of waterfront will be widely acknowledged as the "Pearl of the Chesapeake" and celebrated as a beautiful, vibrant County with a rich cultural, political and economic heritage. By 2030, Mathews County will be a model community that showcases its outstanding quality of life, unique natural resources, and successful environmentally-friendly, sustainable development practices. In 2030, Mathews County will be a community where:

- The County carefully plans for and achieves a sustainable economy by tailoring land management policies, initiatives, and regulations to County special needs and unique environmental characteristics.

1

- Informed citizens work closely with government to protect the County and ~~their~~ its way of life. Through their efforts, the sky and water are clear and the air sweet.

- Citizens appreciate each other and look to the future with pride. They value their heritage, close-knit-family traditions, open government, community service and independence.

- Researchers are attracted to Mathews to study the fragile coastal eco-systems, sustainable development practices, and alternative solutions for energy use and environmental protection.

1

- Government and citizens strive to improve and protect water quality by wisely managing land uses and eliminating potential conflicts.

4 7

- Shoreline management and public access to the water are community priorities.

- Development is carefully planned to protect County natural and environmental features; minimize pollution; and to sustain County resources and quality of life.

- Safe water, streets, sidewalks, and properly functioning wastewater and stormwater management systems support the Central Mathews District and Historic Court House village. Other County districts have safe and sanitary conditions through expanded utility systems, use of best management practices, and careful monitoring.

- Life-long learning is an integral part of community life. Schools are outstanding, academically and athletically, with nationally competitive crew and sailing teams.

- County farms delight consumers and restaurant owners with local produce, while area merchants and artisans welcome patrons with quality, creative offerings in services, products, and arts and crafts.

- Forestry, fishery and ecotourism opportunities offer residents quality employment and wages while integrating sustainable business practices that protect and renew natural resources. Seasonal visitors who appreciate Mathews' traditional heritage and natural environment are attracted to the County.

1 3

- Eco-friendly enterprises – aquaculture, maritime museums, sailing schools, kayak farms, boat tours – concentrate economic activities on the water.

- Home-based businesses thrive on expanded internet services and distribute Mathews' products worldwide.

- Business enterprises offer quality services, ~~in appropriate locations~~, and living-wage employment, have limited environmental impact, and provide revenue contributions to the community.

- Mathews County ~~has affordable~~ promotes workforce housing, recreational options, health/wellness services, and a sustainable environment for its diverse population, all of which have been achieved through open communication, citizen involvement and creative use of ~~leveraged,~~ multiple-sourced funding.

- Biking and hiking trails weave through forests and meadows, while ~~low emission~~

~~vehicles and~~ multi-modal transportation options minimize the need for cars.

Mathews County Goals for 2030

To achieve the 2030 Vision for Mathews County, the following broad goals will guide the community in managing future services and growth and providing for the public health, safety and welfare:

Environment

- Preserve and protect the natural environment and resources of Mathews County, which are fundamental to the community's quality of life and prosperity.

- Encourage growth and development that protects water quality, is environmentally sensitive, low impact, and ecologically sustainable.

7

- Provide public access to outstanding County waterways and shorelines.

- Provide leadership in planning with the region to protect the natural environment and resources that are the life sustaining elements of Mathews County and surrounding counties adjacent to the Chesapeake Bay.

- Provide planning to protect the County ~~and the Chesapeake Bay~~ with respect to possible sea level rise and coastal lowland flooding.

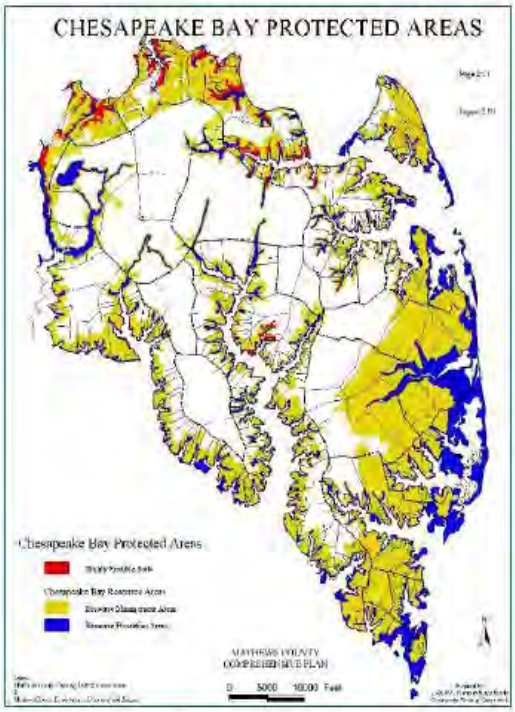
People

- Encourage and sustain a diverse population of residents of varying ages, cultures, and incomes.

- Recognize and sustain the important contribution of County youth to the quality of life and the economy of Mathews and the region.

- Encourage the development and maintenance of safe, sanitary, and affordable housing of varying types and styles to meet the needs of County residents.

In 2000, the Comprehensive Plan provided a more in-depth look at demographic and economic trends, constraints for development, public facility needs, community issues, land use and in particular, water quality and shorelines. Since the adoption of that plan in 2001, some of the accomplishments include:



7

- Adoption of a Statewaters Access Plan for Mathews County in 2003.

- Implementation of a Central Mathews and Courthouse Village Sanitary District Plan. The Hampton Roads Sanitation District has designed and allocated funding for the first phase of a Mathews Transmission Force Main and Pump Stations; construction is expected to begin *in 2009*.

- Establishment of a Septic System Pump-Out Program (2008) in cooperation with the Middle Peninsula Planning District Commission.

- New or upgraded public facilities such as the County Courthouse Complex, the Historic Mathews Court House and Green, and the Mathews Memorial Library.

- Additional economic initiatives related to tourism and aquaculture, including a visitor welcome center, improvements to downtown Mathews and the Historic Court House Square, and continued broadband investigations.

7

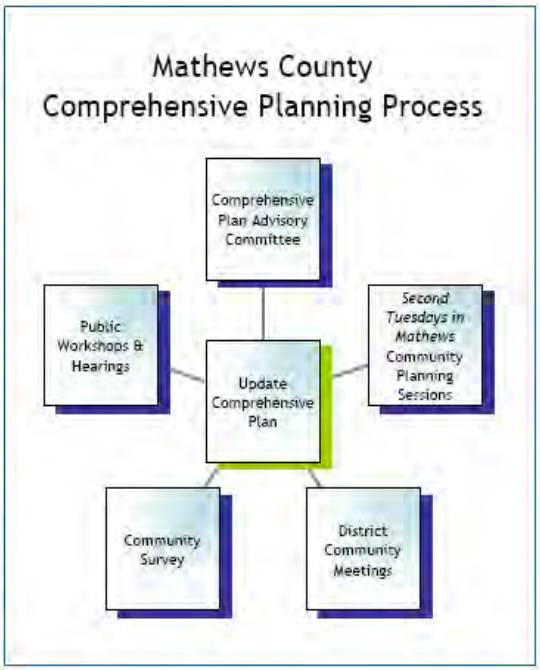
- Public recreational improvements at Mathews High School and Park, Williams Wharf Landing, Haven/Festival Beach, and Piankatank River Landing; future improvements are planned for Fort Nonsense, the Court House Area and the East River Boatyard property.

- Compliance with the Chesapeake Bay ~~Protection~~ Preservation Act requirements with respect to the Comprehensive Plan (2001), ordinances and protection areas (2006), and program implementation (2008).

Updating the Comprehensive Plan: New Directions

In reviewing the Comprehensive Plan in 2007, as required by the Commonwealth of Virginia, County officials and planners desired a more strategic and user-friendly plan with greater citizen involvement to guide the future of Mathews.

In an effort to reach out to citizens in an educational and innovative manner, the County partnered with Chesapeake Network for Education of Municipal Officials (NEMO)[1] to host five community planning sessions. This organization consists of diversified professionals, community organizations, and governmental agencies that provide communities in the Chesapeake watershed with educational programs and planning assistance. The goals of the sessions would be to: stimulate and engage citizens in community planning, introduce broad topics for consideration, and promote a greater understanding of the value of planning. These evening workshop sessions, billed as *"Second Tuesdays in Mathews,"* were held from October 2007 to February 2008 and featured the following topics:



- Linking land water and growth;
- Growth in and around Mathews;
- Mathews economy: fostering sustainable economic development;
- Mathews valuable resources (shorelines, forests, agriculture, natural heritage, and history); and
- Planning the direction of your community.

The *Second Tuesdays in Mathews* sessions were very successful in engaging citizens in the future

[1] NEMO Partners for this project included Virginia Department of Conservation and Recreation, Virginia Cooperative Extension, National Park Service, Middle Peninsula Planning District Commission, Virginia Department of Forestry, Mathews Historical Society, and Maritime Heritage Foundation. Project Sponsors included Mathews County, MCSEED, and Mathews Memorial Library.

- *What types of development is preferred in Mathews County:* affordable housing options for all income levels (39%); new single-family dwellings on lot of 1-2.5 acres (37%), on smaller lots, with required open space (31%), and on lots of 5 acres or more (27%)
- *The availability of rental housing in Mathews County* is fair (53%).
- *Additional commercial businesses are needed in Mathews County* (64%). The most needed businesses are: retail (62%), restaurants (61%), and hotels, motels or bed and breakfast establishments (49%). Approximately 50% of the persons purchase their goods and services in Mathews. Areas identified for commercial businesses most often were: downtown Mathews, Cobbs Creek, Gwynn's Island, New Point and surrounding counties.
- *Issues most important to County residents* were: protecting water quality and resources (74%); preserving the rural character (63%); availability of wireless/broadband (60%), preserving forest land (53%), access to the water (48%), and ability to pay local taxes (46%).
- *Residents used the following public services frequently:* library (75%), waste transfer station (66%), general government (65%), recreation (60%), schools (54%).
- *Familiarity with the County Comprehensive Plan:* Approximately 50% of the respondents were somewhat familiar with the Comprehensive Plan.

To engage youth in the planning process, County Planners visited Mathews County High School and met with seniors to share information on the Comprehensive Plan and to obtain their thoughts on the future. In general, the high school seniors requested that education remain a top priority for the County and all citizens; that youth be supported in public decisions and actions; and that youth be included in reviewing the long-range vision and plan for the County.

In addition to the survey, the County Board of Supervisors and the Planning Commission appointed a 17-member Comprehensive Plan Advisory Group representing each of the five County planning areas: Bayside, Central Mathews, Gwynn's Island, Piankatank, and West Mathews. This advisory group assisted County planners and administrators in furthering the Comprehensive Plan and hosting Community Meetings in each of the five districts. Summaries of the initial district meetings held from August to November 2008 are included in the appendix to this plan. Some of the common themes were:

- Failing septic systems and effect on water quality of creeks;
- Public access to County waters and shorelines;
- Flooding and drainage; maintenance of ditches;

People and Housing - Challenges and Opportunities 2030

Given the historical population trends and the development constraints within the County (topography, water supply, septic system challenges, wetlands, floodplains, etc.), it is reasonable to continue to expect conservative growth in the future. Like many rural communities, Mathews County appears to be aging and losing youth to larger metropolitan areas. The loss of young adults also means decreases in the available labor workforce, as well as decreased numbers of children and young families. Mathews must find creative ways to attract and retain young persons in the future. A viable, sustainable community should be representative of all age groups and include native residents, as well as those from other areas.

Also, it is important to understand that each age group has associated demands for varying types of supporting goods and services; thus, there may be shifts required in business types and available services. Social demographics must be considered and business services carefully tailored to sufficiently meet the needs of residents and targeted populations; otherwise, the County loses economically and fails to nurture those that it wishes to retain or attract.

New residents are drawn to the coastal environment, but may not fully understand County culture or settlement patterns and may not be familiar with the true dynamics of living in a coastal community. Both new and existing residents must be educated about environmental factors and respect the ecological systems that have been an asset and part of the County's way of life for centuries. Since waterfront residential property presently contributes substantially to the tax base of the County, the challenge will be to manage future land development in an environmentally sensitive manner while balancing revenues and public investments and services.

