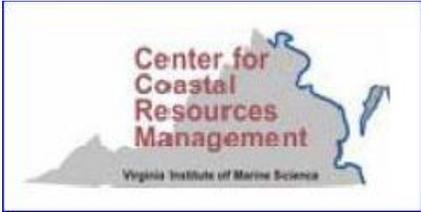


# Regulatory Fidelity to Guidance in Virginia's Tidal Wetlands Program



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## FINAL REPORT

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**Assistance #: CD-96301401-0**

December 2012

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## EXECUTIVE SUMMARY

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The Commonwealth of Virginia manages its tidal wetlands resources through implementation of the Tidal Wetlands Act (Va. Code §28.2-1300 et seq.). This Act establishes a state-local regulatory program providing the option for local governments located in the coastal zone to voluntarily assume the primary responsibility for local implementation, through a citizen wetlands board, with oversight by the Virginia Marine Resources Commission (VMRC).

The Tidal Wetlands Act charges local wetlands boards with balancing the preservation and use of tidal wetlands in order to protect the ecosystem services they provide. In addition, Virginia has an established state policy of no-net loss of wetlands resources and is a partner in the Chesapeake Bay Program, committed to “achieve a no-net loss of existing wetlands acreage and function.” This means that if wetlands are lost due to development or shoreline stabilization, for example, then the resulting loss must be offset by creating a comparable amount of wetlands elsewhere. VMRC’s Tidal Wetlands Mitigation-Compensation Policy (Reg. 4 VAC 20-390-10 et seq.) requires wetlands boards to minimize or mitigate the loss of wetlands and the adverse ecological effects of all permitted activities when implementing the Tidal Wetlands Act.

For the past 40 years, the Center for Coastal Resources Management (CCRM) at the Virginia Institute of Marine Science (VIMS) has developed extensive guidance to assist local governments in making permit decisions to meet the intent and goals of the Tidal Wetlands Program. Most recently, guidance provided supports a management preference for strategies which incorporate the use of natural resources for shoreline protection and seek to more effectively balance public and private interests.

Despite the efforts that have been invested in developing scientifically based technical guidance for permit decisions, the cumulative performance of Virginia’s Tidal Wetlands Program has fallen short of the no-net loss goal for some time. For this reason, it is hypothesized that local wetlands boards are not consistently or uniformly utilizing the guidance that might improve the cumulative environmental outcomes in Virginia’s tidal wetlands.

To document the extent of regulatory fidelity within the Tidal Wetlands Program and the role of the wetlands boards in the process of ensuring project consistency with environmental guidance, it is important to know where along the review process wetland projects meet the preferred approach. Submitted wetlands projects in this study were evaluated for consistency with the provided guidance and assigned to appropriate categories for the degree of consistency. Out of the total 1,225 wetlands projects assessed; 541 projects (or 44%) were submitted *in some form of consistency* with the guidance and 684 projects (or 56%) were submitted *not consistent* with guidance in any form.

Local wetlands boards’ permit decisions for projects in both of these categories were compared with the preferred shoreline management strategies provided to boards in the technical guidance,

over a three year period (2009-2011). The degree of consistency of boards' decisions with the guidance was tracked and the decisions analyzed for patterns of variance from guidance. Boards' decisions for projects submitted not meeting guidance in any form may better reveal the boards' conformity to the guidance since these projects had to be modified or denied by board action in order for them to meet guidance, if only in some form; as opposed to the projects submitted already meeting guidance, in which the wetlands boards' decisions were generally not the cause of the consistency outcome. A vast majority of boards' decisions (89%), for projects heard not meeting the guidance in any form, were not consistent with guidance.

Tracking the rationale for this decision-making was constrained by the lack of detailed records. The data available revealed wetlands boards' decisions did not meet guidance when the boards focused on protection of private property and the desire of the property owner; as opposed to the protection of ecosystem services or the goal of no-net loss of wetlands. The objectives of the preferred approaches to sustain wetlands and their capacity to provide ecosystem services seemed to be lacking from routine consideration in the decision-making process.

Boards tended to favor allowing the property owner to protect his/her uplands with the traditional approach requested, especially if the perceptions of the impacts were minor. Boards typically viewed these losses as acceptable. Yet, the actual impact area resulting from the approved project in many cases was not even known or assessed according to the public record. Since boards felt traditional approaches worked, in many cases the boards' discounted the technical guidance provided and appeared to base their rationales for approving these projects on their opinions, individual knowledge of shoreline structures, and past precedence of action.

Boards routinely did not follow guidance recommending actions outside of their "jurisdiction," such as planting riparian areas, installing vegetated berms or grading upland banks, or require an applicant to change a project because they were unsure of their authority to do so. Board members stated in the public record they did not have the authority to tell an applicant to do it differently or require them to do something they didn't want to do. In addition, boards appeared to lack confidence in strategies that incorporated the use of natural resources to address erosion problems. Given the uncertainty of their authority to modify a project and lack of confidence in "softer" approaches to erosion control, boards were unlikely to require changes to more preferred alternatives.

Impacts to non-vegetated wetland areas often were approved little evaluation or discussion and appeared to be treated with less importance by boards in the decision making process. This may have been due to inconsistencies in guidance from VMRC regarding wetlands under the Mitigation-Compensation Policy. Compensation for vegetated wetlands was usually expected by VMRC, which resulted in boards being, for the most part, alert for vegetative impacts. But compensation for non-vegetated wetlands was often not fostered.

Despite a commitment to mitigation by boards, analysis and discussion as to whether impacts were in-fact avoidable was frequently lacking. At times compensation was used to justify permit issuance. In several cases, boards allowed applicants to plant or transplant wetland grasses in non-vegetated wetlands to offset vegetative impacts. These actions did not satisfy the criterion of the Mitigation-Compensation Policy that one aquatic community should not be sacrificed to “create” another; and did not meet the objective of no-net loss.

Overall, the data indicated there was a strong correlation between the fidelity of the wetlands boards’ decisions to the guidance and the fidelity of the project being reviewed to the guidance. The figures showed the majority of projects in both categories heard by wetlands boards during this study were approved as submitted, regardless of whether or not they were consistent with guidance. In addition, the majority of approved as submitted decisions were passed by unanimous vote. Public minutes revealed that board members tended to follow the first vote put on the floor. Votes appeared not to reflect individual decision making, but group influence.

To better achieve the goal of no-net loss of wetlands resources and the environmental services they provide, recommendations for modifying program guidance, regulations, and/or structure to improve the efficiency and consistency of Virginia’s Tidal Wetlands Program are included in this report. A summary of the more significant recommendations is provided here.

- Collectively, citizen wetlands boards were not effective at achieving the goals of the Virginia’s Tidal Wetlands Program. Implementing a state regulatory program based on shoreline management strategies meeting technical standards and specifications designed for specific shoreline characteristics and ecosystem processes, rather than on public comment and non-technical peer review is an option.
- If citizen boards remain as the program’s implementation mechanism, it is recommended that board members be required to achieve certain educational requirements to confirm satisfactory understanding of impacts, ecosystem services, mitigation-compensation criteria, roles and responsibilities, and other areas.
- To support comprehensive decision making, integrated guidance addressing all areas across a tidal shoreline is recommended. To achieve the best management of the tidal shoreline resources, boards must consider what’s happening outside their “jurisdictional box,” as well as the effect their permit decisions will have on other parts of the shoreline system.
- Virginia Code §28.2-1302, requiring applications to provide wetlands boards’ members with sufficient and readable information to enable better evaluation of submitted projects and assessment of impacts, needs to be enforced. In addition, persons submitting applications should be certified to confirm adequate understanding of the Joint Permit Application and the Tidal Wetlands Program. Deficient documentation does not facilitate

accomplishing no-net loss because it does not allow for full accounting of impacts. As long as the program accepts inferior submittals, the public will continue to submit them.

- Accurate impacts, as well as the mitigation areas approved must be known and tracked. Development of a wetlands impact tracking database to be used by all localities implementing the Tidal Wetlands Program is recommended. All wetlands boards must be required to submit complete impact and mitigation data to VMRC to facilitate evaluation of the annual loss or net-gain of tidal wetlands in Virginia. In addition, mitigation sequencing for all wetlands, no matter how small, should be implemented. These actions will enable Virginia to meet the commitment to no-net loss.
- A change in the perception of the role of the wetlands boards will be necessary for the successful management of tidal wetlands and the benefits they provide as public trust resources. A commonly held, and inaccurate, perception of the boards' was that of their role of property erosion control boards. This perception needs to be corrected to that of "tidal wetlands" boards with the need to understand and evaluate proposed projects from an ecological approach and balance the preservation and use of tidal wetlands by implementing preferred approaches to tidal shoreline management.
- Finally, full implementation of the technical guidance to protect the public trust resources will likely require regulatory enforcement to affect the desired results.

# REGULATORY FIDELITY TO GUIDANCE IN VIRGINIA'S TIDAL WETLANDS PROGRAM

## INTRODUCTION

The Commonwealth of Virginia manages its tidal wetlands resources through implementation of the Tidal Wetlands Act (Va. Code §28.2-1300 et seq.), which establishes a state-local regulatory program giving authority over tidal wetlands to one state agency, the Virginia Marine Resources Commission (VMRC), and providing the option for Tidewater localities to voluntarily assume the primary responsibility for local implementation. Localities who adopt the model Wetlands Zoning Ordinance may regulate local tidal wetlands through a citizen wetlands board with oversight by the VMRC. This approach distributes regulatory authority across the local governments in the coastal zone (Figure 1).



**Figure 1. Virginia's Coastal Zone**

*The Tidal Wetlands Act is administered by 34 counties and cities and 2 towns located in Virginia's Coastal Zone. Currently, twelve Tidewater localities have not adopted the ordinance and the Virginia Marine Resources Commission (VMRC) acts as the permitting authority for those localities.*

Local wetlands boards consist of five or seven citizen members appointed by the local governing body such as the Board of Supervisors or City Council. Board members serve a five year term (or more if re-appointed) and for the most part are volunteers; some may be minimally compensated.

The intent of the Tidal Wetlands Act is to balance preservation and use of tidal wetlands in order to protect the ecosystem services they provide. Those services are specifically identified to include: production of wildlife, waterfowl, finfish, shellfish and flora; protection against floods, tidal storms, and erosion; absorption of silt and pollutants; and provision of recreational and aesthetic opportunities.

In addition, Virginia has an established state policy of no-net loss of wetlands resources and is also a partner in the Chesapeake Bay Program, committed to “achieve a no-net loss of existing wetlands acreage and function.” This means that if wetlands are lost due to development or shoreline stabilization, for example, then the resulting loss must be offset by creating a comparable amount of wetlands elsewhere. VMRC’s Tidal Wetlands Mitigation-Compensation Policy (Regulation 4 VAC 20-390-10 et seq.) requires wetlands boards implementing Virginia’s Tidal Wetlands Program to minimize or mitigate the loss of tidal wetlands and the adverse ecological effects of all permitted activities through the implementation of the principles of the Wetlands Guidelines promulgated by VMRC and developed by the Virginia Institute of Marine Science (VIMS/CCRM). The objective of this policy is to preserve the wetlands in their natural state as much as possible and to consider appropriate compensation only after the board has determined the loss of wetlands is unavoidable and that the project will have the highest public and private benefit.

Extensive coastal resources management guidance has been developed for local governments by the Center for Coastal Resources Management (CCRM) at the Virginia Institute of Marine Science (VIMS) over the past 40 years of the Tidal Wetlands Program’s existence to assist wetlands boards in making permit decisions that preserve ecosystem services and achieve the cumulative goal of no-net loss of tidal wetlands, while accommodating necessary and desirable development. The guidance developed over this time has continually evolved in order to reflect current scientific understanding of the resource. Most recently, protecting wetlands and the ecosystem services they provide supports a management preference for strategies which incorporate the use of natural resources for shoreline protection and seek to more effectively balance public and private interests. These strategies are consistent with the objective of sustaining wetlands and their capacity to provide ecosystem services in the face of development and climate change pressures.

Despite the efforts that have been invested in developing scientifically based guidance for permit decisions, the cumulative performance of Virginia’s Tidal Wetlands Program has fallen short of the no-net loss goal for some time. For this reason, it is hypothesized that local wetlands boards are not consistently or uniformly utilizing the technical guidance that might improve the cumulative environmental outcomes in Virginia’s tidal wetlands. The need to promote or require greater fidelity (or conformity) to the technical guidance and change traditional regulatory approaches to effectively address growing pressures on the resource is critical.

This report provides documentation for three years of permit decisions by local wetlands boards. The review and analysis of the data can be used to develop recommendations for programmatic changes to decrease the cumulative loss of tidal wetlands, reach the Commonwealth's commitment of no-net loss and net resource gain of tidal wetlands, and provide for tidal wetlands sustainability in the face of sea level rise.

## PROJECT DESCRIPTION

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To document the extent of regulatory fidelity within the tidal wetlands program, local wetlands boards' permit decisions for individual wetlands projects were compared over a three year period (2009-2011) with the preferred shoreline management strategies recommended in the technical guidance provided to local boards through the VIMS Shoreline Permit Application Reports (Appendix, Figure A). Wetlands boards are required by the Code of Virginia to consider the provisions of the wetlands guidelines promulgated by the Commission in their decision making process. The VIMS Shoreline Permit Application Reports serve as a mechanism to deliver this guidance to boards on an application-by-application basis.