1

Finally, seasonal residents should be a factor in future decisions. At present, there is limited information available on the number of persons moving to Mathews County during warmer months. Additional data should be collected in order to better define public service and safety needs, and to evaluate options for equitably funding any increased service levels.

With respect to housing, there should be more targeted efforts for encouraging clustered development in suitable areas. This approach can protect sensitive environmental areas and preserve open space for the benefit of residents and the community as a whole. Housing types can be diversified by utilizing this approach, as well. There are opportunities for encouraging workforce housing in some of the small hamlet areas of the County. These could include live-work spaces, second-story apartments, or small clusters of duplex, triplex or quadruplex units. Other options are to encourage the adaptive reuse and improvement of existing buildings for mixed-use commercial/ residential purposes and rehabilitation of vacant houses.

Planning / Development Policies and Strategies for People and Housing	
1	6. Increase community awareness and education of the environmental issues associated with coastal living. Consider a variety of media communications, public announcements, series of speakers, school curricula, realtor packages, etc.
PH 2	~~**Diverse housing types and styles should be available in Mathews County to meet the needs of young persons, families, and special needs populations. (e.g. elderly).**~~ **Mathews' residents have long recognized the need for age-restricted independent and assisted living housing. Workforce housing is also needed.**
	1. Assemble more definitive information on housing in the County (types, value, condition, etc.). Include a housing survey of residents to identify specific needs. Consider applying for a housing rehabilitation planning grant from the Virginia Department of Housing and Community Development.
	2. Promote a diversity of housing types and price ranges within new residential developments in order to provide greater housing opportunities to all residents. Ensure quality building designs and site development through careful review of proposals.
	3. ~~Encourage private non-profit housing groups to participate in the provision of affordable housing in the county.~~ Identify infrastructure requirements that would encourage for profit and non-profit housing groups to develop independent living, assisted living and workforce housing in the County. ~~Consider~~ Promote well-designed ~~single family housing options and~~ low-to medium-density housing options ~~near~~ in the Mathews Court House area. ~~Village area~~.
	4. ~~Promote the County interest in specific housing needs (e.g. elderly) and work with private interests, or partner with other public interests, to address the community's housing needs. Support private and public efforts to provide housing that allows for age-restricted independent living.~~ Work with qualified private and public housing providers to address the County's housing needs.
	5. Encourage mixed-use housing and business development in the small commercial centers of the County by revising the zoning code to provide for upper-story housing above ground-floor commercial uses, live-work

Economic Challenges and Opportunities 2030

In order to sustain the quality of life in the County and achieve its vision for an economy that is focused on eco-tourism and heritage agricultural and maritime trade, there must be a carefully constructed strategy for enhancing these industry sectors. Integrating protection and management of the natural resources that provide the baseline for these industries must be a key element of the strategy. Another important factor for success will be having a sufficient number of supporting industries, such as retail trade, accommodations, and entertainment.

Tourism statistics for the region and those of the state indicate that there are opportunities for Mathews County to increase its market share in eco-tourism. In addition, the shorelines of the County provide opportunities for increased aquaculture and aquatic-based businesses; however, these endeavors will require careful land use management to protect both the environment and businesses. Creativity, exemplary leadership, and multiple public-private partnerships will be needed to understand the complex, ecological dynamics and to educate officials, businesses, and the public.

2030 Vision for Mathews

"County farms delight consumers and restaurant owners with local products, while area merchants and artisans welcome patrons with quality, creative offerings in services, products, and arts and crafts.

Forestry, fishery and ecotourism opportunities offer residents quality employment and wages while integrating sustainable business practices that protect and renew natural resources.

Seasonal visitors who appreciate Mathews' traditional heritage and natural environment are attracted to the County.

Eco-friendly enterprises – aquaculture, maritime museums, marinas, sailing schools, sea farms, kayak farms, boat tours – concentrate economic activities on the water.

Home-based businesses thrive on expanded Internet services and distribute Mathews' products worldwide.

Business enterprises offer quality services in appropriate locations, living-wage employment, limited environmental impact, and quality revenue contributions to the community."

Mathews County is constrained for development because of its topography and its proximity to surface water. This is further complicated by a lack of utility infrastructure for water and sewer. Consequently, the locations where development can occur with few constraints must be carefully planned to ensure that they are developed using best development practices and in the wisest manner with respect to land use and density. This will require careful choices to achieve a successful and balanced economy that is able to sustain the quality of life desired in Mathews County.

Planning/Development Policies, Action Strategies for Economy 2030

The following planning and development policies and action strategies are established to achieve the desired vision for the future economy of Mathews County:

Planning / Development Policies and Strategies for Economy	
E 1 (1)	**The economy of Mathews County is linked to and dependent on the quality of the environment. Public decisions on land development and economic investment should be based on careful study of environmental impact, both short and long-term.**
(1)	1. Develop an environmental information package and assessment check-list for developers that can be used by applicants and by County representatives when considering development and rezoning applications. Include agency resources and contact information. Update regularly.
	2. Continue to monitor and report environmental quality on at least an annual basis. Work with the Middle Peninsula Planning District Commission and other environmental organizations to actively address environmental challenges that may affect the economy and quality of life.
(1) (4)	3. Identify and evaluate sensitive environmental areas and specific waterfront and inland land uses that may adversely affect water quality, environmental assets and long-term water-based economy. Use best management practices to resolve land use conflicts. ~~Work with the Middle Peninsula Planning District Commission and other environmental agencies to identify sites.~~
(1)	4. Revise land development regulations to better manage land uses in waterfront areas and protect environmental quality. Provide public education and opportunities for public comment and input to ensure workable solutions.
E 2	**Mathews County has a proud, traditional heritage in water-based businesses. Increased efforts should be undertaken to enhance this sector of the local and regional economy. ~~Environmentally friendly, water-based business development should be a priority land use.~~**

Planning / Development Policies and Strategies for Economy	
2	1. Clarify, define and pursue County authority to regulate and manage land uses beyond the physical land area and shorelines, extending the territorial boundaries over the water. ~~Adopt an aquaculture overlay district as a land development tool to manage incompatible land uses and in order to improve and protect water quality~~.
4	2. Identify new or preserve existing ~~or reaffirm creative, suitable~~ sites for aquaculture ~~initiatives~~ and ~~sites for~~ working waterfront businesses. ~~along the County's coast and waterways~~. Establish an Economic Development Team to ensure ~~good~~ communication among interests, target compatible land/water uses, and adopt minimum development standards (e.g., Aquaculture Best Management Practices). Develop an economic development strategy that can be updated on an annual basis. Work with the Middle District Planning Commission, the Virginia Economic Development Partnership, Chamber of Commerce, Virginia Marine Resources Commission, and other environmental agencies.
4	3. Pursue the development of a land and/or in-water Aquaculture Business Park, Aquaculture Research Center or similar economic model that can enhance the economy of the County and the coastal environment. Consider financial incentives that could assist business development (e.g. special loans, incubator spaces, etc.).
1 4	4. Revise the County zoning ordinance to better define "aquaculture" as a use and review regulations to ensure appropriate land use management. Strengthen regulations to encourage and protect aquaculture in appropriate areas.
1 4	5. Develop and pursue designation of aquaculture opportunity zone(s) as a financial incentive to promote aquaculture and encourage investment. Adopt applicable local incentives and taxation options to promote aquaculture.
	6. ~~Encourage and support~~ Lobby general assembly ~~actions to establish a~~ for special aquaculture land use taxation category specific to aquaculture and water-based businesses, similar to agriculture land use taxation, to encourage continued use and production of important properties and operations.

Planning / Development Policies and Strategies for Economy	
1	7. Educate the public regarding the importance of aquaculture and working waterfronts to the community, region and the state. Develop a brochure, webpage article, or other form of communication to promote increased understanding of water-based business operations and requirements, as well as the need for excellent water quality. Work with businesses and governmental agencies to coordinate efforts and improve communication of important coastal living issues and future goals and outcomes.
1 4	8. Affirm the commitment of the County to protect the working waterfront as a priority for economic development and preserving coastal character. Improve communication regarding pending development matters, water quality monitoring/reporting, water access, etc. Consider appropriate "good neighbor practices" that enable shared information and communication regarding development activities.
1 4	9. Consider adopting a formal resolution/policy that promotes and protects working waterfronts in Mathews County.
E 3	**Tourism is an important economic sector for Mathews County that should be encouraged and supported as an economic development strategy.**
	1. ~~Enhance tourism initiatives throughout the County. Develop a Tourism Strategy that can be updated on an annual basis. Coordinate with supporting industries (e.g., Chamber of Commerce, retail and accommodation businesses). Develop an accompanying educational component that can be used by tourism businesses and visitors to promote good environmental stewardship. Work with various tourism agencies (e.g., Mathews Visitor & Information Center, Virginia Tourism Corporation, etc.).~~ Develop a tourism strategy, updated annually, in cooperation with the Mathews Visitor and Information Center (MCVIC), and supporting businesses and organizations. Collaborate with MCVIC to develop educational materials that promote environmental stewardship. Support marketing and other outreach efforts by MCVIC and others to attract tourists to the County.
	2. Encourage development of conference/lodging facilities in selected ~~waterfront~~ locations with water access. Ensure environmental compatibility with the area. ~~Encourage redevelopment of the old Islander Motel on Gwynn's Island.~~

Aquaculture and Waterfront Infrastructure

In 2008, the Middle Peninsula Planning District Commission (MPPDC) received funding through the Virginia Coastal Zone Management (CZM) Program to study aquaculture and waterfront infrastructure. In 2009, MPPDC focused on Mathews County and established an Aquaculture/Working Waterfront Steering Committee for the purposes of promoting aquaculture and preserving and strengthening the working waterfront infrastructure of the County. Consisting of commercial and hobby oyster and clam farmers, county planners, and the Maritime Foundation within Mathews County, the committee identified current challenges within the aquaculture industry, they shared business models, and discussed how the industry could be supported or enhanced by the county through public policy. As this Steering Committee continues its work and collaboration with businesses, citizens and governmental officials, there will be many worthy recommendations that can be pursued to enhance shellfish aquaculture, water quality and economic development opportunities in Mathews County. ~~In 2008, the Middle Peninsula Planning District Commission received CZM funding to study aquaculture and waterfront infrastructure. In 2009, the PDC focused on Mathews County and established an Aquaculture Working Waterfront Steering Committee for the purposes of promoting aquaculture and strengthening the waterfront infrastructure. As this Steering Committee continues its work and collaboration with businesses, citizens and governmental officials, there will be many worthy recommendations that can be pursued to enhance shellfish aquaculture, water quality and economic development opportunities in Mathews County.~~

7 4 7 1 4

4 7 1 4 7

Aquaculture Overlay District

2 An Aquaculture Overlay District should be considered for the coastal areas of the County and applicable waters and submerged lands which are determined to be of significant value for aquaculture. Application of this district for land management purposes should be considered after careful study and collaboration with appropriate regional and state agencies. Public and business involvement in developing and establishing this district will be extremely important in order to share information, promote understanding, and ensure a successful tool for promoting and 4 protecting aquaculture.

Code of Virginia 15.2-2211
Cooperation of local planning commissions and other agencies.

"The planning commission of any locality may cooperate with local planning commissions or legislative and administrative bodies and officials of other localities so as to coordinate planning and development among the localities. Planning commissions may appoint committees and may adopt rules as needed to effect such cooperation. Planning commissions may also cooperate with state and federal officials, departments and agencies. Planning commissions may request from such departments and agencies, and such departments and agencies of the Commonwealth shall furnish, such reasonable information which may affect the planning and development of the locality."

2 While federal and state agencies have jurisdiction over water quality and subaqueous lands, Virginia planning legislation provides for local government to have jurisdiction over land and waters within its territorial boundaries for the purposes of improving the public health, safety, convenience and welfare of its citizens to plan for future development. Also, the legislation provides for cooperation with other legislative and administrative bodies in order to coordinate planning and development; furthermore, it provides that the planning commission may appoint committees and adopt rules as needed to affect cooperation.

complaint-based program in conjunction with VDOT to maintain those ditches that pose a public safety or health problem. One dilemma is that when left unattended, the ditches evolve and foster wetland vegetation, which can be beneficial in filtering stormwater pollutants; yet clearing of the vegetation becomes an environmental challenge.

Recreation - Parks, Community Centers, Public Beaches, Blueways

Mathews County has one inland community park, Mathews Park, that hosts a variety of public recreation facilities on ten acres, including picnic shelters, playground, tennis courts, basketball courts, and multi-purpose ball fields. The facilities are located in Central Mathews, adjacent to Mathews High School. While the County manages and maintains Mathews Park, the Mathews YMCA is under contract to the County for managing leisure programs and recreational events. In addition to the park, there are several community centers located throughout the County that offer specialized or recreational programs, and community meeting facilities. These include a youth center in Central Mathews, as well as community centers in West Mathews and on Gwynn's Island. A map showing the location of major park facilities and community centers is provided on the following page.

7

In addition to inland facilities, there are waterfront properties throughout the County that provide access to the Chesapeake Bay and its tributaries. Some of the most popular public waterfront facilities include: Haven/Festival Beach, New Point Comfort Lighthouse, Williams Wharf Landing, and Piankatank River Landing, owned by the County. Also, Bethel Beach Natural Area Preserve, owned by the Virginia Department of Conservation and Recreation, the New Point Comfort Lighthouse Observation Walkway, owned by the Nature Conservancy, and the Bayside Observation Deck/Picnic Pavilion owned by the Mathews Land Conservancy are important waterfront amenities.

Public access to County beaches and waterfront areas is of special interest to governmental officials and to residents of Mathews County. In 2003, the County adopted the *Mathews County Statewaters Access Plan* which provides an inventory of all County public water access properties and established community goals and recommendations for expanding facilities and public

access points to the Chesapeake Bay and its tributaries. There are approximately twenty public access sites identified and discussed in the plan. A list of those sites and the amenities associated with each are identified in the two tables that follow the recreation map. Another recent property acquisition by the County is the East River Boat Yard in West Mathews.

7 The Blueways Network in Mathews County is a recreational asset for non-motorized watercraft that serves not only residents, but also many visitors. In the County, the blueways trail system covers over ninety miles of water and includes: Piankatank River Trail, Milford Haven/Gwynn's Island Trail, East River Trail, Winter Harbor Trail, and New Point Comfort Trail. These trails were developed and mapped by a volunteer Blueways Committee established in conjunction with McSEED. The group also has published a trail guide map.

Map of blueways trails in Mathews County. Source: Mathews County Website, www.co.mathews.va.us.

7 In 2009, VIMS worked with a variety of partners [17] to develop the "Mathews Maritime Heritage Trail" to preserve the valued coastal landscape and share the nautical heritage of the County. The first phase of the project is complete for the East River. More detailed mapping information on the trail can be found on line at http://ccrm.vims.edu.

7 All of these trails are part of the Chesapeake Bay Gateways Network and the Captain John Smith Chesapeake National Historic Trail (National Park Service).

[17]Mathews Maritime Heritage Trail Partners include: VIMS, Mathews County, Archeological Society of Virginia (Middle Peninsula Chapter), Bay Trail Outfitters, Mathews County Historical Society, Mathews County Visitor Information Center, Mathews Memorial Library, Mathews Blueways Water Trail, Middle Peninsula PDC / Public Access Authority, New Point Comfort Preservation Task Force, Virginia Cooperative Extension Service/4H Youth Development, and National Park Service.

Mathews County Statewaters Access – Site Information 7

Public Access Point	Priority	Waterway	Location in County	Map No.	Ownership	Zoning	Acreage	Beach Frontage (lf)
Auburn Landing	L	North River	Rt 620	23-A-20	public & private	B1	0.67	80 ft
Roane's Point Lndg	M	Piankatank	Rt 630	1-A-21	public	B1	0.4	216 ft
Warehouse Crk Lndg	L	Piankatank	Rt 631	2-A-1	public	B1	0.24	
Piankatank River Lndg	M	Godfrey Bay	Rt 632	5-A-86A	public	B1	0.48	
Roses Creek Lndg	H	Queens Creek	Rt 662	10-A-206	public	B1	0.64	420 ft
Grimstead Pblc Lndg	H	Milford Haven	Rt 223	11A5-A-6	public	B1/R1	0.927	130 ft
Milford Landing	M	Edwards Creek	Rt 672	11A6-A-11A	public	R1	0.5	
Whites Creek Lndg	M	Whites Creek	Rt 682	22-A-118	public	B1	0.25	61 ft
Festival Beach	H	Ches Bay	Rt 643	27-7-1,2,3	public	C	5.339	
Haven Public Beach	L	Ches Bay	Rt 645	27-6-1,2	public	C	15.8	
Town Point Landing	H	Put-In-Creek	Rt 615	29-A-201	public & private	B1		
William's Wharf Lndg	H	East River	Rt 614	29-A-221,222	public	B1	3.35	
Winter Harbor Lndg (Old Mill Landing)	M	Winter Harbor	Rt 611	36-A-21A	public	B1		< 125 ft
Winter Harbor Haven	H	Winter Harbor	Rt 608	36-A-148	public	B1	0.25	180 ft
Horn Harbor Landing	L	Horn Harbor	Rt 698	40-A-88	public	B1	0.9	1,000 ft
Davis Creek Landing	M	Davis Creek	Rt 689	43-A-36	public	B1	0.023	208 ft
Doctor's Creek Lndg	L	Doctor's Creek	Rt 699	42-5-4B	public	B1	0.5	
New Point Comfort	H	Ches Bay	Rt 600	45-A-2 & 3	private	C		
East River Bt Lndg		East River	Rt 619		public			

Mathews County Statewaters Access - Site Amenities 7

Public Access Point	Waterway	Signs	Shoulder Pkg	Sm Pkg Lot < 10	Lg Pkg Lot > 10	Trailer Pkg	Picnic Area	Waste Receptacles	Lighting	Restrooms	Hiking Trail	Bike Trail	Rules	Food	Fuel	Handicap	Fee/Permit	Slips/Mooring	Boat Storage	Fishing Pier	On-top Launch	Unimproved Ramp	Cement Ramp	Swim Beach
Auburn Landing	North River			♦																	♦			
Roane's Point Lndg	Piankatank			♦		♦															♦			
Warehouse Crk Lndg	Piankatank	♦																			♦			♦
Piankatank River Lndg	Godfrey Bay				♦	♦	♦	♦					♦								♦			♦
Roses Creek Lndg	Queens Creek			♦		♦												♦		♦		♦		
Grimstead Pblc Lndg	Milford Haven	♦			♦	♦			♦	♦				♦				♦	♦				♦	
Milford Landing	Edwards Creek	♦	♦															♦		♦		♦		
Whites Creek Lndg	Whites Creek			♦		♦														♦	♦	♦		
Festival Beach	Ches Bay	♦	♦										♦								♦			♦
Haven Public Beach	Ches Bay	♦	♦										♦								♦			♦
Aaron's Beach	Ches Bay		♦										♦											♦
Town Point Landing	Put-In-Creek	♦		♦	♦															♦	♦	♦		
William's Wharf Lndg	East River	♦			♦	♦			♦				♦			♦			♦	♦	♦		♦	
Winter Harbor Lndg (Old Mill Landing)	Winter Harbor	♦	♦															♦		♦	♦	♦		
Winter Harbor Haven	Winter Harbor	♦			♦	♦									♦					♦	♦			♦
Horn Harbor Landing	Horn Harbor		♦																		♦			
Davis Creek Landing	Davis Creek				♦	♦									♦					♦	♦			
Doctor's Creek Lndg	Doctor's Creek		♦																		♦			
New Point Comfort	Ches Bay	♦			♦		♦	♦								♦				♦	♦			
East River Boat Yd	East River		♦		♦															♦	♦		♦	

however, this will require a collaborative effort between VDOT, the County and private property owners in order to effectively improve stormwater management along County roads.

There should be a discussion with VDOT to identify the feasibility of an alternative route to bypass Route 14 to the east of the Courthouse area. In an emergency event, such as a hurricane, if Route 14 (Main Street) is blocked due to flooding, there is not a primary access route to evacuate residents in the southern and eastern portions of the County. A potential alternative route could be a north/south road east of the Courthouse area connecting Tabernacle Road to Buckley Hall Road. In addition, since there is only one bridge to Gwynn's Island, alternative means for evacuating residents of the Island in the event of a hurricane should be identified.

When the 2035 Regional Transportation Plan is completed, it should be adopted as an amendment to this Comprehensive Plan.

Recreation

7 Recreation opportunities are very promising for Mathews County in the future. Increased public access to shorelines and waterfront facilities can provide citizens and visitors with wonderful experiences and resources that have been so highly valued by residents for generations. The 2003 *Statewaters Access Plan for Mathews County* provides an extensive inventory of public facilities and makes recommendations for potential improvements. This plan should be updated with respect to recommendations for improvements and priority facilities. The East River Boat Yard property in West Mathews offers great potential for additional public access.

7 In addition, there are increased opportunities for use of existing bicycle routes and blueways, which can promote the County as a seasonal destination. In general, these compatible recreation activities are sensitive to the environment and beneficial to the local economy.

At present, the County does not have an adopted Parks and Recreation Master Plan. This type of planning document would be very beneficial in assessing the existing facilities and programs in the County. The document could be developed in coordination with the YMCA and other recreational programming agencies and could provide a more detailed and directed plan for public needs and future recreational opportunities within the County.

Emergency Services

Public emergency systems and public response for hazards are important future issues that will need to be carefully monitored on an annual basis. While the existing volunteer emergency/fire system is working well in Mathews, there should be an annual review of emergency events, response times/coverage, facilities, and equipment, etc. to ensure that the public's health, welfare, and safety are met. At present, the County is supplementing volunteer services at primary facilities during peak weekdays and weekends; additional funding and staffing may be

Planning / Development Policies and Strategies for Public Facilities & Services	
PFS 5	**Alternative modes of transportation, such as bicycle routes, sidewalks, and bus services, are important County facilities that benefit both residents and visitors. The County should pursue pedestrian and bicycle improvements in community commercial centers, near schools, and central public facilities.**
	1. Apply for Transportation Enhancement Funds and other alternative transportation funding sources to assist in making improvements. Establish a priority list for bicycle routes to target funding for design, engineering and construction.
	2. Revise zoning and subdivision regulations to require pedestrian provisions and improvements for business development in community commercial centers.
	3. Designate and sign bicycle routes; develop a bicycle route guide.
PFS 6	**Parks and public recreation areas are important community amenities that directly influence the community's quality of life and economic well-being. A well-thought out master plan is an effective tool for meeting community recreation needs and phasing capital improvements.**
	1. Develop a Parks Master Plan that provides an inventory of public recreational facilities and programs and identifies needed improvements for the short and long-term.
	2. Improve directional signage for existing public beaches and water access points.
PFS 7	**Mathews County is recognized for its natural environment and inherent recreational amenities. Public access to the water and shores enhances residents' quality of life and is fundamental to the eco-tourism segment of the County economy. The County should continue to promote public access and appropriate facilities along its waterways and shorelines.**
7	1. Update the adopted 2003 Mathews County Statewaters Access Plan to assess public needs, priorities, and recommended improvements for water access. Work with the Middle Peninsula Chesapeake Bay Public Access Authority to develop a survey to assess County residents' needs for new and/or expanded public water access sites and facilities.