The degree of consistency of wetlands boards' decisions with the guidance was tracked for each wetlands project and the boards' decisions were analyzed for patterns of variance from the guidance. Recommendations for modifying program guidance, regulations and/or structure are provided to improve the program's performance with respect to no-net loss of wetlands and preservation of ecosystem services.

This project was divided into the three main tasks:

**Task 1** - Compare individual wetlands boards' permit decisions with the technical guidance provided to local wetlands boards; and determine consistency (or fidelity) of board decisions with the guidance.

**Task 2** - Analyze the cumulative record of wetlands boards' fidelity to the guidance to identify patterns and potential factors in boards not following the provided guidance.

**Task 3** - Based on the findings of Tasks 1 and 2, develop recommendations for modifying program guidance, regulations, and/or structure to improve the efficiency and consistency of Virginia's Tidal Wetlands Program to better achieve the goal of no-net loss of its tidal wetland resources.

## METHODS

To effectively compile and analyze data, a comprehensive Permit Fidelity database containing over 120 fields and comprising four sections: General Information; Project Impacts; VIMS Information (Guidance Recommendations); and Public Hearing Information was developed in Microsoft Access for this project (Figure 2).

The screenshot shows a web-based form for the Permit Fidelity Database. At the top, there are four tabs: 'General Waterbody Info' (selected), 'Project Impacts', 'VIMS Info', and 'Public Hearing Info'. The form contains the following fields and values:

- VMRC\_#:** 10-0257
- After\_The\_Fact
- Final application incomplete
- Restoration Project?
- Applicant\_Name:** William J. Cagney Jr.
- Original\_app\_incomplete\_for:** None
- Locality:** Norfolk
- PDC:** HRPDC
- Original\_Application:** <http://ccrm.vims.edu/scans/2010/10-0254-A.pd>
- Additional\_Info/Revised\_Application:** <http://ccrm.vims.edu/scans/2010/10-0254-i.pc>
- Project\_Description:** 98 Lf of replacement bulkhead in the same alignment as the existing bulkhead
- Waterbody Name:** Cove off Lafayette River
- HUC\_10:** 0208020802
- Energy\_Regime:** Low
- Existing\_Shoreline\_Type:** Currently Defended
- Site Characteristic Comments:** The shoreline currently contains the existing bulkhead, a pier structure and a boat ramp. The upland is primarily in lawn being routinely mowed to the bulkhead edge with some trees. A garage is
- Agent:** David Kledzik
- Aerial\_Picture:** 0-0257 aerial.io
- Aerial\_Zoom:** [Empty field]
- Site\_Pictures\_link:** [Empty field]

A 'Search' button is located to the right of the 'HUC\_10' field.

**Figure 2. Permit Fidelity Database.** *The General Information Form of the Permit Fidelity Database.*

See Appendix, Figures B-D to view the Projects Impacts, VIMS Information, and Public Hearing user interface screens of the Permit Fidelity database.

The General Information section includes data on:

- the project description; applicant; contractor; agent; application completeness; locality; water body; and site conditions.

Project Impacts includes data on:

- the project type requested; the recommendations provided by the guidance; the approved project type; linear feet of proposed and approved projects; square footage of vegetated wetlands, non-vegetated wetlands, beach and subaqueous impacts of proposed and approved projects as provided; board decisions; modifications required by boards;

guidance recommendations not addressed by boards; degree of fidelity of original project; degree of fidelity of board decision; and more.

VIMS Information includes data on:

- VIMS site visit date; VIMS report (guidance) date; VIMS report summary; link to the VIMS report; decision tree outcome.

Public Hearing Information includes data on:

- the regulatory authority (wetlands board or VMRC); public hearing date; public hearing agenda; the approved board actions; board rationales for decision; comments from the public hearing minutes; link to wetlands board minutes; the board vote; how the VIMS advice was considered during the hearing; link to permit document if available.

Public hearing notices of the localities implementing Virginia's Tidal Wetlands Program were reviewed each month to track the joint permit applications (JPAs) heard by the local wetlands boards.

Local wetlands boards' public hearing minutes were collected and reviewed to document the permit decisions made by the boards for each wetlands project, as well as determine any potential rationales the board members may have provided for making such decisions.

Wetlands boards' permit decisions were then compared with the preferred management strategies recommended by the technical guidance in the VIMS Shoreline Permit Application Reports; and a determination was made if the boards addressed the regulated projects and activities consistent with the guidance.

Data collected from joint permit applications, wetlands boards' minutes, VIMS reports, public hearing notices and other derived information such as planning district commissions, hydrologic unit (HUC) and application completeness for each wetlands project were entered into the Permit Fidelity database.

The Permit Fidelity database was used to assist in analyzing the data collected.

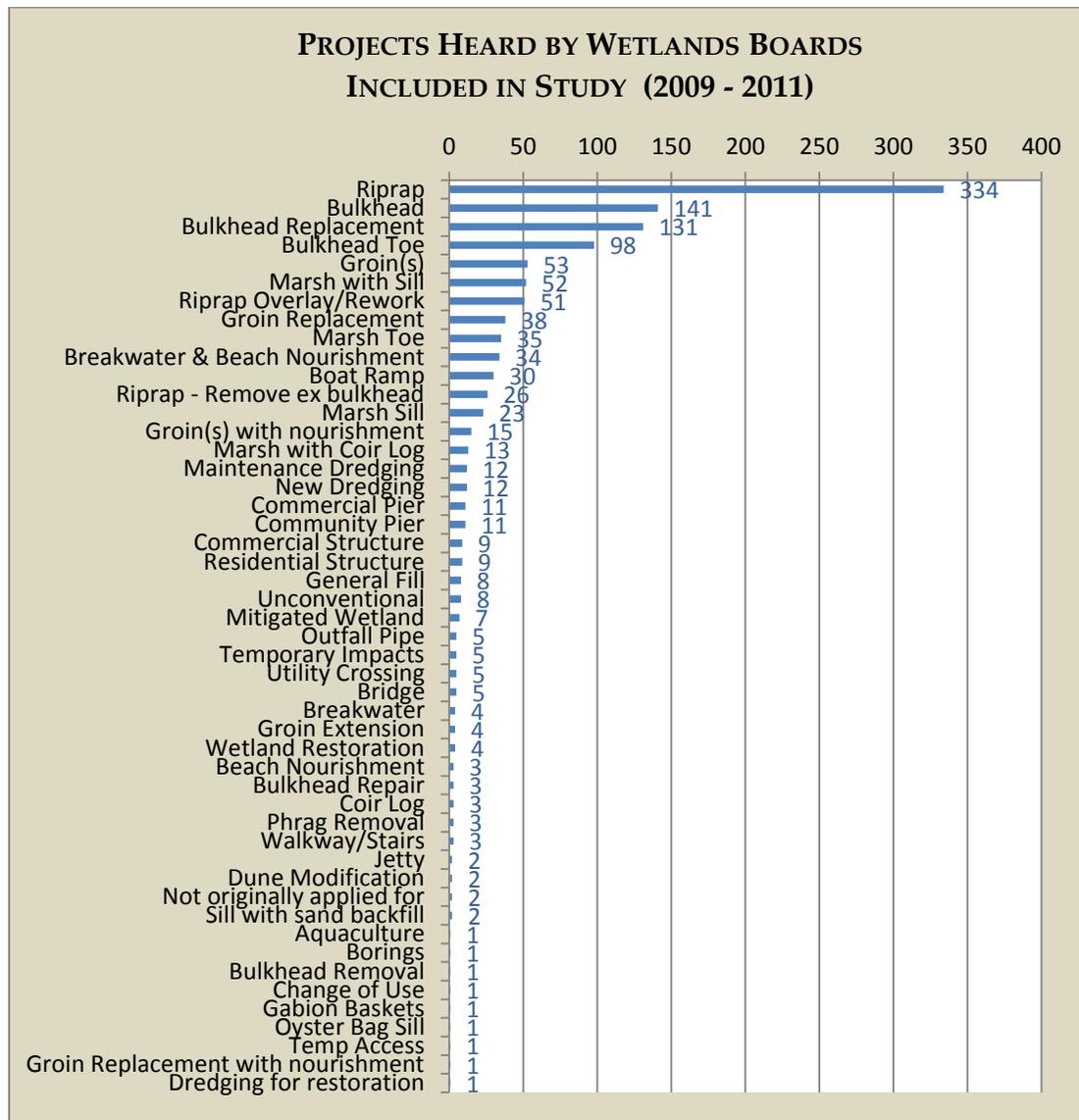
## **BRIEF CENSUS OF PERMIT FIDELITY PROJECT DATA**

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This study involved the comprehensive review of 1,239 Joint Permit Applications (JPAs) (See Appendix, Figure E) proposing 1,651 regulated projects (e.g. riprap, bulkhead, groins, etc.) submitted to 29 local wetlands boards within the Commonwealth of Virginia from 2009 through 2011.

The 1,651 projects heard by wetlands boards were filtered to include only those projects that were located in the local wetlands board jurisdiction. Projects heard by a wetlands board, but located

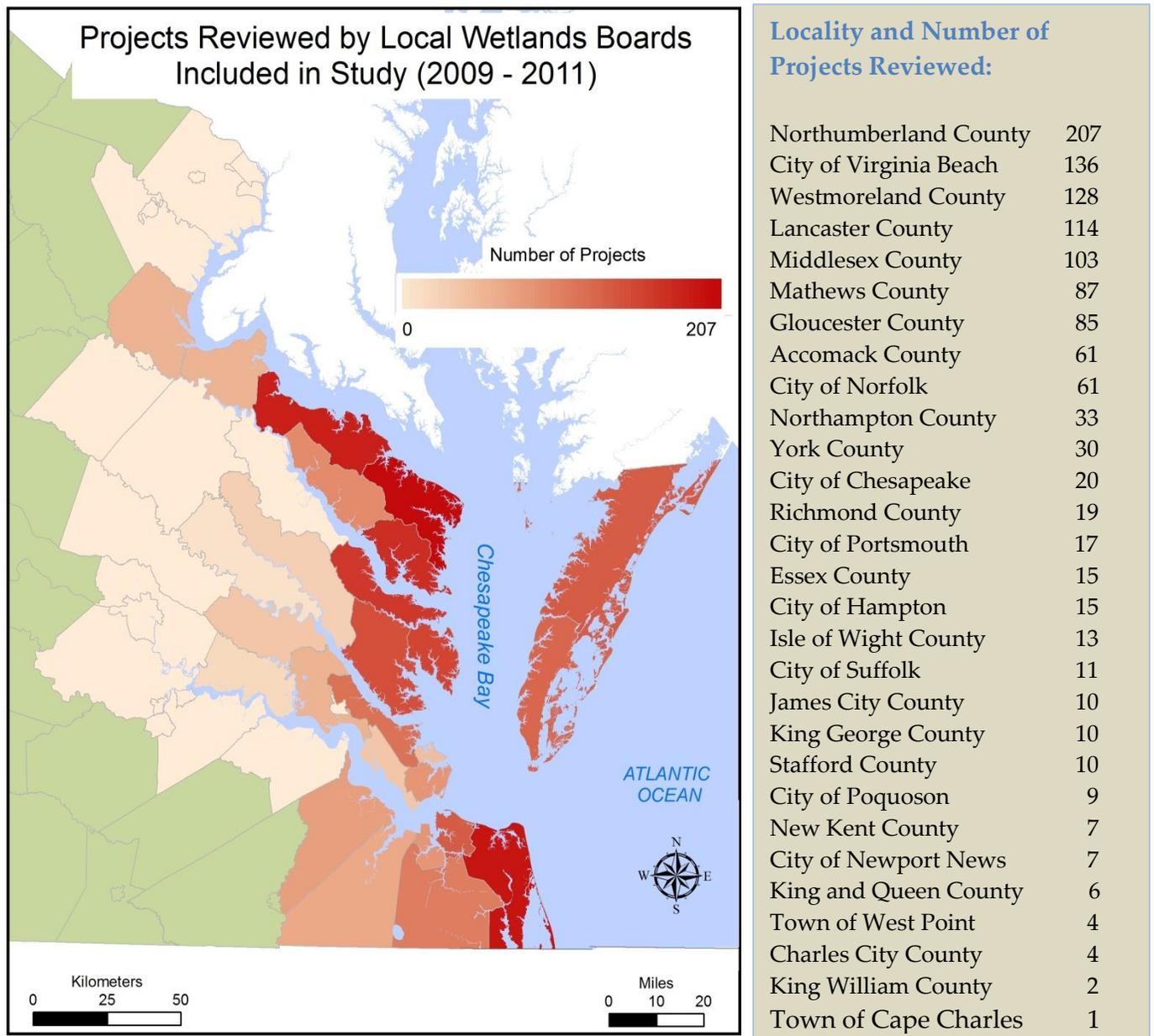
entirely within VMRC jurisdiction were not included in the study. Projects in which a VIMS Shoreline Situation Report (technical guidance) was not generated were not included since guidance was not available to compare with the board decision. Projects that were tabled, withdrawn by the applicant, or where the board took no action were not included. In these cases, there was no board decision to compare with provided guidance. This resulted in a total of 1,225 projects reviewed: 458 projects in 2009; 550 projects in 2010; and 217 projects in 2011. The overall most frequently requested wetlands project in this study, and for each year of the study, was riprap (Figure 3).



**Figure 3. Projects Heard by Wetlands Boards Included in Study**

The localities implementing Virginia’s Tidal Wetlands Program with higher exposure along the Chesapeake Bay and its tributaries received the most requests for projects during the study period, with the exception of the localities on “The Peninsula” which includes the City of Poquoson, the City of Newport News, York County and James City County. Northumberland County received the most wetlands project requests overall, and for each year of the study.

Figure 4 illustrates the distribution of the number of project requests across the coastal zone localities included in this study. Locality name and number of projects reviewed are listed in the side column.



**Figure 3. Number of Project Requests Distributed Across the Coastal Zone.**

*Localities with higher exposure along the Bay and its tributaries generally received the most wetland project requests.*

The 29 localities implementing the tidal wetlands program in this study were located within six of Virginia's eight coastal Planning District Commissions (see Appendix, Figure F). The Northern Neck Planning District Commission (NNPDC), which includes Northumberland County, received the most project requests during the study, and for each year of the study (Figure 5). A total length of 190,298 linear feet (36.0 miles) of shoreline was approved for erosion control structures during the study period (Figure 6).

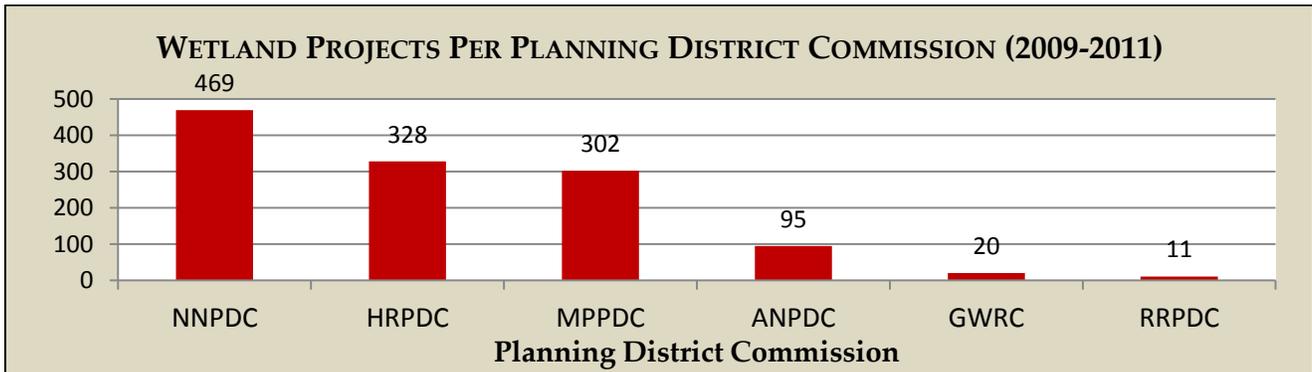


Figure 4. Project Requests by Planning District Commission

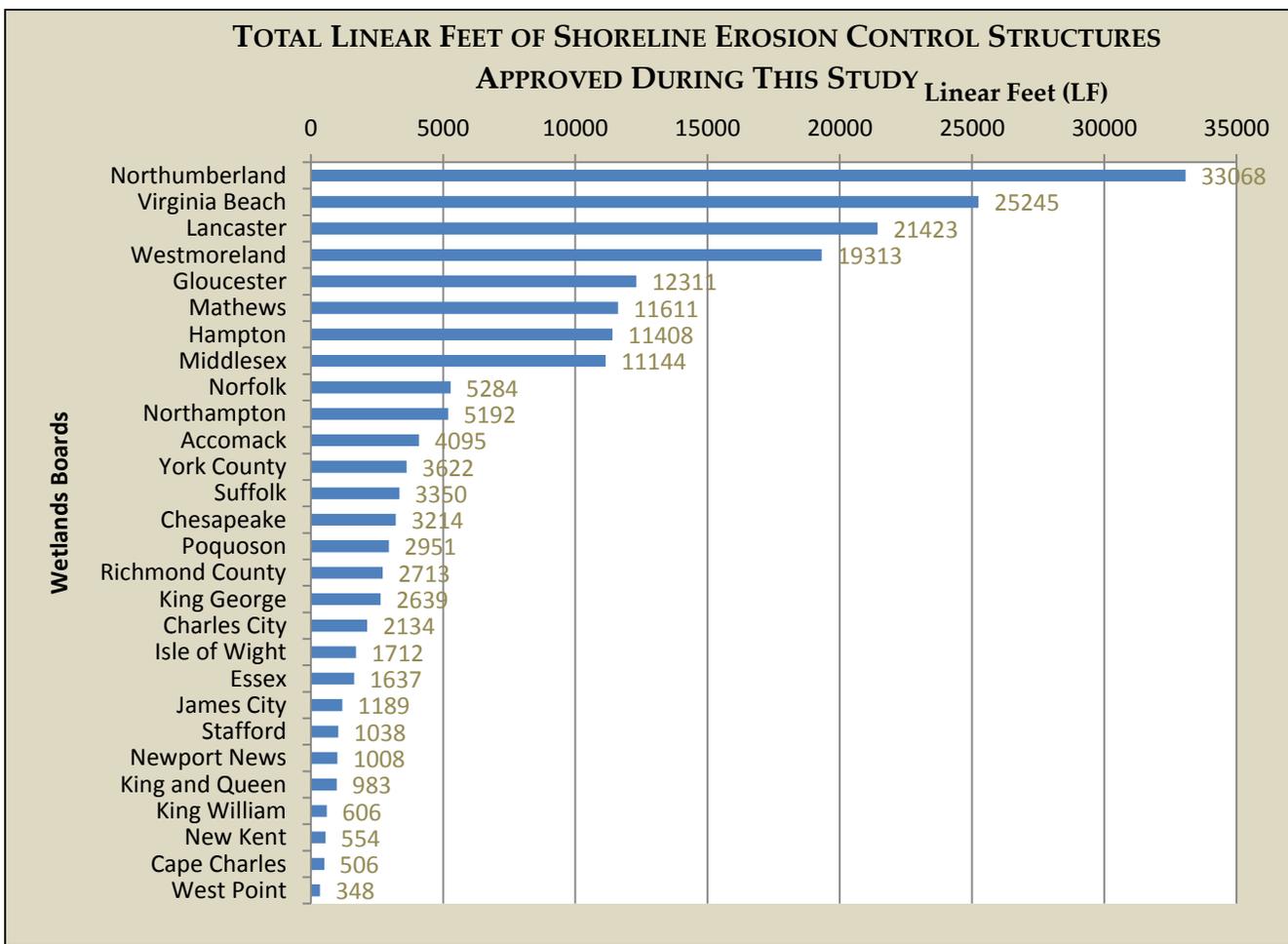


Figure 5. Linear Feet of Shoreline Erosion Control Structures Approved Per Locality

## TASK 1: COMPARE INDIVIDUAL WETLANDS BOARDS' PERMIT DECISIONS WITH THE TECHNICAL GUIDANCE PROVIDED TO LOCAL WETLANDS BOARDS; AND DETERMINE CONSISTENCY (OR FIDELITY) OF BOARD DECISIONS WITH THE GUIDANCE

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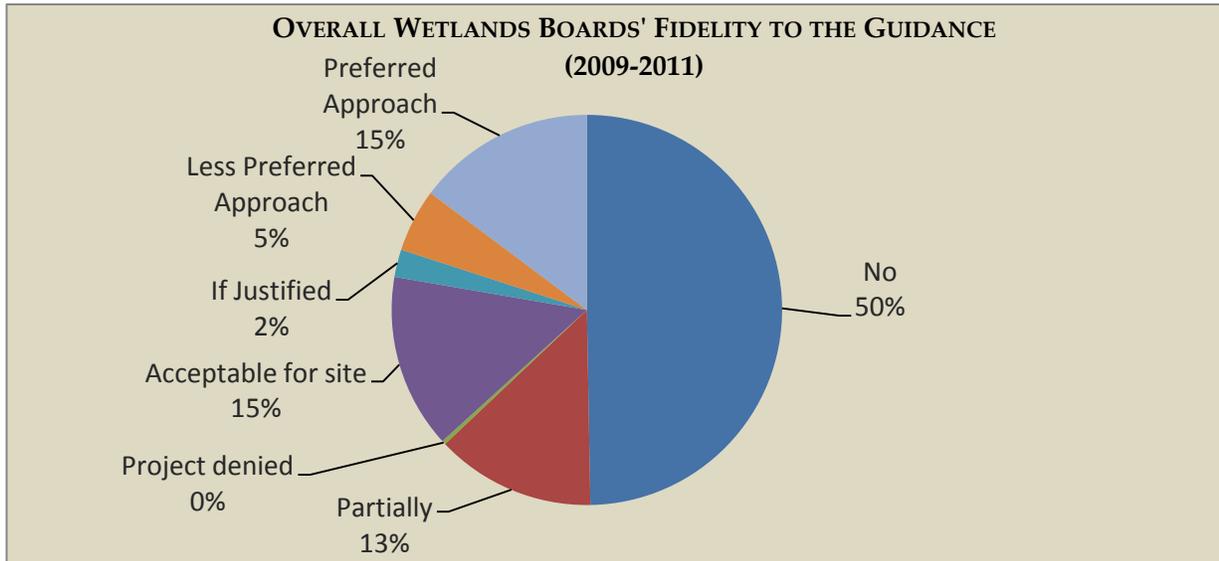
To facilitate assessment of the permitting decisions by local wetlands boards relating to consistency with the technical guidance, the board decision for each wetlands project was assigned to one of the following categories based on the decision's degree of consistency with the guidance:

1. **Preferred Approach** –
  - The wetlands board's decision was consistent with the *preferred approach* for shoreline management provided in the technical guidance for the shoreline conditions.
  - The wetlands board denied a project not recommended by the guidance. No project, including the preferred approach, was approved. Not granting approval for an undesirable shoreline strategy is a preferred approach.
  - The wetlands board denied a project due to lack of sufficient information. Having adequate information to make a decision is a preferred approach.
  - The wetlands board denied a project due to the lack of erosion or necessity in their assessment, even when the guidance recommended a shoreline structure. Leaving the shoreline in a natural state is always a preferred approach.
2. **Less Preferred Approach** - The wetlands board's decision was consistent with a *less preferred approach* provided in the technical guidance, but not consistent with the preferred approach.
3. **Acceptable for the site** - The preferred approach was not feasible due to lack of cooperation from adjacent property owners necessary for a reach-based approach, inability to relocate existing structures, and other site specific circumstances, and the approved approach was considered acceptable for the site.
4. **If Justified** – The wetlands board's decision was considered consistent if the project could be determined to be necessary and justified.
5. **Partially** - The wetlands board's decision was consistent with portions of the recommendations, but not fully consistent with guidance provided.
6. **No** – The wetland board's decision was not consistent with the guidance provided in any form.
7. **Project denied** – The Board denied the project unrelated to the guidance provided (e.g. due to adjacent property owner complaints or the applicant not showing up at the board hearing).

Categories (1)-(5) are combined in areas of this report to represent the consistency of board decisions and/or submitted projects as being “consistent in some form” with the guidance, as compared to not being consistent at all with the guidance.

## FIDELITY TO THE GUIDANCE OVERALL

The assessment of consistency of wetlands boards' decisions with the technical guidance showed about 50% of board decisions were *consistent in some form* with guidance; 50% of decisions were *not* consistent with guidance; and less than 1% of board decisions resulted in project denial unrelated to the guidance. Of the projects that were consistent in some form, only 15% were consistent with the Preferred Approach (Figure 7).



**Figure 6. Overall Wetlands Boards' Fidelity to the Guidance**

For each year of the study, the wetlands boards' overall fidelity to the guidance was fairly consistent as shown in Table 1:

Wetlands Boards' Degree of Consistency	2009	2010	2011
Preferred Approach	13%	14%	19%
Less Preferred Approach	6%	4%	8%
Acceptable for site	11%	18%	11%
If Justified	3%	2%	3%
Partially	14%	14%	8%
<b>"Consistent in some form" Total</b>	<b>47%</b>	<b>52%</b>	<b>49%</b>
<b>Not Consistent</b>	<b>52%</b>	<b>48%</b>	<b>51%</b>
Project Denied (unrelated to guidance – therefore degree of consistency not assigned)	1%	0%	0%
Total Projects	456	550	217

**Table 1. Wetlands Boards' Degree of Consistency (2009-2011)**

However, this assessment did not truly reflect the regulatory fidelity of the wetlands boards to the guidance because there was a portion of projects submitted that were already consistent or partially consistent with guidance before they were heard by the boards. For these projects, it was difficult to determine if the boards' decisions were following the recommendations provided in the guidance or if the boards' merely approved the projects and by "default" met some form of consistency.

In order to understand the role of the wetlands boards in the process of ensuring project consistency with environmental guidance, it is important to know where along the review process the project met the preferred approach.