Planning / Development Policies and Strategies for Public Facilities & Services	
7	2. Pursue site planning and recommended improvements to the East River Boatyard property for public recreation and access. Consider grant funding for planning and construction (e.g., Virginia Department of Conservation & Recreation, Virginia Game & Inland Fisheries, U.S. Fish & Wildlife, and EPA Brownfields).
7	3. Continue to work with VIMS and other partners to plan, map, and promote the Mathews County Maritime Heritage Trail.
PFS 8	**Effective public safety and emergency services are essential to the health and welfare of residents and visitors. Volunteer services are highly valued in Mathews County. Collaboration and regular communication with County officials and residents are essential to ensuring adequate emergency response and services.**
	1. Continue to monitor annually emergency facility and response information and to identify community needs and challenges.
	2. Support public-outreach efforts to recruit volunteers and raise revenue for the purchase and maintenance of emergency equipment.
	3. Consider implementing an emergency response fee for non-emergency or false alarms to occupied residential/business structures or to vacant structures.
PFS 9	**Hazard Mitigation and Response Planning is important to community safety. Mathews County has special challenges with respect to coastal storms and flooding. Both public and private interests should be diligent in providing advance information and appropriate procedures for dealing with potential hazards.**
	1. Reach out to seasonal non-residents and new residents regarding potential hazards and emergency preparedness and procedures; make information readily available at rental properties, local businesses, and civic areas.
	2. Develop a hazard mitigation strategy for addressing drought conditions and protecting water supplies. Identify specific strategies for addressing drought under "watch" conditions, "warning" conditions, and "emergency" conditions. Specify conservation procedures and adopt corresponding ordinances to manage water use.

Virginia Coastal Zone Management Program

1 4 7

Mathews County is included in the Virginia Coastal Zone Management Program. This program was established in 1986 (and reauthorized in 2006) to protect and manage Virginia's coastal areas. It is part of a national coastal zone management program coordinated by the National Oceanic and Atmospheric Administration (NOAA) which provides funding for programs. The goals of the program are to protect and restore coastal resources, habitats, and species; restore and maintain the water quality of coastal waters; protect air quality; reduce and prevent losses of coastal habitat, life and property; provide for sustainable fisheries and aquaculture; promote sustainable ecotourism and increase public access to coastal waters; promote renewable energy production; ensure sustainable development on coastal lands; minimize coastal resource land use conflicts; and promote education. In Virginia, it is administered through a network of participating state agencies including: Virginia Department of Environmental Quality (lead agency), Virginia Department of Conservation and Recreation, Virginia Department of Game and Inland Fisheries, Virginia Marine Resources Commission, Virginia Department of Health, and the Chesapeake Bay Local Assistance Department; assisting agencies include the Virginia Departments of Historic Resources, Forestry, Agriculture and Consumer Services, and Transportation, Virginia Institute of Marine Science, Virginia Economic Development Partnership, and the Coastal Planning District Commissions.

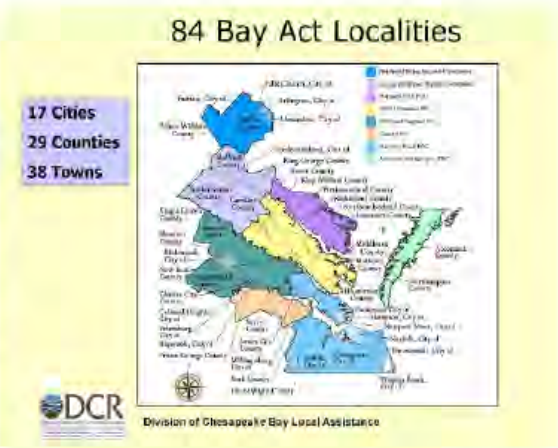
Chesapeake Bay Act

In 1988, the State of Virginia adopted the *Chesapeake Bay Act* which established the foundation for public policy and planning for the Chesapeake Bay, the largest estuary in the United States, and adjacent lands. In 2000, Virginia signed *Chesapeake 2000*, a partnership agreement with Maryland, Pennsylvania, the District of Columbia, and the Environmental Protection Agency, that committed the Commonwealth to a shared vision for a restored ecosystem and goals for the future related to living resources, habitat protection, water quality, land use and stewardship.

Introductory Paragraph - 1988 Virginia Chesapeake Bay Act

"Healthy state and local economies and a healthy Chesapeake Bay are integrally related; balanced economic development and water quality protection are not mutually exclusive. The protection of the public interest in the Chesapeake Bay, its tributaries, and other state waters and the promotion of the general welfare of the people of the Commonwealth require that: (i) the counties, cities, and towns of Tidewater Virginia incorporate general water quality protection measures into their comprehensive plans, zoning ordinances, and subdivision ordinances; (ii) the counties, cities, and towns of Tidewater Virginia establish programs, in accordance with criteria established by the Commonwealth, that define and protect certain lands, hereinafter called Chesapeake Bay Preservation Areas, which if improperly developed may result in substantial damage to the water quality of the Chesapeake Bay and its tributaries; (iii) the Commonwealth make its resources available to local governing bodies by providing financial and technical assistance, policy guidance, and oversight when requested or otherwise required to carry out and enforce the provisions of this chapter; and (iv) all agencies of the Commonwealth exercise their delegated authority in a manner consistent with water quality protection provisions of local comprehensive plans, zoning ordinances, and subdivision ordinances when it has been determined that they comply with the provisions of this chapter."

1



The Chesapeake Bay Act required local governments to incorporate water quality protection measures into adopted plans and regulations; to define certain lands important to the water quality of the Chesapeake Bay; and authorized the Chesapeake Bay Local Assistance Board (CBLAB) to administer the program. The promulgated regulations developed by the Board required that local governments develop local programs to comply with the Chesapeake Bay Act and to promote high water quality, prevent pollution, and encourage water resource conservation. Every local program must incorporate the Chesapeake Bay Act provisions into the comprehensive plan, define important areas, and include measures to protect water quality in zoning, subdivision and erosion control ordinances.

1

1

Aquatic Resources, Commercial and Recreational Fisheries

Mathews County is known for its diversity of aquatic resources – natural shorelines, expansive wetlands, and productive environmental habitats. In 2004, VIMS prepared a "Blue Infrastructure" inventory of Virginia's Coastal Zone[20] that identifies important economic and ecologic aquatic species and resources. These resources included: aquaculture sites, Baylor grounds, anadromous fish streams, oyster reefs, submerged aquatic vegetation (SAV), natural preserves, tidal mudflats and threatened/endangered waters, among others. A map of the blue infrastructure for Mathews County is on the following page. More detailed mapping is available from VIMS at *http://ccrm.vims.edu*.

7

The County continues to work with regional agencies to promote and protect the area's aquatic resources and commercial fisheries. One active project in 2009 hosted by the Middle Peninsula Planning District Commission is the Mathews Aquaculture and Working Waterfront Project. This important project will identify important aquaculture assets and working waterfront sites in the County and work with interests and governmental leaders on future land use and development options to protect and preserve those resources. In addition, VIMS may be helpful in furthering that effort through application of its aquaculture vulnerability model. This program was set up as a tool for Northampton County, but relevant GIS information could be applied to the model for Mathews County.

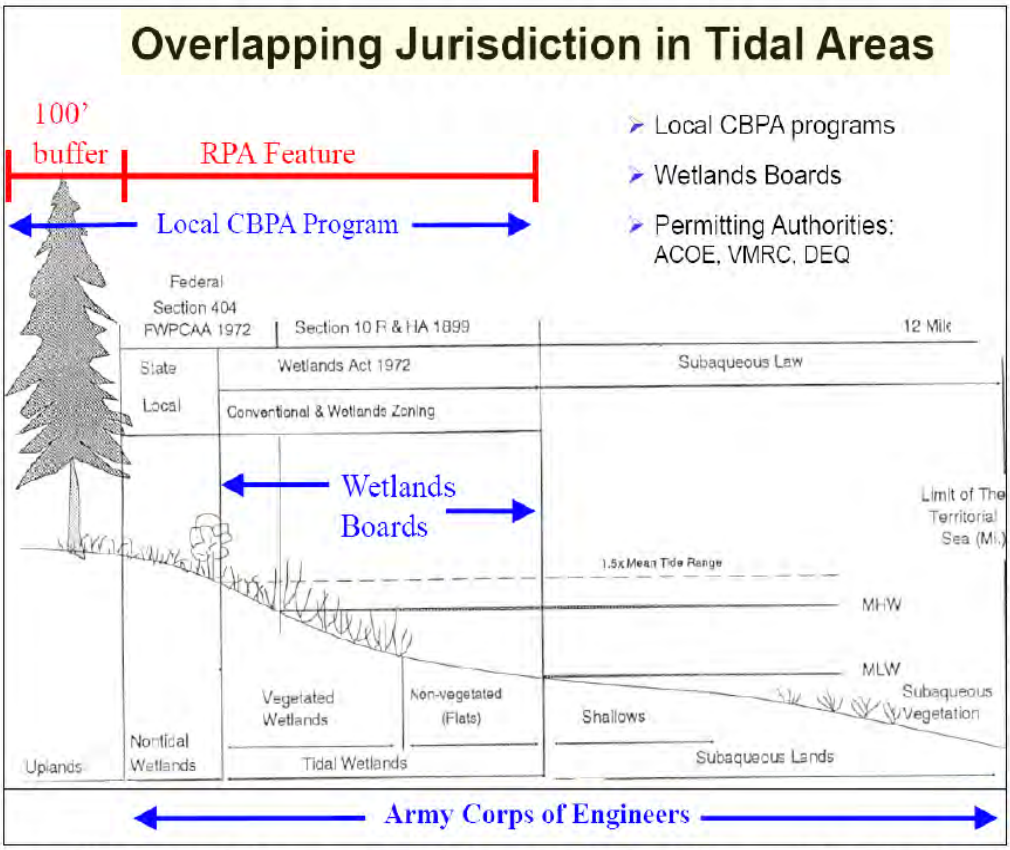
1 4 7

[20] Virginia Institute of Marine Science - Berman, Hershner, and Schatt, Center for Coastal Resources Management. October 2004. *Blue Infrastructure Final Project Report and Deliverables. Blue Infrastructure Criteria and Map.*

Chesapeake Bay Preservation Areas

A map showing the Chesapeake Bay Resource Protection Area (RPA) and Resource Management Areas (RMA) in Mathews County, as defined by the Chesapeake Bay Act, is depicted on the following page. These areas are regulated by the Mathews County Zoning Ordinance as set forth in the Chesapeake Bay Preservation Area Overlay District. The district regulations include required performance criteria for development or redevelopment of land within these areas (e.g., minimal land disturbance, preservation of indigenous vegetation, best management practices, minimal impervious cover, control of stormwater runoff, etc.) and establish procedures for developing property. Development activities in a tidal wetland, such as a dock, shore stabilization, removal of vegetation, etc., must be approved by the County Wetlands Board. In addition, other federal and state agencies (e.g., Corps of Engineers, Virginia Marine Resources Commission, etc.) may be involved in development approvals. The graphic below provides a summary of the varied interests involved in reviewing activities in tidal areas.

1 2



Source: VA Department of Conservation and Recreation, Division of Chesapeake Bay Local Assistance.

The most erodible soils are those of the Keyport silt loam and Sloping and Steep Sandy Loam series. These soils are found along the streambanks of the Piankatank River and Queens Creek in the northern part of the County. A map showing the locations of these erodible soils is on the following page.

1 In 2008, the Virginia Institute of Marine Science updated the *Shoreline Assessment and Inventory of Mathews County*. A draft report prepared in May 2009 provides detailed information on the shoreline vegetation, existing stabilization structures, and erosion conditions;[21] a final report is expected by December 2010. It will be insightful as a tool to understand the shoreline conditions of the County, particularly with respect to making better decisions on shoreline management. A map of the shoreline inventory that illustrates shoreline erosion conditions follows the erodible soils map. This map was prepared based on information provided by VIMS related to the shoreline inventory study. The Shoreline Inventory Report should be referenced for more specific information on a site basis for such elements as riparian land use, streambank conditions and shoreline features, including structures. This informative report and detailed maps are available on line at *http://ccrm.vims.edu*.

1 A companion initiative that will be beneficial in assisting shoreline management is *Living Shorelines for the Chesapeake Bay Watershed*, prepared by the Center for Coastal Resource Management at VIMS. This collaborative project provides extensive information on natural methods for protecting tidal shorelines using native wetland plants, grasses, shrubs and trees. The benefits of choosing living shoreline techniques include: reduced costs for shoreline stabilization, enhanced water quality, increased wildlife habitat and access, and reduced wave energy. The report is an excellent guide for property owners in understanding and managing their shorelines. The living shoreline report and the shoreline inventory report will be very useful to property owners, contractors, and the County Wetlands Board in helping to assess the best environmental practices for shoreline stabilization.