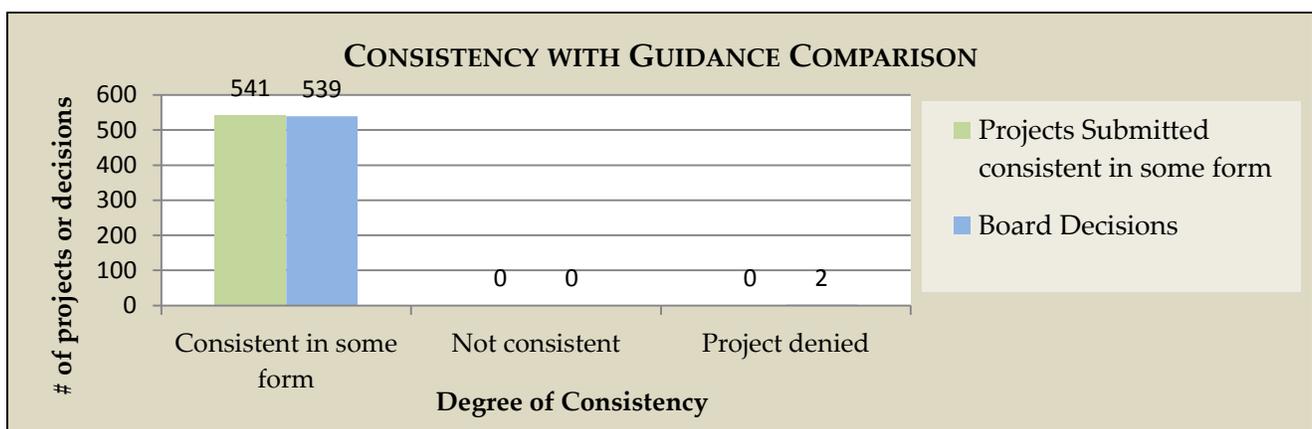
Therefore, the proposed projects were also evaluated for consistency with the provided guidance and assigned to the appropriate categories for degree of consistency as those applied to the wetlands board decisions. Of the 1,225 total projects assessed;

- 541 projects (or 44%) were submitted in *some form of consistency* with the guidance and;
- 684 projects (or 56%) were submitted not consistent with guidance in any form.

The boards' decisions for projects in the two separate categories were then compared with the guidance.

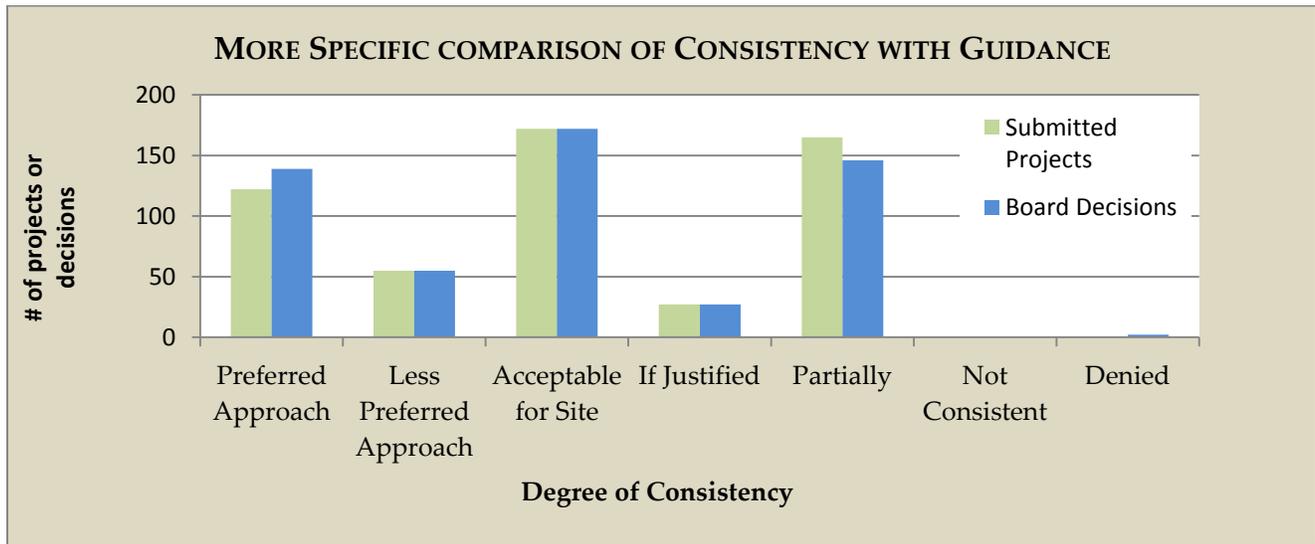
### Category 1: Review of Projects Already Meeting *Some Form of Consistency* with the Guidance

Compared to the initial assessment of only 50% of wetlands boards' decisions meeting *some form of consistency* with the guidance, the fidelity of the wetlands boards' decisions to the guidance much improved when reviewing only those projects already meeting *some form of consistency* (Figure 8).



**Figure 7. Consistency with Guidance Comparison – Projects Submitted Consistent in Some Form.** 99.6% of board decisions for these projects were consistent in some form with the guidance (0.4% of projects were denied unrelated to the guidance).

If the specific degree of consistency with the guidance of submitted projects is compared with the degree of consistency with the guidance of the boards' decisions for these projects, the results are very similar (Figure 9).

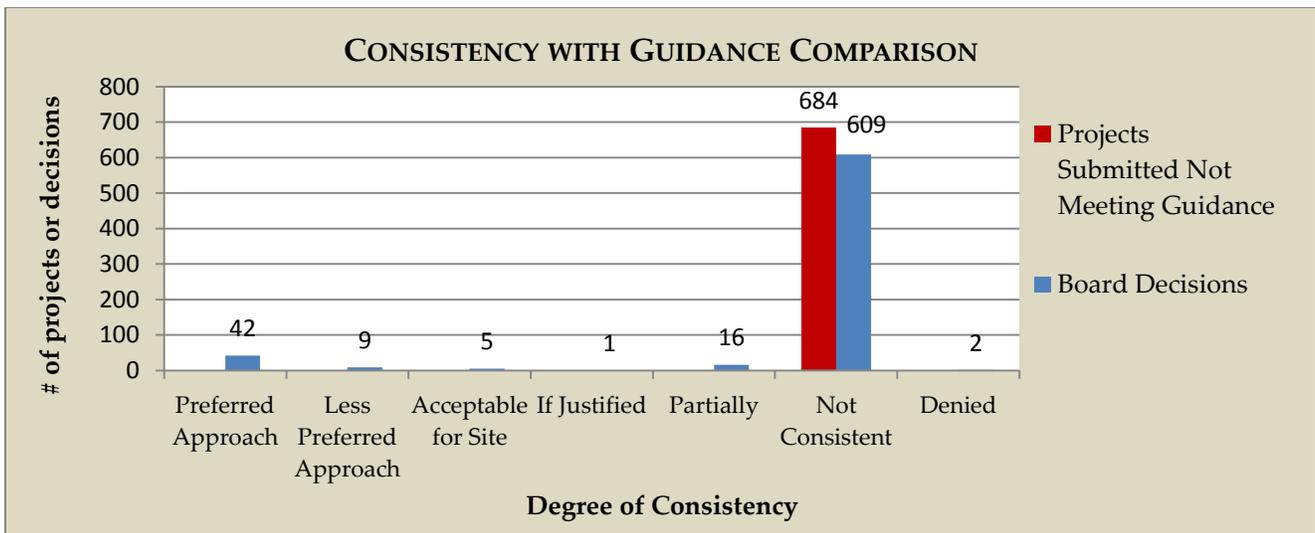


**Figure 8. More Specific Comparison of Consistency with Guidance.** 95% of boards' decisions matched the degree of consistency of the project being reviewed.

### Category 2: Review of Projects Submitted NOT Meeting Guidance

About 56% of projects submitted during this study did not meet the guidance in any form. Boards' decisions for these projects may more accurately reveal the boards' commitment to the guidance since board action to modify or deny these projects was necessary to make them meet guidance; as opposed to the projects submitted already meeting the guidance, in which the wetlands boards' decisions did not generally influence the project's consistency with the guidance in these cases.

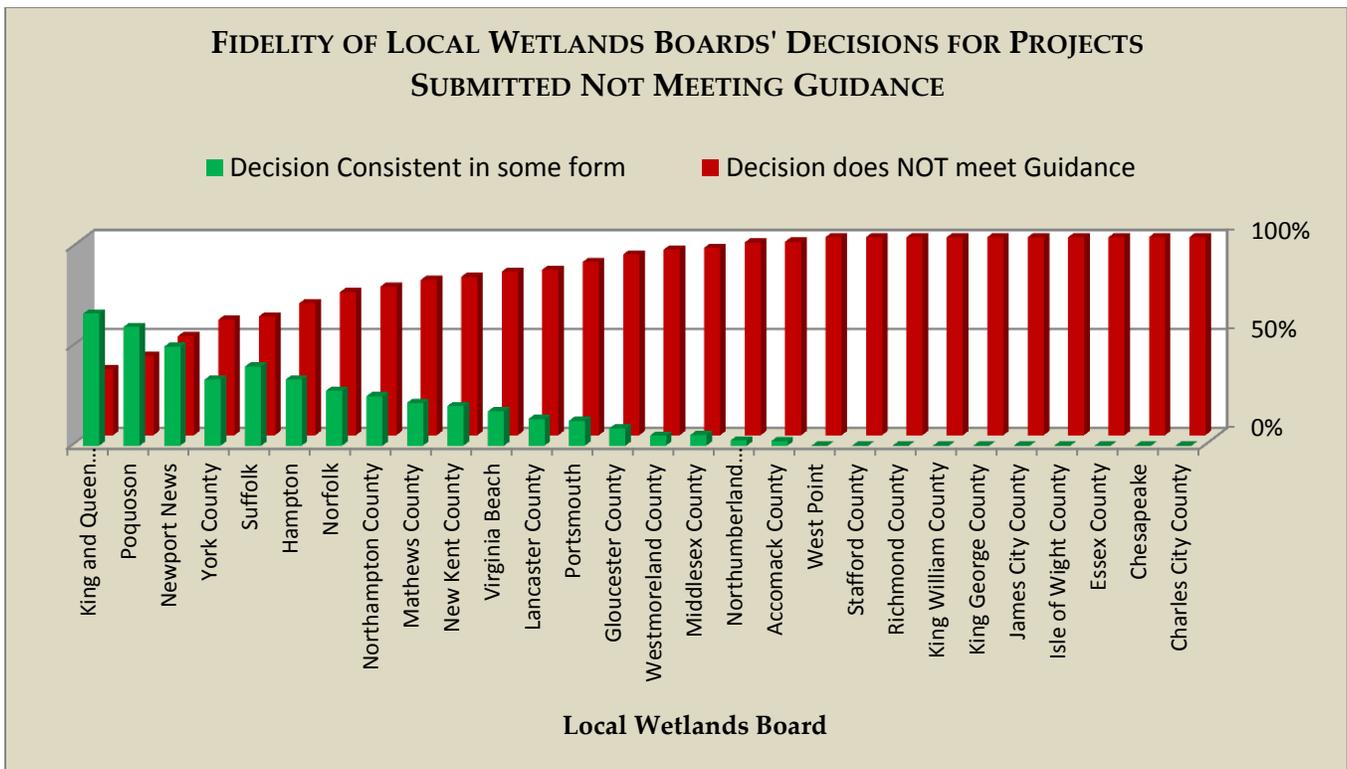
Unfortunately, the fidelity of the wetlands boards to the guidance greatly diminished when reviewing projects submitted not meeting guidance in any form. Of these projects, 89% of wetlands boards' decisions did not take action to improve the outcome, sustaining the projects' lack of concurrence with guidance.



**Figure 9. Consistency with Guidance Comparison – Projects Submitted Not Meeting Guidance.** 89% of boards’ decisions for submitted projects not meeting guidance in any form did not improve the project outcome. Only 10.6% of these projects were modified to better meet guidance.

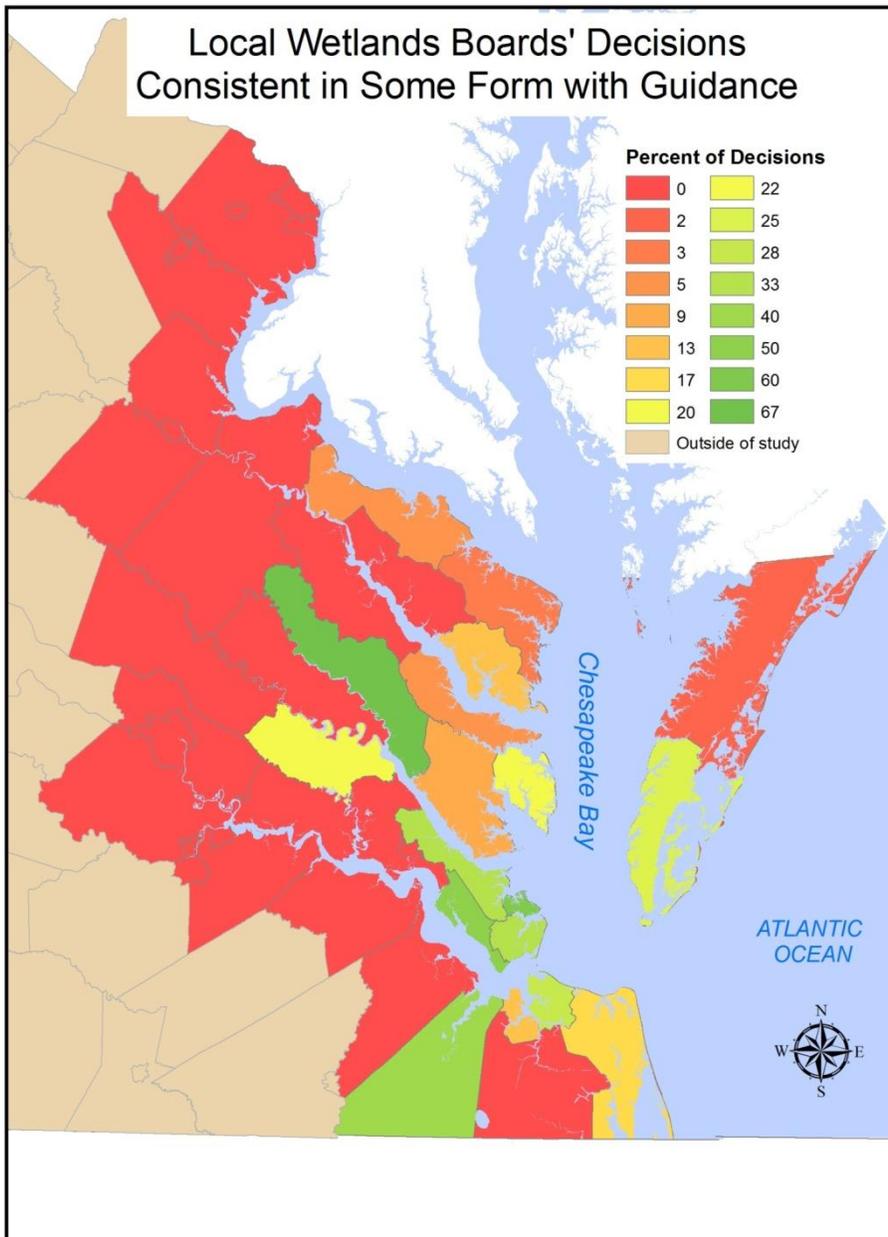
#### INDIVIDUAL LOCAL WETLANDS BOARDS’ FIDELITY TO THE GUIDANCE

To more specifically see where regulatory fidelity was occurring (or not) among the local wetlands boards implementing the program, Figure 11 illustrates the consistency with the guidance of the individual local wetlands boards’ decisions for projects submitted not meeting guidance in any form. The comparison is shown in percentages of total decisions made by each board.



**Figure 10. Fidelity of Local Wetlands Boards' Decisions for Projects Submitted Not Meeting Guidance.** The red bars represent the percent of total decisions made not meeting guidance. The green bars represent the percent of decisions made meeting the guidance in some form, not necessarily meeting the preferred approach. No decisions were made meeting the guidance in any form by 10 out of the 29 citizen wetlands boards' during this study.

It is important to note when reviewing Figure 11 that the total number of projects heard by each board varied. For example, Northumberland County reviewed the most, at 148 projects. However, King and Queen County, which according to Figure 11 made the largest percentage of decisions meeting the guidance *in some form*, only reviewed 3. From these data, it can be concluded that Northumberland County cumulatively did not follow the guidance. King and Queen County appeared to follow the guidance more so than the other wetlands boards however this observation may be skewed due to the small number of projects reviewed. Overall, the majority of the wetlands boards lacked fidelity to the guidance when reviewing projects submitted not meeting guidance in any form, as shown in the localities represented in red in Figure 12.



**Percent of Consistent Decisions by Locality for Projects Submitted Not Meeting Guidance in Any Form:**

- Charles City County – 0%
- Chesapeake – 0%
- Essex County – 0%
- Isle of Wight County – 0%
- James City County – 0%
- King George County – 0%
- King William County – 0%
- Richmond County – 0%
- Stafford County – 0%
- West Point – 0%
- Accomack County – 2%
- Northumberland County – 3%
- Middlesex County – 5%
- Westmoreland County – 5%
- Gloucester County – 9%
- Portsmouth – 13%
- Lancaster County – 13%
- Virginia Beach - 17%
- New Kent County – 20%
- Mathews County – 22%
- Northampton County – 25%
- Norfolk – 28%
- Hampton – 33%
- Suffolk – 40%
- York County – 33%
- Newport News – 50%
- Poquoson – 60%
- King and Queen County -67%

**Figure 11. Percent of Wetlands Boards' Decisions Consistent in Some Form with Guidance for Projects Submitted Not Meeting Guidance.** Red represents only 0-2% of decisions consistent in some form with guidance; and dark green represents 67%, the greatest percent of decisions made consistent in some form with the guidance.

## FIDELITY TO THE GUIDANCE – SUMMARY

This regulatory fidelity summary focuses on the comprehensive, cumulative fidelity of all wetlands boards implementing Virginia's Tidal Wetlands Program during the study. The fidelity summary of individual boards may vary.

When initially comparing the 1,225 individual wetlands boards' permitting decisions with the preferred shoreline management strategies recommended in the technical guidance, for the purpose of determining the fidelity of the wetlands boards' to the guidance, 50% of wetlands boards' decisions were totally inconsistent with the guidance and almost 50% met the guidance *in some form*. However, this conclusion does not reflect a true assessment of the regulatory fidelity of the wetlands boards because there is a portion of projects submitted that were already consistent or partially consistent with guidance before they were heard by the boards.

To better gauge the true fidelity of the boards to the guidance, the submitted projects were divided into two categories; those projects meeting *some form of consistency* with the guidance and those projects not meeting guidance in any form by the time they reached the public hearing stage.

The fidelity of wetlands boards' decisions for projects submitted already meeting *some form of consistency* was first examined. The boards' fidelity to the guidance in this category significantly improved. In fact, 99.6% of board decisions for these projects were consistent in some form with the guidance (0.4 % of projects was denied unrelated to the guidance). For these projects, guidance was already met in some form prior to being heard by the boards. Looking closer at the data, 95% of the wetlands boards' decisions for these projects matched the degree of consistency with the guidance of the project being reviewed. Did the boards approve these projects as submitted? This will be investigated in Task 2 when the cumulative record of wetlands boards' fidelity is analyzed.

In contrast, when reviewing projects originally submitted not meeting guidance in any form, the fidelity of the wetlands boards' decisions to the guidance greatly diminished. Boards' decisions for these projects may more accurately reveal the boards' commitment to the guidance since board action is ultimately responsible for these projects meeting guidance or not; as opposed to the projects submitted already meeting the guidance, in which the wetlands boards' decisions really did not enter into the consistency determination. A vast majority (89%) of wetlands boards' decisions for these projects were totally inconsistent with the guidance. Only 10.6% of decisions met the guidance *in some form* and of these only 6% met the preferred shoreline management approach. What caused the boards' lack of fidelity in these cases? This also will be investigated in Task 2.

In summary, there appeared to be a strong correlation between the fidelity of the wetlands boards' decisions to the guidance and the fidelity of the project being reviewed with the guidance.

## TASK 2: ANALYZE THE CUMULATIVE RECORD OF WETLANDS BOARDS' FIDELITY TO THE GUIDANCE TO IDENTIFY PATTERNS AND POTENTIAL FACTORS IN BOARDS NOT FOLLOWING THE PROVIDED GUIDANCE

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The analysis to identify patterns and factors influencing boards' variance from guidance was derived from the comprehensive fidelity of all wetlands boards implementing Virginia's Tidal Wetlands Program during this study. Analyzing the fidelity of each individual local board would provide insight about program inefficiencies for particular regions in Virginia and determine more specifically which wetlands boards were consistently or uniformly utilizing the technical guidance. However for purposes of this report, wetlands boards were analyzed as a complete regulatory group in order to assess the capacity of Virginia to preserve ecosystem services and meet the goal of no-net loss.

The following analysis explores a variety of factors that contributed to the boards' variance from guidance.

### WETLANDS BOARDS' ACTIONS

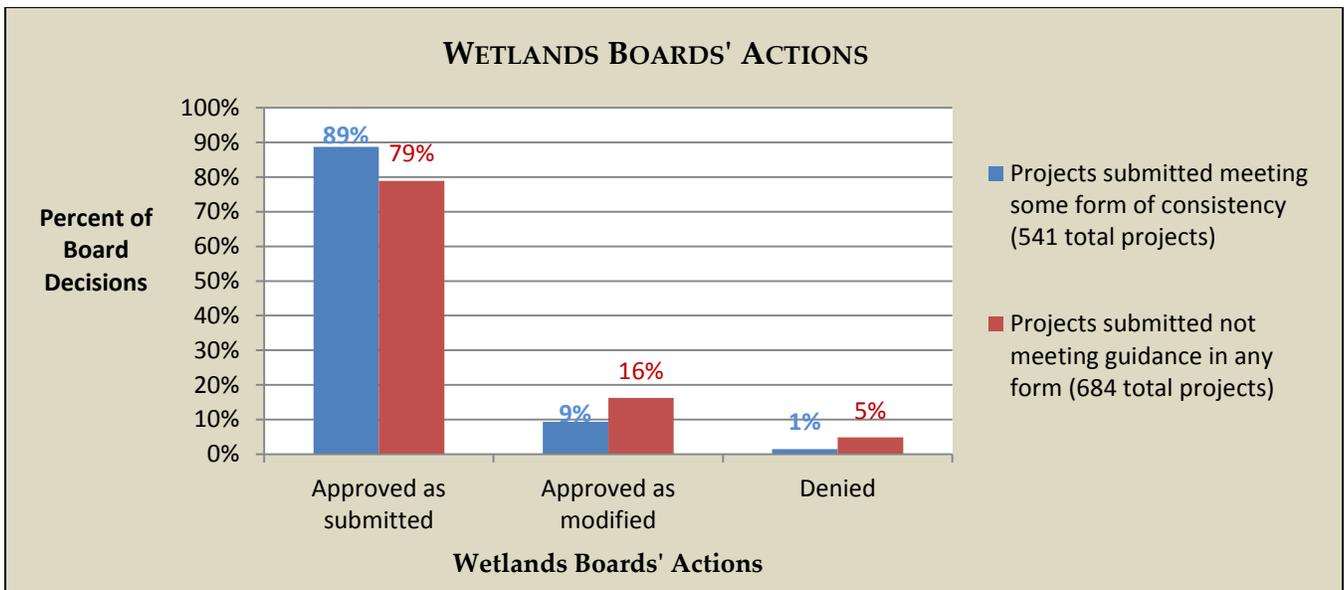
As seen in Task 1, there appeared to be a strong correlation between the fidelity of the wetlands boards' decisions to the guidance and the fidelity of the project being reviewed. Does this suggest that wetlands boards tended to approve projects as submitted, representing a pattern of variance from guidance?

Wetlands boards' permit actions for projects in this study were reviewed by those projects submitted meeting *some form* of consistency and those projects submitted not meeting guidance in any form. The data showed that the majority of projects in both categories, 89% and 79% respectively, were approved as submitted<sup>1</sup> regardless of whether or not they were consistent with guidance (Figure 13).

Boards seldom modified projects at public hearings. Only 9% of projects submitted meeting *some form of consistency* were modified and not all of these modifications were made to comply with guidance. In fact, only 4.6% of modifications actually resulted in projects better meeting guidance. 16% of projects submitted not meeting the guidance in any form were modified, but only 10.6% of these modifications gave rise to projects meeting guidance in some form.

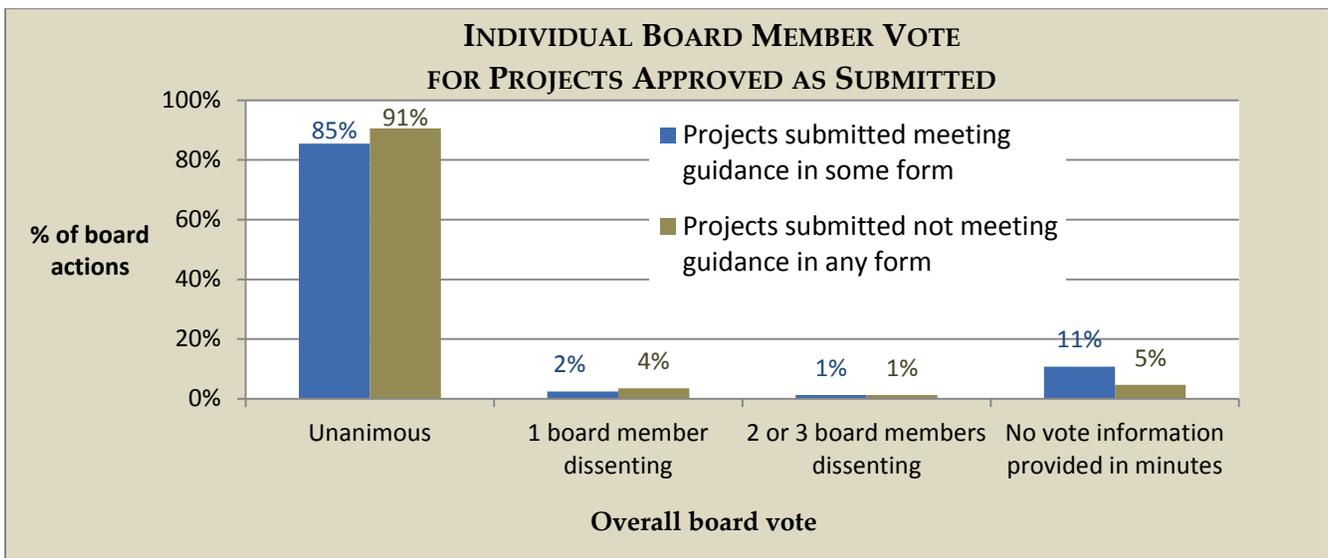
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<sup>1</sup> "Approved as submitted" includes projects "Approved as submitted" and "Approved with conditions." Projects "Approved with conditions" only received conditions, e.g. dispose of debris legally or provide benchmarks, that did not alter the originally submitted project and therefore the project was essentially approved as submitted. Projects where conditions revised the design of the project were assigned to "Approved with modifications."