Siting of Docks, Piers, and Structures

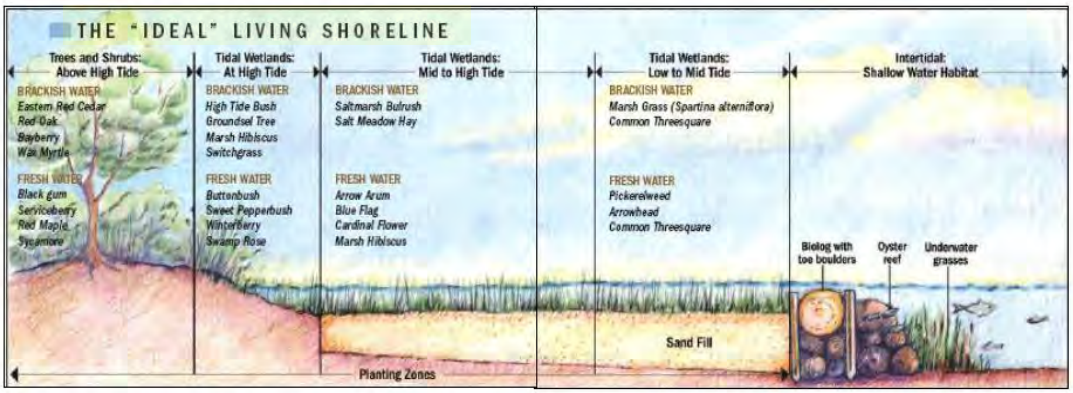
In accordance with the Chesapeake Bay Act, the local government must manage the placement of docks, piers and shoreline structures. In Mathews County, this is done through the Wetlands Board and various federal and state permitting agencies. The most comprehensive assessment

7 of shoreline structures for Mathews County is that complied by VIMS as part of the *Shoreline Assessment and Inventory of Mathews County*. Detailed maps of shoreline structures are available on line at http://ccrm.vims.edu/gis_data_maps/shoreline_inventories/virginia/mathews. Property owners and interested parties should consult this mapping and other resources to determine the best management practices and appropriate locations for shoreline structures.

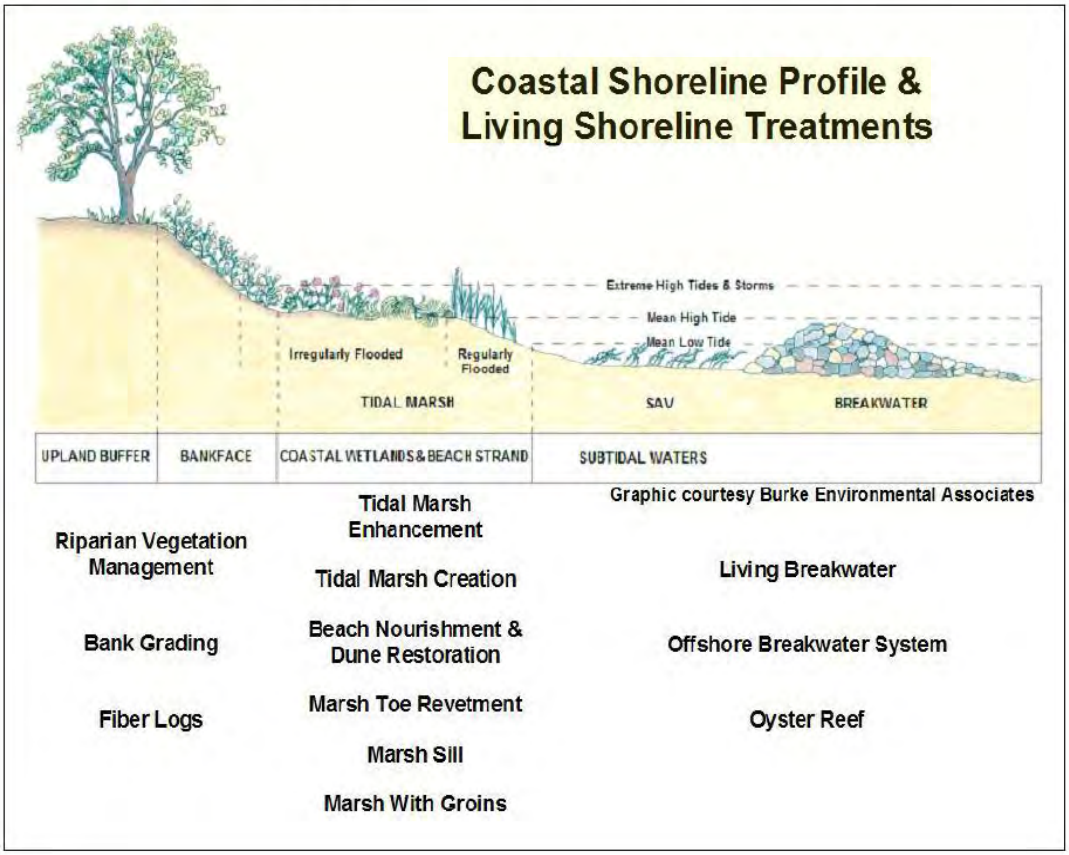
---

[21] Virginia Insitute of Marine Science, Center for Coastal Resources Management. May 2009, Draft. *Mathews County, Virginia Shoreline Inventory Report Methods and Guidelines.*

1



Graphics illustrating the living shoreline.
Source: Living Shorelines for the Chesapeake Bay Watershed. VIMS, Center for Coastal Resource



Protection of Potable Water Supply

Because the water table in Mathews County is located very near the surface, there is considerable potential for contamination of groundwater and potable water supplies.

~~The greatest potential~~ One of the principal sources for contamination is from septic systems. Unsaturated soil is essential for treating wastewater. In particular, the permeability of the soil to allow the flow of water through it over a sufficient period of time to filter contaminants is especially important. The permeability of the soils in Mathews County is very limited. A map illustrating the permeability is found on the following page. As indicated, soil permeability is between 0.6 and 6.0 inches per hour for most areas of the county; this absorption capacity is a challenge for septic systems (as shown in the additional map). The northern part of the County and a limited amount of inner shoreline on the East River provide the better opportunities for handling septic systems.

In 2010, The Hampton Roads Sanitation District will begin construction on a new sanitary sewer transmission force main from Mathews Court House along Route 198 and Route 3 to Gloucester County. (Additional information on this initiative is found in the Public Facilities and Services (Utilities) section of this plan. While this initiative should help to reduce contamination impacts on potable groundwater, the County will need to provide careful oversight in the future to ensure a safe and ample water supply. This will involve very close coordination with the Virginia Department of Health, and public education on the maintenance of septic and alternative waste systems.

1 ~~Another~~ Other sources of potential water contamination are agricultural runoff, animal wastes and discharges from boats. While many agricultural operations may utilize best management practices, there is an opportunity to increase public communication with citizens and businesses to promote improved agricultural practices that will enhance water quality.

7

Access to the Waterfront

Mathews County is extremely fortunate to have over 280 miles of shoreline. This tremendous asset is highly valued by residents and County officials because of its contribution to the area's quality of life, recreation, and local economy. In 2003, the County adopted a *Statewaters Access Management Plan* that provided information on all public access areas and marinas throughout the County. The plan also includes specific recommendations and priorities for improving public facilities. More detailed information on this waters access plan is found in the preceding section, Public Facilities and Services (Recreation).

Climate Change

In recent years, there has been continued discussion about climate changes that are being experienced around the world. While there are varied opinions on causes and ultimate effects, it is recognized that changing weather patterns may contribute to rising sea levels which could significantly affect both inland and coastal communities. Regardless of the causes of climate change, as well as the pace and magnitude of such changes , it is essential that communities appropriately plan for changing trends and adjust their development patterns to minimize potential adverse impacts~~, locally, regionally, and nationally~~.

~~Many organizations and governmental agencies have studied climate change trends. These include world-wide organizations like the World Meteorological Organization and the United Nations (Intergovernmental Panel on Climate Change), the Environmental Protection Agency (Chesapeake Bay Scientific and Technical Advisory Committee), National Wildlife Federation, and many others~~.

~~In 2008, Virginia's Commission on Climate Change[22] weighed in on the discussion and provided recommendations for reducing greenhouse gas emissions by 2025 and strategies for adapting to climate changes in Virginia.~~ Possible sea level rise in conjunction with shoreline erosion and coastal subsidence (or sinking) is a ~~major~~ concern for coastal Virginia. This is especially important for populated areas in terms of property damage and safety concerns as well as in terms of potential impacts on natural communities responding to changes in vegetative patterns, wildlife populations, and chemical responses due to ~~increased~~ temperature variation, runoff, varied rainfall, etc. ~~Such changes ultimately result in a domino-effect that eventually affects human health and safety (e.g., in compromised food supplies, increased frequencies of storms or drought, and disruption of natural ecosystems). Key findings of the Commission were:~~

- ~~Virginia is likely to see species range shifts, local extinctions, and habitat loss. Many new exotic or invasive species may move into Virginia or pest species may flourish under changing conditions.~~

~~[22] Governor's Commission on Climate Change. December 2008. *Final Report: A Climate Change Action Plan.*~~

Land Use, Development and Redevelopment of Resource and Management Areas

Given development constraints and the potential long-term effects of climate change, future land development and redevelopment in Mathews County must be carefully planned and coordinated with environmental features. This includes not only new buildings and the rehabilitation of existing structures, but also the development of supporting public infrastructure. The next section on Land Use provides a more detailed analysis of existing land use and development patterns and presents recommendations for addressing outstanding issues and amending land development patterns to meet the goals of the future.

Environmental Challenges and Opportunities 2030

The environmental resources of Mathews County provide for the economic and social well-being of residents and businesses. Careful planning and management of the environment, and in particular water quality, must be a priority in order to sustain the quality of life that is cherished by citizens and visitors. The environmental resources in Mathews include complex ecosystems that are sensitive to such things as stormwater and agricultural runoff, inadequate wastewater treatment, soil erosion, and changes in temperature, rainfall and overall climate. All of these challenges are intended to be monitored and managed in conjunction with Chesapeake Bay and Clean Water regulations, among others; however, it takes many partners, extensive public education, and diligent communication to successfully achieve desired environmental goals and outcomes. Ultimately, clean water is essential to community health, safety and welfare. It will be important to pursue and emphasize effective means of monitoring and treating point and non-point source pollutants to achieve the water quality desired for Mathews County and the surrounding region. Traditionally, planning in Mathews County has focused only on land area within the County boundaries; changing the paradigm to expand planning beyond the land and over the water (still within County territorial boundaries) could significantly help to manage future water quality and minimize land use conflicts.

1 1 2

One of the most difficult challenges for Mathews County will be appropriately balancing the increasing conflicts regarding use of and access to the waterfront. Understandably, waterfront residents have personal interests for using and protecting their properties, while waterfront businesses have need for water access and the ability to engage in aquatic trades. In addition, citizens of the County have rights to the waterfront for access and recreation. Yet, underlying all of these interests are the sensitive environmental systems that must be recognized and protected in order to sustain the quality of life desired by all.

1 4 7

The potential rise in sea level should be one of the factors considered in future development patterns. Over time, it is ~~expected~~ probable that there will be ~~significant~~ changes in vegetation, the landscape, and flooding patterns. The projected degree of impact is widely discussed and varies among experts and designated study panels. Thus, to be most effective it is best to ~~plan for a worst case scenario and~~ be conservative when selecting sites for public facilities or permitting development in areas that may be susceptible to possible rising sea levels. In

addition, because the expansive wetlands of Mathews County are so important to the physical and ecological attributes of the region, it will be important to ensure that these beneficial communities are not depleted, but rather protected and allowed to transition naturally.

5 Like many communities, Mathews County residents are interested in maintaining the natural environmental character and reducing unnecessary lighting at night. The adoption of a "dark sky" ordinance can assist the County in reducing spillover lighting and maintaining natural conditions that are enjoyed by residents and important for the environment. New development could be required to provide "shielded" lighting fixtures and appropriate lighting standards could be established to ensure safety, yet control maximum illumination.

Planning/Development Policies, Action Strategies for Environment 2030

The following planning and development policies and action strategies are established to achieve the desired vision for sustaining a quality environment in Mathews County:

Development Policies and Strategies for Environment	
EN1	**Environmental resources are the natural and the economic foundation of the quality of life in Mathews County. Protection of natural resources and maintenance of excellent water quality and clean air are essential to the safety and prosperity of businesses and residents. For new development and redevelopment, there should be no net increase in environmental loss or pollution.**
1	1. When considering new development or redevelopment, evaluate potential impacts on environmental features and water quality, particularly with respect to runoff, pollutants and waste management. Require mapping of environmental features for reference and applicant study/response to potential impact. Require use of low-impact development techniques (or "light imprint" alternatives[24] in conjunction with site development or redevelopment. These are in addition to use of best management practices.

[24] Light imprint techniques for managing runoff are similar to low-impact engineering methods; they result in a blended system of engineering techniques and aesthetic design features that complement the natural and the built environment. For more information, see www.lightimprint.org.

Development Policies and Strategies for Environment	
1	2. Develop and publish a quick reference guide for citizens, contractors, and developers that illustrate use of low-impact or light-impact development techniques for several development scenarios – single-family home, small business, waterfront development, etc. Focus on good site design that minimizes disturbance of land, preserves indigenous vegetation, and minimizes impervious cover.
	3. Amend the Zoning and Subdivision Ordinances to incorporate the most up to date performance criteria for improving water quality in order to comply with Chesapeake Bay Act Phase III Regulations.
	4. Amend the County zoning ordinance to include a Floodplain Overlay District to expand the available tools for reducing flood insurance rates and protecting public and private investments. Strengthen development standards and types of land uses permitted in the flood hazard and storm-induced wave zones (e.g., A/AE and V/VE zones). Seek grant funding from the Hazard Mitigation Grant Program through FEMA to reduce hazards and losses. ~~available from. and the Virginia Department of Emergency Management~~.
	5. Encourage new development or redevelopment that is designed to meet "green building" standards such as LEED. (This can reduce impervious surfaces, reduce water and energy consumption, minimize site disturbance, and reduce pollutants.) Accept the state-wide challenge and participate as a County partner in the Go Green Virginia Campaign managed by the Virginia Municipal League, www.gogreenva.org.
	6. Promote water conservation for public health, safety and welfare by encouraging (and requiring where possible) the use of low-flow water fixtures, showerheads and toilets in all new residential and business development. Encourage appropriate residential and business development that will not have large demands on the potable water supply. Promote water conservation and wise water consumption through public education.
	7. Develop a wellhead protection program that establishes minimum requirements for locations of wells and adjacent development. Amend County regulations to implement development standards and well protection measures for potable water supplies.

Development Policies and Strategies for Environment	
	8. Sponsor, coordinate and promote regular septic tank pump-out programs throughout the County. Designate priority "pump out zones" and adopt regulations to ensure compliance. Identify existing pit privies and seek better alternative solutions for managing waste. Solicit grants and financial programs that can assist the County in these priority efforts.
1	9. Promote increased public education regarding water quality impacts of non-point source pollutants. In particular, encourage proper disposal by boaters of bilge water (contains contaminants) and improved management of farm animals near surface waters.
	10. Amend the County subdivision ordinance to establish better standards and requirements for development of community water and wastewater systems in order to improve and protect water quality and provide a safe water supply for users. Requirements should exceed the minimum standards required by the health department.
	11. Consider expanding the Chesapeake Bay Resource Management Area in Mathews County to better manage development impacts on the environment.
5	12. Develop and adopt a "dark skies" ordinance that will require shielded lighting for new building development and establish appropriate lighting standards.
EN2	**Mathews County has a strong community heritage in agriculture, aquaculture and forestry. These natural resource trades remain important economic sectors and should be encouraged and supported in order to maintain community character and prosperity.**
1	1. Protect the environment by promoting and encouraging the use of best management practices and riparian buffers in agriculture and forestal operations. Promote environmental stewardship among landowners and operators by actively working with them in educational efforts and incentive or recognition programs. Tie reduced land use taxation to use of effective environmental practices. Encourage landowners to consider conservation easements for their properties.
	2. Maintain the visual quality of Mathews County by encouraging selective-cutting forestry efforts that remove only portions of the tree cover in place and that minimize soil and land disturbance. Promote these efforts

Development Policies and Strategies for Environment	
	through public education and increased communication with large-tract property owners of forested land. Revise zoning ordinance to better define silviculture and establish standards for protecting water quality and natural features. Revise soil and erosion regulations to specifically address tree removal and site stabilization requirements.
EN3	**The wetlands of Mathews County are critical environmental features that are of substantial benefit to the health of natural systems and to coastal living. ~~Their many functions sustain water quality and aquatic life, while providing aesthetic qualities for residents, businesses and visitors.~~ Protection and preservation of County wetlands should be a priority in order to sustain environmental quality, public health and safety, and the valued character of the community.**
1	1. Encourage vegetative approaches and "living shoreline" techniques where appropriate for stabilizing coastal property edges. Develop public education materials and programs that will promote use of these techniques.
1	2. Require "living shoreline" training for wetland board members, contractors and others who are involved in coastal property management. Consider offering an annual stipend for board members and link it to completion of environmental training. Provide continued leadership in this effort by helping to establish a "certification" program for wetland board members and contractors that can be a model for other communities.
	3. Support annual inventories of County wetlands and other natural resources. Encourage regular reporting and sharing of information among agencies, governmental officials, and citizens.
1 7	4. Utilize the Shoreline Inventory and Management Plan prepared by VIMS in evaluating existing conditions and proposed plans for development. Promote and encourage citizen access to the plan. Integrate into governmental permitting, board decisions, and planning recommendations.
EN4	**The waterfront of Mathews County is a valuable ecological, recreational and scenic asset that should be available to all citizens. Use of waterfront lands should be balanced to provide reasonable access points for the public and protection of the environment, while recognizing the rights of private residential and business property owners.**

Development Policies and Strategies for Environment	
7	1. Review and update the County Statewaters Access Plan at least every five years to ensure that public access and recreational needs are met. Update the 2003 Plan in conjunction with developing a Parks and Recreation Master Plan.
7	2. Site any new waterfront community facilities or marinas in accordance with the checklist and criteria established by the Virginia Marine Resources Commission for Marinas and Community Facilities for Boat Mooring (1988, www.mrc.state.va.us). Coordinate locations with aquaculture and blue infrastructure resources to minimize land use conflicts and ensure protection of water quality.
4 7	3. Identify desirable waterfront and off-shore locations for pursuing aquaculture. Develop a strategy for improving water quality, managing land use, and reducing development and pollution conflicts.
EN5	**<u>Potential</u> sea level rise, <u>shoreline erosion</u> and <u>coastal subsidence</u> over the next several decades ~~is~~ <u>are</u> projected to have effects on coastal areas and natural communities. To adequately prepare for possible changes in rising sea levels and weather patterns, development should be carefully reviewed and managed to take into account the potential impacts. Where possible, conservation measures should be employed to protect natural communities and prevent investment losses in the future.**
	1. Promote conservation in the eastern and southern coastal areas of Mathews County that may be most affected by possible rising sea levels and flooding. Amend the County zoning ordinance to address possible sea level changes and develop appropriate use regulations and development standards. <u>Consider amending the zoning ordinance to increase shoreline setback requirements.</u>
	2. Plan, site and develop new public buildings and facilities so that they take into account possible rising sea levels. Require evaluation of impact as part of the governmental contract for services. Locate facilities in the most appropriate areas.
	3. Protect existing facilities from possible sea level rise through advanced planning and implementation of environmentally acceptable protection methods.

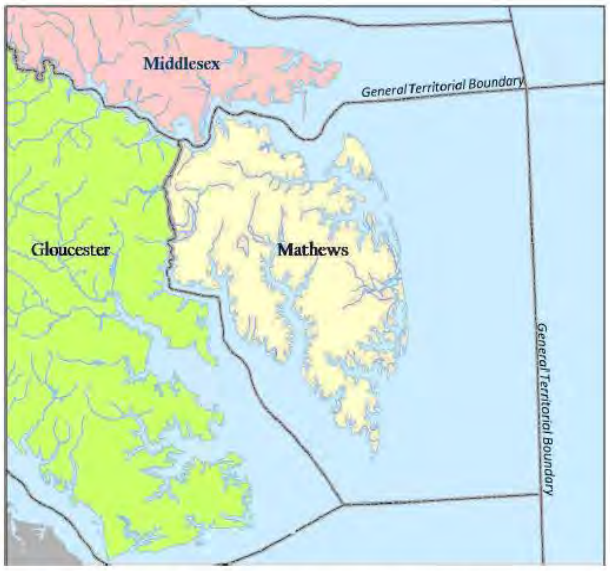
Environment: Special Action Projects

Sustaining the environment of Mathews County will provide the greatest benefits to citizens and businesses for the future. The following paragraphs discuss some initial projects that can assist the County in progressing toward the established goals and strategies for protecting and enhancing the environment.

Planning for Land and Water within County Territorial Boundaries

1 2

To effectively plan for continued safety and well-being in the County, there must be expanded controls and management of the territorial waters surrounding the County. This will require developing new tools and working regionally with other local governments and environmental agencies to model specific legislation and methods to improve water quality in the Chesapeake Bay watershed and better manage land use conflicts (particularly with respect to aquaculture). Public education and communication will be key to the success of the efforts and the adopted programs.



Source: Middle Peninsula Planning District Commission. Aquaculture Steering Committee 2009.

Hamlet

This land use category is proposed for businesses serving local residents in several areas of the County. It would be applicable to the existing business areas of Hudgins, Gywnn's Island, and Cobbs Creek. A hamlet consists of a small-scale, compact settlement area that may include several business uses and community services.

Land uses may include a small convenience store, post office, fire station, church, professional office, neighborhood retail store or restaurant. These uses should be oriented to pedestrians, close to the street, and have small-scale signage and limited lighting (because of its proximity to nearby residences). Parking should be minimal and located to the side or at the edge of the street. Housing may be located adjacent to the hamlet or within the hamlet above ground floor commercial uses. Rehabilitation of existing buildings for alternative purposes should be encouraged; new buildings should complement the surrounding residential uses.

Crossroads Community

Several County primary or secondary road intersections have developed as small crossroad business centers. Examples of a crossroads community are: Dixie, Ward's Corner, Port Haywood, North and Bohannon. In addition to the central village and hamlets, these areas also serve local residents and provide small business opportunities or services at intersections of roads that frequently carry neighborhood traffic. Typical land uses could include a small convenience store, gas station, post office, café or small office. New buildings should respect the existing architectural character of nearby buildings. Rehabilitation of existing buildings for alternative purposes should be encouraged. Dixie and Ward's Corner may evolve into hamlets, since they may become more developed with the proposed extension of the sanitary sewer transmission force main line.

Waterfront Business

1 4

The working waterfront, fisheries, and aquaculture businesses of Mathews County should be continued to the extent environmentally feasible. Appropriate business locations on the waterfront are important to the long-term economy of the County and should be carefully protected and utilized in a productive manner. In particular, preference should be given to promoting areas and sites for working waterfront operations, fishing, aquaculture, and habitat preservation that will support the economy, enhance the environment, and ensure quality production of fish and shellfish. There should be a careful assessment of new waterfront land uses with respect to their effects on important fishing and aquaculture resources. In addition, there should be careful assessment of existing waterfront land uses to ensure that they use best management practices to protect and enhance the environment. Of note is that it is important to recognize that with the pursuit and promotion of waterfront business development and aquaculture, there may be competing interests among other property owners for use of adjacent

1 4 land and water. Quality fishing and aquaculture production require wise management of shorelines and off-shore waters with promoted understanding of aquaculture operations, processing, and access.

In addition to business uses, there may be appropriate residentially-oriented business uses that are suitable for the waterfront. These could include such uses as a small condominium complex, boutique hotel, bed & breakfast, or community campground. All of these uses must be carefully considered to ensure environmental compatibility and adequate and safe water and wastewater facilities. Like businesses, these types of uses must utilize best management practices to protect and enhance the environment.