**Figure 12. Wetlands Boards' Actions.** *The majority of projects were approved as submitted regardless of whether or not they were consistent with guidance. Very few projects were modified by boards and not all modifications made complied with guidance.*

Looking closer at the individual wetlands board members' actions in this study, the majority of approved as submitted decisions were passed by unanimous vote, 85% and 91% respectively. Only 2 to 4% of board actions respectively had one member dissenting from the overall board vote and only 1% of board actions for both categories had 2 or 3 members dissenting. Considering 5 to 11% of individual board member votes were not detailed in the minutes, the percent of unanimous voting and/or dissenting votes could potentially be higher (Figure 14).



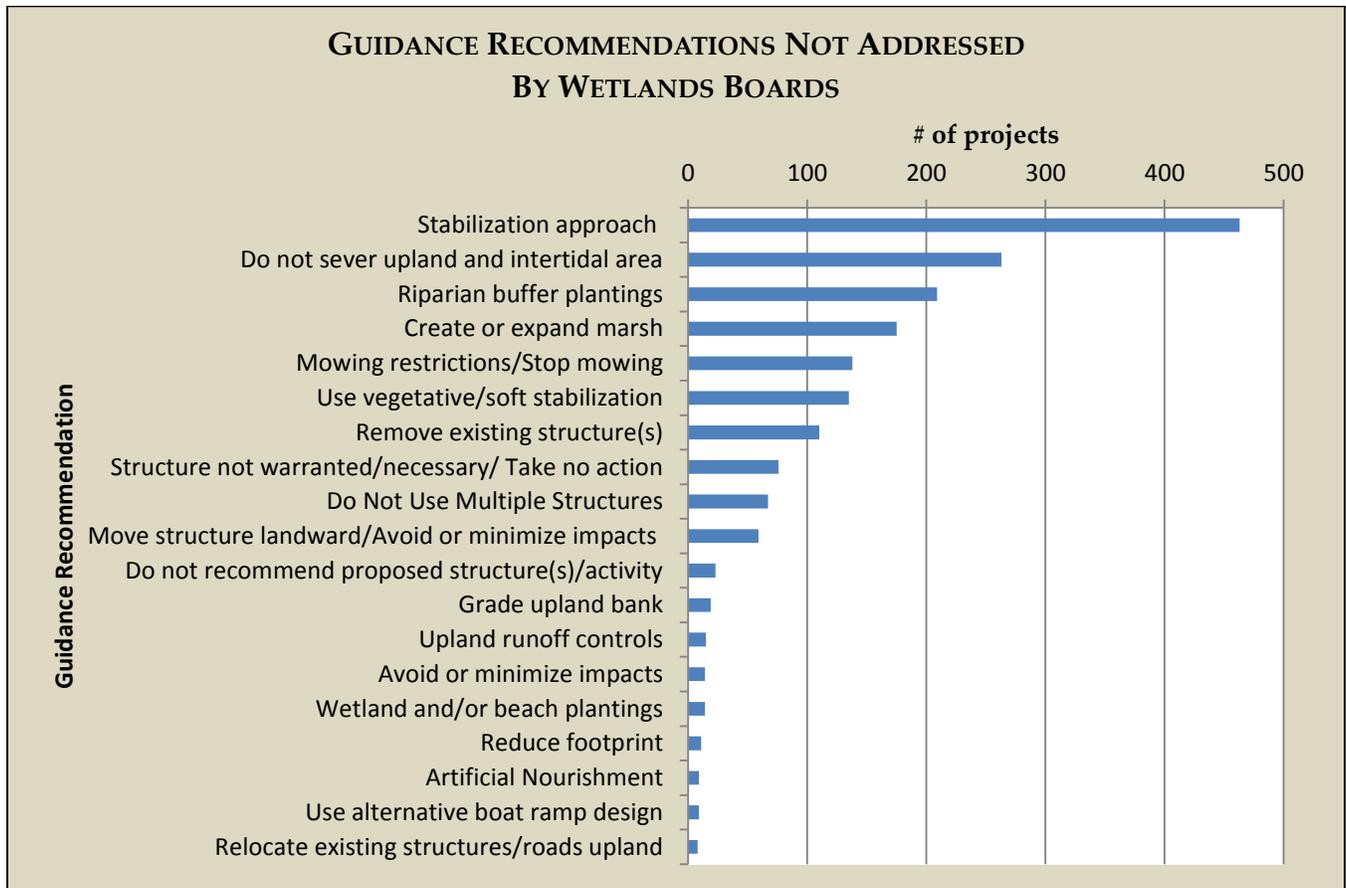
**Figure 13. Boards' Voting Actions.** *The majority of board actions were carried by unanimous vote.*

To a large extent, boards' actions were unanimous with few dissensions by board members, perhaps indicating that the citizen board structure may be an ineffective mechanism for discussion

of alternatives in decision making. Public minutes revealed that board members tended to follow the vote first put on the floor. Votes appeared not to reflect individual decision making, but group influence.

### IMPLEMENTATION OF GUIDANCE RECOMMENDATIONS

Wetlands boards’ decisions implemented guidance recommendations for only 15% of projects that did not meet the particular guidance when submitted. The guidance recommendations more frequently discounted by boards are shown in Figure 15.



**Figure 14. Guidance Recommendations Not Addressed.** *Wetlands boards’ overwhelmingly did not follow the guidance for the preferred shoreline stabilization approach. The proposed project was rarely changed to meet the preferred shoreline management strategy.*

Guidance recommendations frequently not addressed by boards are described below.

Boards rarely changed a proposed project at public hearing and overwhelmingly did not follow the guidance for the **preferred shoreline stabilization approach**. Board decisions only changed the proposed structure type to meet the guidance in some form for 2.6% of projects submitted not

meeting the guidance in any form. Only 1.3% of these decisions changed the structure type to meet the Preferred Approach.

There was minimal discussion by most boards in the minutes regarding the recommendation to **not sever the connection between the upland and the intertidal area**. Perhaps wetlands boards' members did not understand what this meant or comprehend the impacts of this lost connection. This is an important concept to recognize in order to promote the sustainability of ecosystem services across the shoreline ecosystem profile.

Many boards' decisions disregarded the repeated guidance to **plant riparian vegetation** in the buffer. Some felt this was outside "their jurisdiction" and therefore did not require it; others did not discuss the recommendation.

Guidance to **create or expand marsh** was frequently not followed, usually due to boards' decisions permitting requested traditional approaches of riprap or bulkhead over recommended marsh sills or new marsh.

Guidance to **restrict or stop mowing** was rarely discussed by boards and never implemented as a permit condition during this study.

**Vegetative or soft stabilization only approaches** for shoreline management were definitely not popular with boards and often not addressed. Wetlands boards appeared to be uncomfortable with requiring only vegetative or soft stabilization strategies when an applicant was requesting traditional hard stabilization of their shoreline. The guidance recommended vegetative stabilization for 109 projects that were originally submitted not meeting guidance. Only 8 board decisions applied the guidance of vegetative stabilization. In these cases, the boards did not perceive a need for the projects or the associated impacts and wanted to see a softer approach along the shoreline.

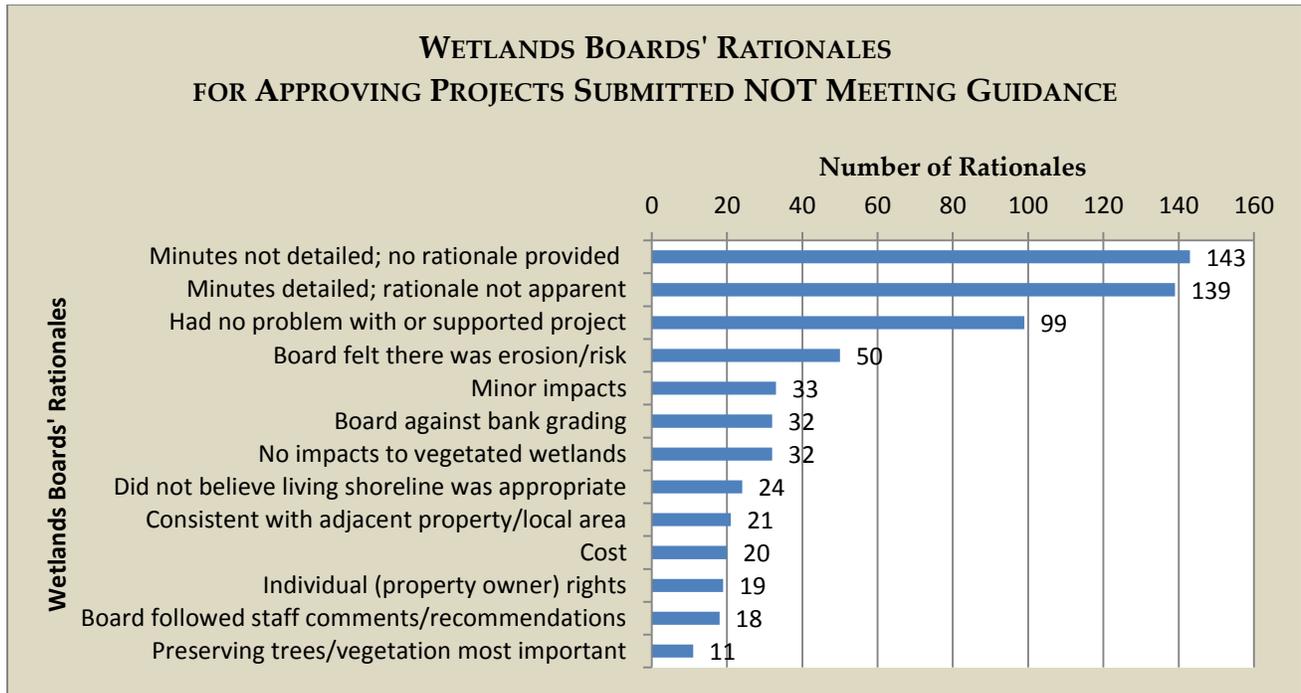
**Removing existing structures** was a recommendation not popular with boards and tended not to be followed. Whether due to cost to the applicant or impact to the waterway, existing structures were usually not required to be removed unless agreed to by the applicant.

The majority of boards did not follow the recommendation to disallow **multiple structures**. It is not clear if they did not understand the cumulative impacts of multiple structures or if they considered extra protection necessary.

## **APPROVAL OF PROJECTS THAT DID NOT MEET GUIDANCE**

Wetlands boards approved 79% of projects that did not meet guidance in any form as submitted. Why did wetlands boards' not follow guidance recommendations? Rationales for these actions were obtained, as interpreted by the reviewer in this study, using the local wetlands boards' public

hearing minutes (Figure 16). A small number were obtained from wetlands board staff comments through telephone interviews after the board meetings.



**Figure 15. Boards’ Rationales for Approving Projects Not Meeting Guidance.** *Tracking the rationale for decision-making was constrained by the lack of detailed records. Where a rationale was provided, the reasoning varied; a board decision may have more than one rationale.*

There was no rationale available for a majority of these decisions. Either the minutes were not detailed enough (26%) or there was no apparent rationale stated within the detailed minutes (25%). For projects with no rationales in this study, there is no way of knowing through the available public record what the boards’ reasons were for not following the recommended guidance. Therefore this analysis is limited to the available rationales.

The following is a look at the most frequent available rationales with some example cases.

The most frequent wetlands board rationale for approving a project even though it did not meet guidance was simple; **the board had no problems with the proposed project (or they thought it was a good project)**. Many of these board decisions appeared to be largely based on personal opinions or knowledge of shoreline structures and past precedence of action, not on scientifically based factors. Projects were often considered “routine.” Verbal discussion of the pros and cons of the proposed project tended to be minimal. The preferred shoreline management strategy was rarely mentioned. Discussion of the proposed project’s impacts to tidal wetlands resources was minimal to absent and there was little discussion of impacts to ecosystem services.

Examples:

VMRC #10-0965, the applicant requested approval to install a bulkhead toe channelward of a failing bulkhead. The preferred approach recommended removal of the failing bulkhead, grading of the bank and planting wetland and riparian vegetation. A board member stated, *"It appears routine and a good job."* There was no other discussion in the record. The project was approved as submitted, unanimously.

VMRC #11-0295, the applicant proposed removing a bulkhead and placing riprap with the toe landward of the bulkhead. The preferred approach recommended in the guidance was to construct a marsh with sill. A board member stated, *"They are taking out the wall and placing revetment behind it. This is exactly how it should be done."* There was no discussion of the recommended preferred approach or the specific impacts of the project or impacts from an ecosystem services perspective.

The next most recurrent rationale was **the board felt there was erosion/risk**. In these cases, the boards determined that erosion was occurring and that something needed to be done. Once the need for action was established, boards tended to approve projects as submitted. As quoted from a board member in the minutes for VMRC #09-1527, *"I was out there today and something needs to be done. I consider this application as routine as they get."* In these cases, the fact the project was determined necessary seemed to provide justification to the board members for the proposed project and its associated impacts. There was usually little discussion on the preferred strategy for the shoreline and the proposed project usually was not evaluated for its impacts to the cumulative loss of tidal wetlands resources.

**Minor or minimal impacts** was frequently stated by wetlands boards justifying approval of projects not meeting guidance. These board decisions appeared to favor protection of private property over public benefit or the boards appeared to feel the need to protect private property was not impacting the public benefit enough to deny or modify the applicant's request. This rationale was applied to projects proposing minor impacts to wetlands (as perceived by boards); projects located in or almost in the same footprint of the existing structure; projects located in only a portion of wetlands board jurisdiction; or in situations where the boards appeared to feel the project was reasonable and practical (based on their beliefs about shoreline structures and not necessarily on the guidance or scientific fact) and therefore the impacts were acceptable to allow the property owner to protect his/her property. Yet, in many cases the actual impact area resulting from the approved project was not even known or assessed.