Rural Preservation/Conservation

Rural Preservation/Conservation areas include public open space, natural preserves, and areas that should have carefully managed development or be conserved because of special ecosystems or natural conditions. These areas include dedicated conservation areas that are public set-asides for recreation and natural conservation. Other areas noted for preservation/conservation are areas that may be influenced by storm surge or possible rising sea levels over the next twenty years. Generally, further development in these areas should be carefully considered and limited to protect public and private investment and to minimize potential flood damages. Appropriate land uses would include open space, passive recreation, low-intensity residential development, and carefully managed agriculture, forestry or aquaculture.

Corridor Overlay District

A Corridor Overlay District is proposed to extend from historic Mathews Court House, along Main Street, Buckley Hall Road and John Clayton Memorial Highway corridors to the Gloucester County line. This district would follow the major entrance corridors into the County and include the area served by the sanitary sewer transmission force main. It will provide development guidance for new development to enhance the entrances to the historic Mathews Court House. The Corridor Overlay District is expected to be approximately 300 feet on either side of the corridors and would address such elements as general building location and design, parking, access points, landscaping and signage.

Historic Overlay District

A Historic Overlay District is proposed for the historic Mathews Court House and surrounding Mathews village area. This district would provide design recommendations for exterior building improvements and new building construction, as well as establish a process for reviewing building demolition. There is also the opportunity to designate additional historic overlay districts after a countywide survey of historic properties is conducted.

Planning/Development Policies, Action Strategies for Land Use 2030

The following planning and development policies and action strategies are established to achieve the desired vision for land use in Mathews County:

Development Policies and Strategies for Land Use	
LU1	**The desired future land use for Mathews County should represent a sustainable land use pattern that enhances environmental quality while promoting high quality development. Improvements or changes in land development patterns and uses should incorporate sensitive environmental design and best management practices.**
	1. Amend the County zoning ordinance to integrate the land use categories and development standards recommended by this Comprehensive Plan.
	2. Amend the County erosion and sediment control ordinance to address better management of forest and agriculture activities, particularly with respect to vegetation removal, buffers, and site stabilization.
	3. Amend the County Chesapeake Bay Preservation Area Overlay ordinance to expand the limits of the Resource Management Area. Consider additional amendments to improve overall water quality, protect sensitive environmental areas, and promote better management of land and natural resources.
	4. Revise the County zoning map to reflect revised ordinance amendments.
LU2	**The future sustainability of Mathews County requires planning and management of not only land uses, but also the use and treatment of the surface waters surrounding the County. The land and waters are linked; one affects the other. Future land use decisions should consider effects on both the land and the water.**
1 2	1. Pursue planning and management of uses beyond the shorelines of Mathews County. Coordinate approaches and methods with state agencies and other regional governments. Develop agreed upon procedures for reviewing development and use requests that affect land and water. Adopt applicable regulations to effectively manage uses within County territorial boundaries.

Development Policies and Strategies for Land Use	
1 4	2. Amend the Zoning Ordinance to adequately address aquaculture as a land use and amend other relevant regulations in order to protect water quality and appropriately manage aquaculture businesses/operations and surrounding land uses.

Cobbs Creek apply to this future land use category.

- **Hamlet -** This land use category is applicable to Hudgins and Cobbs Creek. A hamlet consists of a small-scale, compact settlement area that may include several business uses and community services. Housing may be located adjacent to the hamlet or within the hamlet above ground floor commercial uses. Rehabilitation of existing buildings is encouraged; new development should complement the corridor and surrounding uses.

- **Crossroads Community** – These are small crossroad business centers that serve local residents on roads that frequently carry neighborhood traffic. Typical land uses may include a small convenience store, gas station, post office, café or small office.

1 4

- **Waterfront Business** – This category is for important working waterfront businesses of Mathews County that are important to the long-term economy. Quality aquaculture requires wise management of shorelines and off-shore waters with promoted understanding of aquaculture operations, processing, and access.

- **Corridor Overlay District -** This district would follow the major entrance corridors into the County and include the Phase I area to be served by the sanitary sewer transmission force main. It will provide development guidance for new development to enhance the entrances to the historic Mathews Court House.

- **Floodplain Overlay District** – This district includes the floodway and 100-year floodplain. This will enable zoning regulation over land uses in the floodplain and increased ability to manage development patterns within the context of the adopted Comprehensive Plan.

Community Opportunities and Challenges

Over the next 10-20 years, some of the opportunities and challenges for Gwynn's Island include:

- Gwynn's Island exhibits a more dense development pattern than other parts of the County and is surrounded by water, making it susceptible to storm winds and rising waters. Land elevations are less than ten feet above sea level and approximately two-thirds of the island is within the 100-year floodplain. Possible sea level rise over the next few decades could affect half of the island. New and existing development must consider these factors and appropriately plan for these potential impacts in an environmentally responsible manner.

- The water table is high and development on the island is served primarily by septic systems. This presents water quality issues for both surface and drinking water. Many of the systems are failing and there is a need for active measures to protect public health and safety. Phase II of the Sanitary Sewer Transmission Force Main is planned to eventually extend to Gwynn's Island; however, Phase I is not yet constructed ~~or paid for,~~ and Phase II is considered a long-term project.

- Many of the older structures on Gwynn's Island have been rehabilitated or expanded, reducing the amount of open space available on the lot. The County does not regulate the degree of lot coverage for development; thus, for those structures on small lots, it may exacerbate drainage issues. To help minimize development conflicts in the future, the County should consider amending the zoning ordinance to establish maximum lot coverage for driveways, parking areas and structures.

4 7

- Because of its proximity to the Chesapeake Bay, the Piankatank River and several inner waterways, the island has historically had many waterfront businesses ranging from marinas to shipyards and seafood processing. There are several public landings. These amenities and historical operations may offer beneficial opportunities for aquaculture development and working waterfront preservation for the future.

- The Islander Hotel once provided bayfront accommodations for tourists and was a gathering spot for residents for special events. It represented the only hotel facility in the County, offering spaces for large hospitality events. This property could be rehabilitated or redeveloped for a similar use; however, access and environmental issues are challenges.

- Gwynn's Island is a tourist destination and home to residents (permanent and seasonal), as well as a place of business for waterfront operations. Most recognize the special small community charm and the waterfront opportunities, but may not realize the delicate balance that must be achieved to maintain the community's qualities,

Community Development Policies and Strategies

Development Policies and Strategies for Gwynn's Island	
GWYNN 1	**Gwynn's Island is an important heritage resource for Mathews County because of its early settlement and its waterfront business history. New or expanded development on the island should complement existing land uses, minimize use conflicts, and respect environmental features.**
	1. Ensure that new or expanded development appropriately addresses environmental constraints and protects water quality. Encourage design solutions that will enhance the environment and protect resources and physical investment for the long-term.
1 4	2. Protect working waterfront operations that are important to the economy of Mathews County. Work with multiple partners to enhance water quality of the Bay and its tributaries. Work with and educate residents and businesses on aquaculture needs and waterfront operations.
GWYNN 2	**Gwynn's Island is important to County tourism and economic development efforts. Underutilized properties within the "hamlet" should be carefully considered for rehabilitation or redevelopment. Commercial waterfront development outside of the hamlet should be limited to appropriate sites for aquaculture.**
	1. Consider redevelopment of the former motel site on Gwynn's Island as a small resort facility. Ensure that development is low-impact, environmentally-friendly and a good neighbor.
	2. Pursue the redevelopment of underutilized waterfront sites as recommended for aquaculture development.
GWYNN 3	**Gwynn's Island is susceptible to storm surges and potential rising sea levels. Public education of risks and mitigation solutions is essential in order to raise awareness, reduce adverse effects and limit property damages. Expanded or new development on Gwynn's Island should carefully consider these factors. Conservation and appropriate environmental solutions are preferred.**

Development Policies and Strategies for West Mathews	
	2. Pursue regular pump-out programs for septic systems in the County.
	3. Expand the Chesapeake Bay Resource Management Area.
WEST 4	**Public access to the waterfront is a priority for the County. Increased public access to the waterfront should be provided in West Mathews.**
7	1. Pursue development of the East River Boat Yard property as a public access point in West Mathews. Develop a concept plan for the property and coordinate it with district residents. Solicit partners and applicable grant funds for implementation. Encourage small business, as well as recreational concepts.

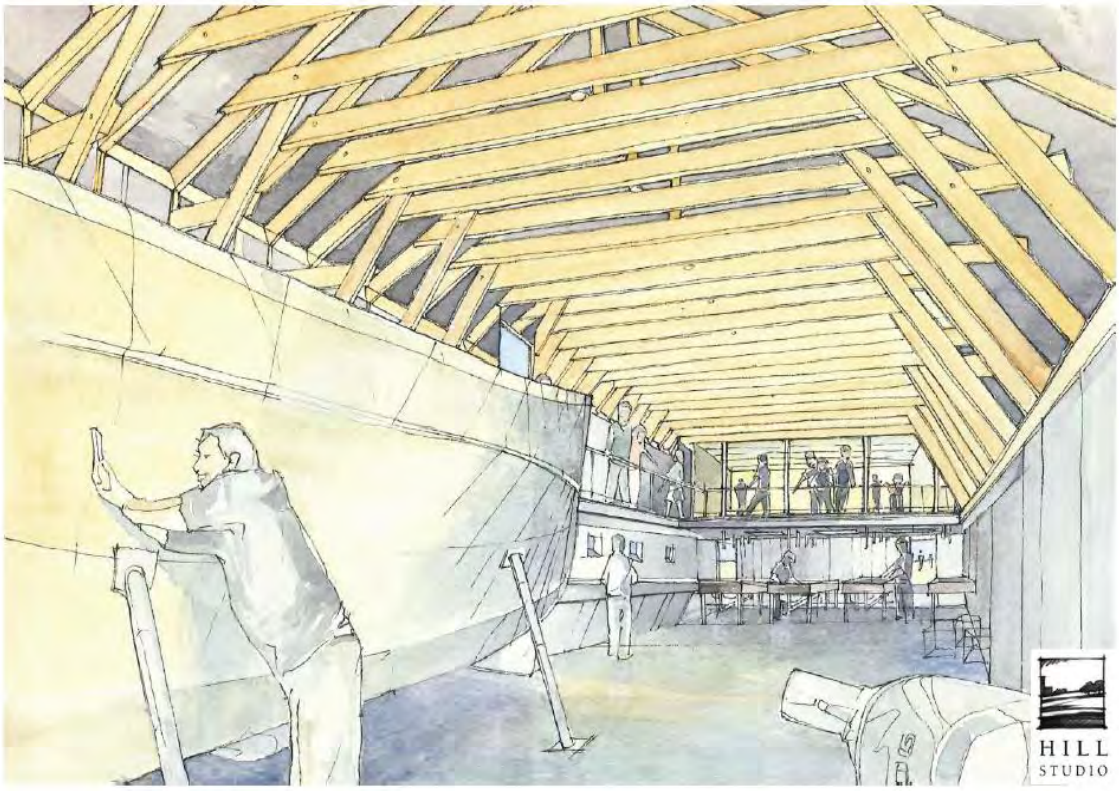
7

East River Boat Yard - Public Access Landing

The East River Boat Yard provides an excellent opportunity to improve public access to the waterfront while encouraging local business. Currently, the County leases several of the existing buildings to local watermen for business purposes. The property has great potential for a variety of uses including public recreation and water access, aquaculture ~~small business development~~ and education. The following illustrations provide concepts that could be considered for the property.

7

One possible concept for the facility could use the primary building fronting on the East River as an active aquaculture operation and offer public viewing of crab shedding tanks and boat building. Exterior decks could provide views of the adjacent wetlands and East River



7

Another possible concept for the East River Boat Yard is to use the existing boat house and launch area for a small business such as a kayak rental enterprise or other similar use. In the illustration below, a large door opens to the water. Local artists may find the interior space attractive for sketching. Other residents may enjoy fishing from one of the piers. At night, the door could be lowered to serve as a screen for viewing movies from piers and anchored watercraft.

Community Opportunities and Challenges

Over the next 10-20 years, some of the opportunities and challenges for the Bayside Planning Area include:

- The proximity of Bayside to water and the low-lying elevation of the land present numerous challenges for development, particularly with respect to flooding, safe water supply, and waste disposal. These issues likely will become more significant in the future, particularly with potential rising sea levels and continued pressure for waterfront living.