Structures proposed along previously hardened shorelines were for the most part approved, even those that may have been inappropriate for the shoreline. State law allows for maintenance and replacement of a structure with the same type structure in the same footprint with no new impacts. If the requested maintenance or replacement would result in additional (new) impacts, these activities are not exempt. In many cases, the structures were approved without discussion or investigation as to whether the proposal would impact additional aquatic resources.

In summary, boards tended to favor allowing the property owner to protect his/her uplands, if the boards' perceptions of the impacts were minor. Boards viewed these losses as acceptable. These impacts were usually non-vegetated and not compensated. In many cases the actual assessment of impacts was absent from the record.

Examples:

VMRC #08-2021, a riprap revetment was proposed. The guidance recommended a marsh sill. The board voted to approve the project with the rationale being that, *"This will allow the property owner to protect his property from further erosion with minimal environmental impact since the structure was mostly out of wetlands jurisdiction."* The board made an assumption that since the project was mostly out of their jurisdiction that it resulted in minimal impacts. Project impacts were not provided in the minutes and no assessment of impacts to the tidal shoreline ecosystem was discussed in the record. The impacts were non-vegetated and compensation was not required.

VMRC #09-0480 requested a bulkhead along a low-energy canal shoreline. The guidance recommended no action be taken or if action was desired to minimally grade only select areas to obtain a maintainable slope and densely plant the bank with wetland and native riparian vegetation. A board member stated, *"I went to the site this evening and I do not believe this bulkhead will have that much impact and I move that we approve as proposed."* There was no further discussion of the potential or specific impacts of the bulkhead in the record. The project was approved as submitted.

VMRC #08-1495, the applicant requested to remove and replace a riprap revetment with a new toe, filter cloth and more rock. The preferred shoreline management guidance recommended vegetative stabilization with a marsh sill as an alternative approach. A board member stated, *"The project would almost be in the same footprint."* Other board members agreed and the project was approved as submitted, unanimously. The rock proposed was channelward of the existing structure and was therefore not exempt under state code for maintenance of existing structures in place. New impacts were not addressed in the minutes for this structure.

**Board was against bank grading.** Some boards were against grading for a variety of reasons: grading was not practical due to the close proximity of a structure to the bank; the bank was too steep to be graded; removal of vegetation required stabilization of the bank, which can be difficult; the threat of erosion if a storm hits prior to the bank being stabilized; loss of trees; impact to the RPA; and removing existing structures created a mess and introduced sediment into the waterway.

Examples:

VMRC #11-0558, *"With a steep bank, grading is not possible and a bulkhead fits easier."*

VMRC #11-0188, *“The board is against grading banks due to the land disturbance created and between the time the bulkhead is removed and the riprap installed there could be a large storm.”*

VMRC #11-0091, *“The board opposes removing existing bulkheads and grading in the RPA due to the resultant land disturbance and difficulty re-stabilizing the bank.” “People don’t complain about the cost of the shoreline project, but they will complain about the cost of planting trees and vegetation.”*

**No impacts to vegetated wetlands.** There was minimal focus on non-vegetated wetlands by most boards in the public record. Only 8 out of the 29 boards in this study have an established mitigation-compensation policy for impacts to non-vegetated wetlands. For the other boards, if impacts to wetlands were discussed, the boards were usually referring to vegetated wetlands. If a project was not impacting vegetated wetlands, boards tended not to oppose the project. This is most likely due to VMRC’s enforcement of only vegetated wetlands under the Tidal Wetlands Mitigation-Compensation Policy. To quote a wetlands board member in the public minutes for VMRC #09-1527, *“I would just like to say that there are no vegetated wetlands involved here and our task is to protect vegetated wetlands. I do not believe it is up to us to dictate to applicants what to put in when there are no vegetated wetlands involved.”*

**Board did not believe a living shoreline would work or be appropriate at the site.** Boards did not require an applicant to use a living shoreline approach when recommended by the guidance due to several reasons: Their perceptions of the site not being conducive to a living shoreline attributable to nearshore depth, lack of sunlight or ability to grade the bank; or their belief that living shorelines did not protect the bank at high tide or during storms; were not permanent fixes; or they just didn’t believe they worked.

Examples:

VMRC #10-0369, *“I have not seen the natural approach work well in the county yet. I’ve seen coir logs tried several times but nothing that has really worked yet.”*

VMRC #11-0496, *“VIMS recommendation would work for a while, but there is no guarantee it would survive a northeaster storm and would require maintenance which is why the riprap proposed is more of a permanent fix.”*

VMRC #09-1339, *“...the erosion problem cannot be fixed with sills. Storm tide protection is needed.”*

**Consistent with adjacent property or local area.** In these cases, the rationale for approval of projects was because the adjacent property owner was previously approved for the same project, the same project was already located on the adjacent property, or the same project had been routinely approved in the past somewhere else in the locality. Assessment of the shoreline was usually not based on scientific fact, impacts, or the recommended guidance, but on what already existed along the shoreline. To quote a board member regarding a bulkhead request for VMRC

#06-2266, *“Mr. Chairman I will make a motion that this application be approved as presented. It is a continuation of what has already been done there and a completion of that portion of shoreline.”*

More examples:

VMRC #09-0075 requested a riprap revetment and the guidance recommended an offshore breakwater to avoid impacts to the beach and stated the proposed riprap structure would be expected to interrupt the natural movement of sand and remove natural beach/dune habitat. The board approved the riprap with the rationale, *“This type of structure has been used elsewhere in the county on similar locations and similar exposures approved by this board and by other voting members and that this is the only viable structure that would provide the protection that this property needs.”* The board did not address the impacts the structure would have on the beach nor discuss the recommended shoreline strategy in the public minutes.

VMRC #10-0742 requested a bulkhead along a high energy sandy beach shoreline with an exposure to the Chesapeake Bay. Bulkheads were not advised for high energy Bay-front shorelines because they are subject to early failure and do not dissipate wave energy. Offshore rock structures in combination with beach nourishment were recommended with a rock revetment as an alternative approach. A wetlands board member stated, *“A bulkhead structure has been tried on the adjacent property and has done its job, so my suggestion would be to allow a bulkhead.”* The project was approved as submitted, unanimously.

VMRC #08-2204 requested a bulkhead replacement. The recommended preferred shoreline management strategy was to remove the bulkhead and construct a riprap revetment as far landward as feasible. *“The board felt that since there were existing bulkheads on both adjacent properties along most of the reach, a bulkhead replacement was the correct approach.”*

**Cost** was a rationale used to justify approval of a proposed project over the preferred shoreline management strategy. However, rarely were specific details of cost discussed. An opinion was stated that the preferred strategy would cost more or just be cost prohibitive, but there was little discussion with specific cost estimates and comparisons provided to or by the board regarding the claims. The short term costs of constructing the project were never compared with the long term costs to ecosystem services and the goal of no-net loss of wetlands.

Examples:

For VMRC #09-1171, an applicant requested a riprap revetment, but the technical guidance recommended a marsh sill. A board member stated, *“I certainly would like to encourage a landowner to do sills if they can afford it, but I am reluctant to make them construct a sill when they can use riprap.”* Another board member stated, *“With these economic times, if people want to put in riprap, we better go along with it.”* No cost data was submitted to or reviewed by the board for this project per the public record.

VMRC #10-0376, the applicant requested a bulkhead. The technical guidance stated that bulkheads were not appropriate shoreline stabilization measures. Riprap was recommended as an alternative to a breakwater with beach nourishment. The agent stated the owner would not be amenable to installing riprap along the entire area as it was too costly. The applicant modified a small section of bulkhead to riprap and a board member stated, *"The applicant would not be able to install riprap (vs. bulkhead) along the entire area as it was too costly."* No actual cost data were reviewed or discussed.

Boards occasionally stated an approved project was the "most cost-effective" or "most-economical approach," but no data were submitted or discussed in the minutes to support these comments.

**Individual rights; benefit to private property owner.** In these cases, the boards approved projects based on the benefit to or desire of the property owner, irrespective of the public benefits and detriments or impacts of the project to the shoreline.

Examples:

VMRC #11-0224, the applicant requested bulkhead, the guidance recommended marsh with sill. Staff stated, *"The rationale of the board to approve the bulkhead was because the applicant had relatives in the construction business that can build a bulkhead. The bulkhead was a better fit for the landowner."*

VMRC #10-1292, the applicant requested a bulkhead and the guidance recommended a marsh sill. The contractor stated the owner had bulkhead on the adjacent lot and it was working well. He wanted to make them match. A board member stated, *"The rest of the shoreline is hardened and it would be hard to deny this property owner to have what the others have. The benefit to the property owner outweighs the damage to the environment. I think we have to go with the property owner."*

**Board followed staff comments/recommendations.** In these cases, the boards as the regulating body did not make any comments or rationales for or against the project, they simply followed the guidance of the staff. In these cases, the staff was the driving force behind the board decision.

**Board felt preserving trees/vegetated bank was most important.** The board decisions in these cases did not adhere to the guidance because they felt the recommended guidance would negatively impact trees. The boards' decisions in these cases put the value of the trees over the impact to the wetlands.

Examples:

VMRC #09-0010, *"The VIMS recommendation would jeopardize the existing trees on the property."* The applicant in this case requested a revetment. The guidance recommended a marsh sill. It was the board's opinion that *"the sill would not protect the bank enough to preserve the existing trees."*

VMRC #09-0305, the guidance recommended a breakwater with beach nourishment or riprap revetment as an alternative. The owner requested a bulkhead because they were not taking any trees out with that approach (no grading). The board approved the application as submitted “for the preservation of the mature trees along the shoreline.”

VMRC #11-0373, “The existing vegetation (trees) on site should remain to preserve upland vegetation to comply with the Bay Act. Preserving what is there is better than replanting.”

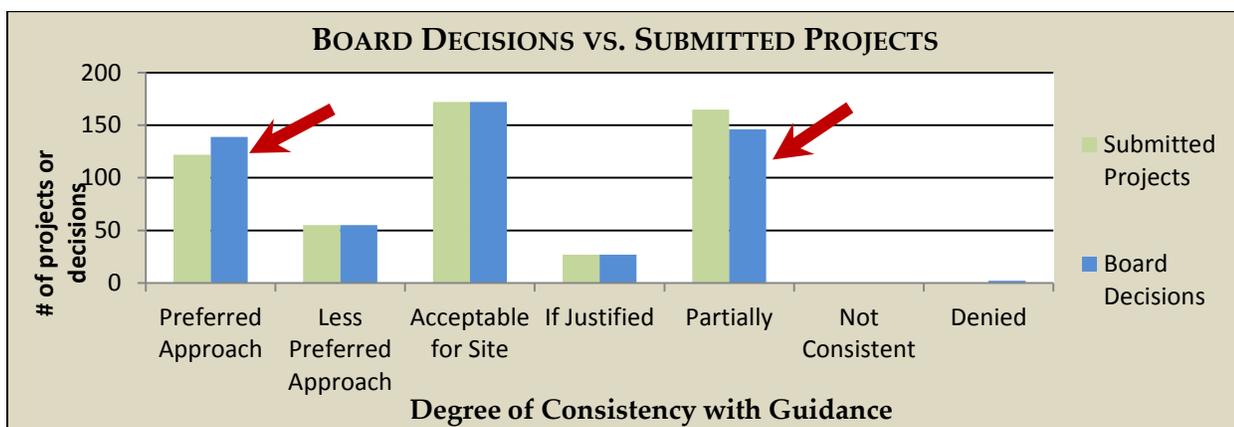
In summary, boards’ decisions did not meet guidance when their rationales focused on protection of private property and the desire of the property owner, as opposed to the protection of ecosystem services or the goal of no-net loss of wetlands.

### MODIFICATION OF PROJECTS TO MEET GUIDANCE

Wetlands boards’ actions to modify submitted projects to implement the preferred management strategies recommended in the guidance were minimal during this study.

#### CATEGORY 1: PROJECTS SUBMITTED MEETING GUIDANCE IN SOME FORM

For projects submitted meeting guidance *in some form*, wetlands boards modified only 4.6% (25/541) of projects to better meet the guidance than originally submitted (Figure 17).



**Figure 16. Degree of Consistency Comparison (Projects submitted meeting some form of consistency vs. Board Decisions).** The majority of boards’ actions modifying submitted projects meeting guidance in some form resulted in projects submitted originally meeting “partially consistent” with the guidance to become more preferred projects after board action.