- With potential rise in sea level in the future, mitigation of hazard impacts and loss of life and property are important issues that will require active leadership and response from both governmental officials and property owners. The natural environmental areas of Bayside provide important buffers, habitat and transitional ecosystems that protect inland areas and help to enhance water quality. Increased development can diminish these resources and increase the potential for increased flooding and pollution. In addition, this area of the County is most affected by storm surges and there is only one primary arterial (Route 14, New Point Comfort Highway) that provides an evacuation route.

- For existing development in Bayside, particularly that on the waterfront, the challenge for the future will be to stabilize investment to the extent possible and to do that in a manner that supports the environment and benefits Bayside and the County as a whole. Continuing education of property owners and officials regarding "living shoreline" techniques for shoreline stabilization will be very important to furthering the long-term goal of environmental sustainability. Furthermore, raising building elevations above the floodplain may not address many of the continuing challenges and may not be sensitive to neighbors' investments.

1 4

- Bayside has played a significant role in the working waterfront heritage of Mathews County. The waterfront of Bayside offers opportunities for enhancing the economy of the County in a variety of ways: recreation, boating, fishing, tourism, and aquaculture. All of these can co-exist with careful planning and understanding of the goals and vision for the future. In particular, aquaculture may be the most challenging to foster, and the most economically productive for the County with extensive regional benefits.

- Port Haywood is centrally located in the district and could provide additional business services to residents of Bayside. If businesses are expanded, careful oversight is needed to ensure appropriate land uses and building and site development that complement the character of the area.

Community Development Policies and Strategies

Development Policies and Strategies for Bayside	
BAY 1	**Bayside hosts some of the most significant environmental resources and natural vistas in Mathews County. Preservation and protection of this portion of the County is especially important to maintain the cherished character of Mathews County and to sustain its environmental quality. Conservation of important assets should be encouraged. Future development in Bayside should be carefully evaluated with respect to environmental impact.**
1	1. Actively pursue public education and outreach to waterfront property owners regarding environmental sensitivities and alternative practices (e.g., living shorelines, low-impact development, etc.) in order to promote protection and enhancement of valuable environmental resources.
	2. Expand the Chesapeake Bay Resource Management Area.
	3. Amend the Zoning Ordinance to reflect the community vision and future land use recommendations of this plan.
BAY 2	**Bayside is susceptible to storm surges. Public education of risks and mitigation solutions is essential in order to raise awareness, reduce adverse effects and limit property damages. Expanded or new development should carefully consider these factors. Conservation and appropriate environmental solutions are preferred.**
	1. Increase public awareness regarding the risks to property and life during storm surges and long-term risks related to possible sea level rise. When possible, discourage development in high-risk areas or encourage appropriate environmental solutions to reduce impacts. Develop and publish appropriate materials for public distribution.
	2. Work with residents of Bayside to improve community response to storm hazards. Ensure that the County hazard mitigation plan is updated on a regular basis.
BAY 3	**The waterfronts of Bayside host a diversity of economic businesses that serve the regional economy. Working waterfront businesses that enhance the environment are especially important to County economy and should be preserved and promoted.**

Development Policies and Strategies for Bayside	
4	1. Work with the Mathews Aquaculture/Working Waterfront Committee to identify specific opportunities and properties for enhancing aquaculture. Collaborate with multiple agencies and coordinate with property owners and businesses to build understanding and consensus.
1	2. Promote understanding among property owners of the multiple uses of waters and the waterfront, particularly with respect to the economic and environmental importance of sharing these important resources. Consider a regular newsletter or written publication to provide important information. Establish a business-citizens forum that can provide regular opportunities for discussion of conflicts or issues.

Bayside: Special Action Projects

Bike Route & Signage

7 The Bayside area provides wonderful opportunities for bicyclists. A signed bicycle route would assist visitors and link important community recreational facilities and landmarks.

Haven/Festival Beach Improvements

7 Haven/Festival Beach is used by many residents and visitors. Continued investment in the facility will provide expanded recreational benefits and assist in tourism efforts.

Appendix 5:

Mathews County Industrial Development Authority Meeting Minutes and Signed Resolution

AT A MEETING OF THE BOARD OF DIRECTORS OF THE INDUSTRIAL DEVELOPMENT AUTHORITY OF MATHEWS COUNTY, VIRGINIA HELD IN THE MATHEWS COUNTY ADMINISTRATION BUILDING, MATHEWS, VIRGINIA, ON WEDNESDAY, THE 10th DAY OF MARCH, 2010 AT 6:30 P.M.

Board of Directors Members Present: Mr. Hal Bourque, Chairman
Mr. Charles H. Richardson
Ms. Brenda L. Moore
Mr. Richard H. Couch

Also Present: Mr. Stephen K. Whiteway, Secretary/ Treasurer

The meeting was called to order by Mr. Bourque, Chairman of the Mathews County Industrial Development Authority Board of Directors. Mr. Whiteway declared that a quorum was present.

IN RE: APPROVAL OF AGENDA

The Agenda for the March 10, 2010 meeting was approved by consensus, with adjustments in the order of business.

IN RE: ELECTION OF OFFICERS

On motion made by Mr. Richardson, seconded by Ms. Moore, the Board of Directors voted 3-0-1 as follows: Mr. Bourque – abstain; Mr. Couch –aye; Mr. Richardson – aye; Ms. Moore – aye; to elect Hal Bourque as Chairman of the Authority for calendar year 2010.

On motion made by Mr. Richardson, seconded by Ms. Moore, the Board of Directors voted 3-0-1 as follows: Mr. Bourque – aye; Mr. Couch –aye; Mr. Richardson – aye; Ms. Moore – aye; to elect Richard Couch as Vice-chairman of the Authority for calendar year 2010.

On motion made by Mr. Richardson, seconded by Ms. Moore, the Board of Directors voted 3-0-1 as follows: Mr. Bourque – aye; Mr. Couch –aye; Mr. Richardson – aye; Ms. Moore – aye; to elect Stephen K. Whiteway as Secretary-Treasurer of the Authority for calendar year 2010.

On motion made by Mr. Richardson, seconded by Ms. Moore, the Board of Directors voted 4-0-0 as follows: Mr. Bourque – aye; Mr. Couch –aye; Mr. Richardson – aye; Ms. Moore – aye; to authorize the following officers to sign checks or to open accounts, provided that two signatures are required for any transaction: Hal Bourque, Richard H. Couch, and Stephen K. Whiteway

IN RE: MINUTES OF NOVEMBER 5, 2008 MEETING

On motion made by Mr. Richardson, seconded by Mr. Couch, the Board of Directors voted 4-0-0 as follows: Mr. Bourque – aye; Mr. Couch –aye; Mr. Richardson – aye; Ms. Moore – aye; to approve the Minutes of the November 5, 2008 meeting as submitted.

IN RE: PRESENTATION ON AQUACULTURE INDUSTRY

Mr. Lewis Lawrence and Ms. Jackie Rickards, both from the Middle Peninsula Planning District Commission, provided a presentation on the potential for aquaculture to become an economic driver in Mathews County. Following the presentation, Mr. Lawrence asked the Authority members if they would consider a resolution of support for the development of aquaculture in the county, including the possibility of an in-water aquaculture park.

On a motion made by Mr. Couch, seconded by Mr. Richardson, the Board of Directors voted 4-0-0 as follows: Mr. Bourque –aye; Mr. Couch –aye; Mr. Richardson –aye; Ms. Moore – aye; adopt a resolution of support with regard to the continued development of the aquaculture industry in Mathews County.

RESOLUTION

WHEREAS, the Industrial Development Authority of Mathews County has as its mission the betterment of the quality of life for all citizens of Mathews County through job creation and the creation of wealth; and

WHEREAS, it is recognized by the Industrial Development Authority of Mathews County and its members that a vibrant working waterfront is essential to the continued economic recovery and development of Mathews; and

WHEREAS, the seafood industry has been an important segment of the economy of Mathews since the 17th century; and

WHEREAS, the Mathews County commercial seafood industry contributes more to employment than just the number of fishermen and employees of processing and wholesaling businesses, as it supports boat design, construction, sales and repair; gear sales and repair; truck drivers; owners and sales clerks at wholesale and retail outlets; restaurant owners and workers; fishery scientists and managers; and stores that sell goods, services and fuel; and

WHEREAS, the historic character of coastal Mathews is changing and commercial fishing communities and their related businesses are facing a host of challenges to their traditional way of life including development pressures, government regulations, and pollution; and

WHEREAS, the loss of working waterfronts and infrastructure, including the economic, cultural, and historical changes, coupled with the loss of public access to public trust waters, may not be in the best long-term interest of Mathews County;

NOW THEREFORE, BE IT RESOLVED that the Industrial Development Authority of Mathews County hereby express its support for a vibrant working waterfront including the concept of a public In-Water Aquaculture and Maritime Business Park and recommends that the Mathews County Board of Supervisors concurrently support this effort to re-energize the commercial fishing industry by supporting new and innovative approaches for aquaculture within the county.

IN RE: FINANCIAL REPORT

Mr. Whiteway provided a financial report that indicated a total of $126,684.62 in the checking account. By consensus, the Board of Directors authorized the purchase of a $75,000 certificate of deposit at the best possible local rate for a term of 12-13 months maximum.

IN RE: UPDATE ON BROADBAND INITIATIVE

Mr. Couch and Mr. Whiteway briefed the members on progress to date. Mr. Couch noted that two private providers of wireless broadband service have been approached, but that neither is moving quickly to provide service to Mathews County citizens.

The Board of Directors discussed the possibility of offering performance-based incentives from the Authority's treasury as a way to encourage expansion of service into Mathews. The Board agreed that such incentives, if structured properly, may be helpful and authorized Mr. Couch and Mr. Whiteway to meet with private providers and to report to the Board with recommendations based upon those meetings.

IN RE: UPDATE ON SENIOR HOUSING INITIATIVE

Mr. Bourque reported that copies of the study have been provided to Riverside and that a meeting with senior staff at Riverside was being scheduled.

IN RE: ADJOURNMENT OF MEETING

There being no further business, the meeting was adjourned at approximately 8:15 p.m.

STEPHEN K. WHITEWAY
SECRETARY-TREASURER

HAL BOURQUE
CHAIRMAN

Industrial Development Authority
of
Mathews County

RESOLUTION

WHEREAS, the Industrial Development Authority of Mathews County has as its mission the betterment of the quality of life for all citizens of Mathews County through job creation and the creation of wealth; and

WHEREAS, it is recognized by the Industrial Development Authority of Mathews County and its members that a vibrant working waterfront is essential to the continued economic recovery and development of Mathews; and

WHEREAS, the seafood industry has been an important segment of the economy of Mathews since the 17th century; and

WHEREAS, the Mathews County commercial seafood industry contributes more to employment than just the number of fishermen and employees of processing and wholesaling businesses, as it supports boat design, construction, sales and repair; gear sales and repair; truck drivers; owners and sales clerks at wholesale and retail outlets; restaurant owners and workers; fishery scientists and managers; and stores that sell goods, services and fuel; and

WHEREAS, the historic character of coastal Mathews is changing and commercial fishing communities and their related businesses are facing a host of challenges to their traditional way of life including development pressures, government regulations, and pollution; and

WHEREAS, the loss of working waterfronts and infrastructure, including the economic, cultural, and historical changes, coupled with the loss of public access to public trust waters, may not be in the best long-term interest of Mathews County;

NOW THEREFORE, BE IT RESOLVED that the Industrial Development Authority of Mathews County hereby express its support for a vibrant working waterfront including the concept of a public In-Water Aquaculture and Maritime Business Park and recommends that the Mathews County Board of Supervisors concurrently support this effort to re-energize the commercial fishing industry by supporting new and innovative approaches for aquaculture within the county.

A Copy Teste: Adopted March 10, 2010

Secretary/Treasurer

50 Brickbat Road ◆ P.O. Box 839 ◆ Mathews, Virginia 23109
Telephone: (804) 725-7172 ◆ Telefax (804) 725-7805