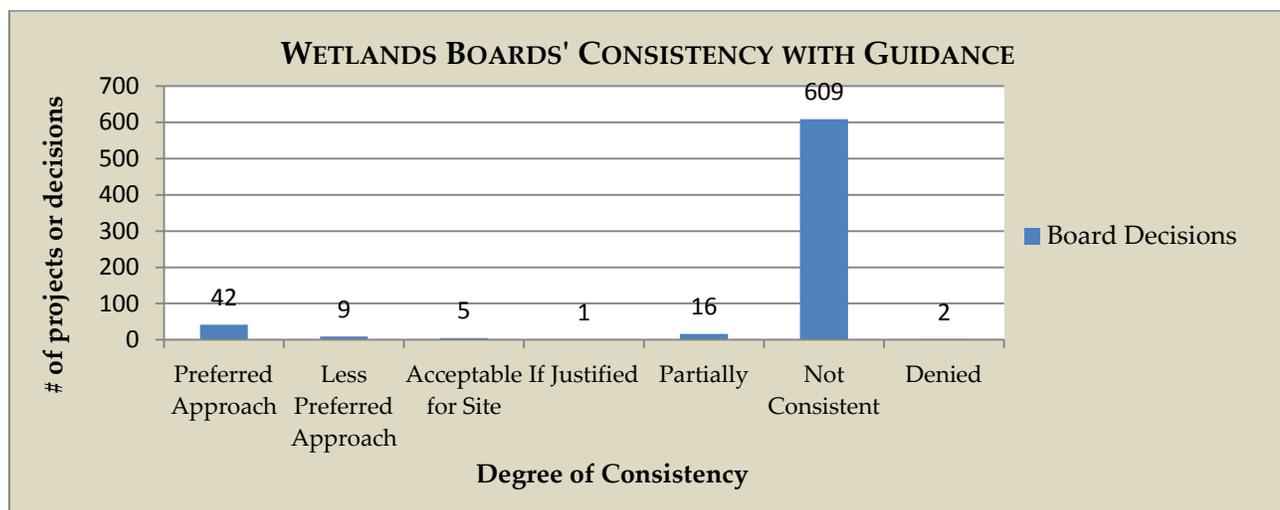
The modifications required to make these projects better meet the guidance included: moving the structure landward; reducing the length of the structure; changing the alignment to reduce impacts; placing the structure in the same alignment rather than channelward; adding sand nourishment; planting marsh grass and expanding existing marsh. Four projects were denied due to the boards not seeing a need for the projects or the proposed impacts.

Board rationales for making these project modifications focused on minimizing impacts and included: revised project with less impacts; followed the VIMS recommendations; placed structure landward of vegetated wetlands; and the project or impacts were not warranted.

The majority of these modifications was fairly easy to implement and still accommodated the request of the applicant; projects were only slightly modified to reduce impacts while not significantly changing the proposed projects.

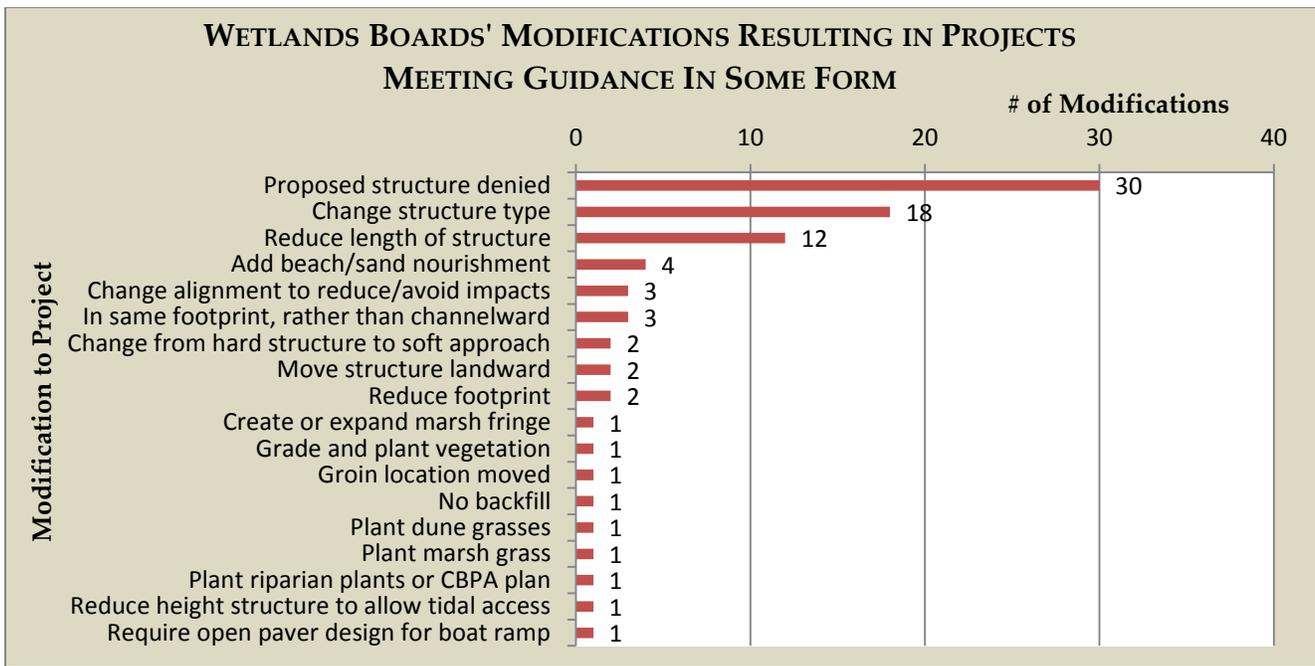
#### CATEGORY #2: PROJECTS SUBMITTED NOT MEETING GUIDANCE IN ANY FORM

Board decisions modified only 10.6% (73/684) of these projects to meet guidance *in some form* (Figure 18).



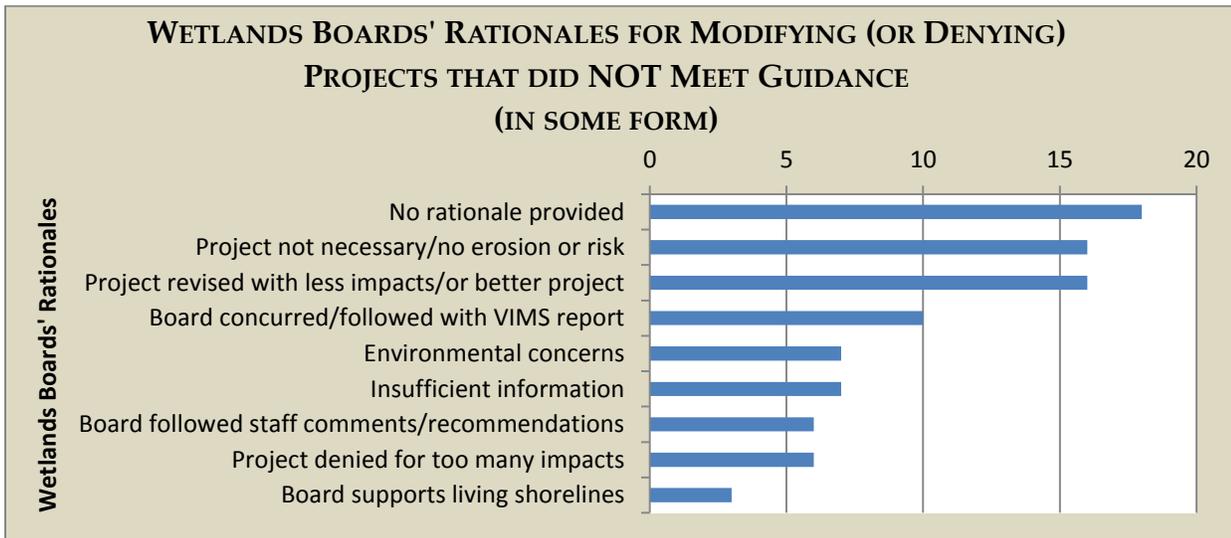
**Figure 17. Wetlands Boards' Consistency with Guidance for Projects Submitted Not Meeting Guidance.** The smaller blue bars, left of the “Not Consistent” column, illustrate the effect, albeit minimal, of the wetlands boards’ decisions resulting in approved projects meeting the guidance in some form.

The modifications made by wetlands boards to projects submitted not meeting guidance focused on reducing impacts or adding natural resource components to projects. The most frequent action was project denial (Figure 19).



**Figure 18. Wetlands Boards' Modifications to Projects Not Meeting Guidance.** *Denying proposed projects was the most frequent decision wetlands boards' made for projects not meeting guidance; changing structure type and reducing the length of the structure were second and third, respectively.*

Tracking the rationale for decision-making was constrained by lack of detailed records. The most frequent rationale provided for boards' modifications to projects that did not originally meet guidance was "no rationale provided" (Figure 20).



**Figure 19. Rationales for Modifying Projects that Did Not Meet Guidance.** *Available board rationales focused on minimizing or avoiding impacts. "Project not necessary/no erosion or risk" and "Project revised with less impacts/or better project" were the most recurrent rationales provided by boards for modifying these projects.*

Wetlands boards denied all projects they felt were **not necessary and/or where there was no erosion or risk present to warrant the project or the impacts**, which resulted in those decisions meeting the preferred approach.

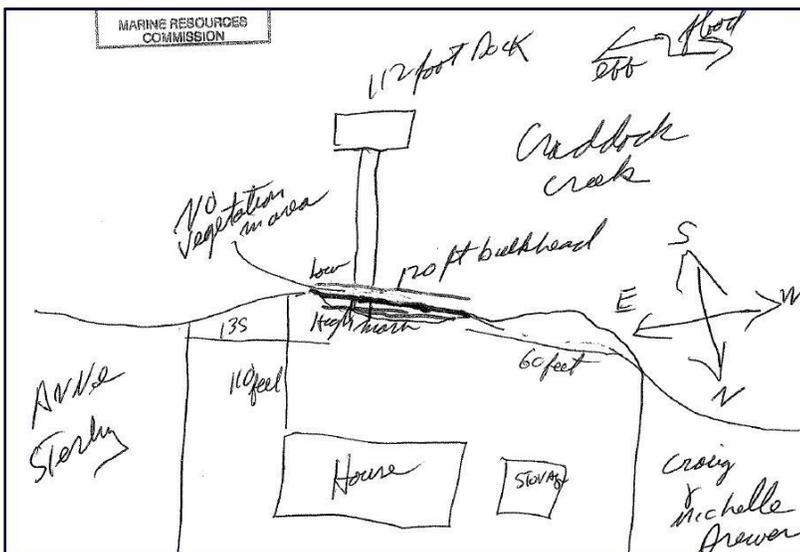
Examples:

VMRC #10-0612, the applicant applied for a riprap revetment. Comments from board members included, *“This is a beautiful marsh on both sides and personally I would not do anything. It looked well established and I cannot justify placing riprap where there isn’t a need.”* *“The house is far from the area and I didn’t see any active, detrimental erosion.”* *“I don’t see how the project could be justified; there is no environmental need for this project.”*

VMRC #11-0531, the applicant applied for a marsh toe. Comments from board members included, *“The shoreline is stable and I did not see anything to warrant what is being proposed.”* *“The cove is very protected in my opinion.”*

VMRC #10-0702, the applicant requested a marsh sill, the guidance recommended taking no action on this shoreline. Board member comments for this project included, *“I did not see any detrimental erosion on site.”* *“Marsh grasses are doing well and it is 400 feet from the structure.”* *“If the house had been closer to the structure, it might have been different.”* *“I saw a stable shoreline.”*

Boards denied seven projects due to **insufficient information**. The projects denied in these cases were large, complex projects. However, many of the typical drawings submitted and approved during this study lacked the minimum information required by Va. Code § 28.2 -1302 and were not denied (Figure 21). These drawings became part of the legal permit documents which also tended to lack specific, detailed information and in many cases simply referred to the permit drawings for project details. Acceptance and use of deficient documentation is ineffective in meeting the goal of no-net loss because it does not allow for a full or accurate accounting of impacts.



**Figure 20. Example Drawing Submitted to Wetlands Board.** Many drawings did not provide sufficient information such as: accurate impact data; limits of wetlands area directly affected; accurate depiction of site conditions; drawings to scale; accurate benchmarks; and MHW or MLW necessary for adequate review and enforcement purposes.

In summary, boards' decisions related to project modifications were consistent with guidance when their rationales focused on minimizing or avoiding impacts and the environmentally preferred approach for the shoreline. Even though board members did not directly speak to ecosystem services, their intent for minimizing impacts and denying projects on shorelines they felt were not eroding addressed preservation of tidal wetlands and supported sustaining ecosystem services.

## IMPLEMENTATION OF TIDAL WETLANDS MITIGATION-COMPENSATION POLICY

Virginia has an established state policy of no-net loss of wetlands resources and is also a partner in the Chesapeake Bay Program, committed to "achieve a no-net loss of existing wetlands acreage and function." VMRC's Tidal Wetlands Mitigation-Compensation Policy (Reg. 4 VAC 20-390-10 et seq.) requires boards to minimize or mitigate the loss of wetlands and the adverse ecological effects of all permitted activities through the implementation of the principles of the Wetlands Guidelines. Under the policy, to approve a proposed wetlands loss, a wetlands board must ensure the proposal meets the following criteria:

- 1) All reasonable mitigative actions, including alternative siting, which would eliminate or minimize wetlands loss or disturbance, must be incorporated into the proposal.
- 2) The proposal must clearly be water-dependent in nature.
- 3) The proposal must demonstrate clearly its need to be in the wetlands and its overwhelming public and private benefits.

The objective of this policy is to preserve the wetlands in their natural state as much as possible and to consider appropriate compensation only after the board has determined the loss of wetlands is unavoidable and that the project will have the highest public and private benefit. Compensation used to justify permit issuance is not an objective of this policy.

If a project satisfies all three of the above criteria and the project is approved, compensation for the wetlands loss is required. The sequence of acceptable mitigation options is as follows: on-site, off-site within the same watershed or mitigation bank in the watershed, or through payment of an in-lieu fee if on-site and off-site compensation are shown by the applicant to be impractical considering the project location.

For on-site mitigation, one aquatic community should not be sacrificed to "create" another. In other words, to truly compensate for loss of wetlands, wetlands must be created out of upland not another aquatic community. Planting non-vegetated wetlands with wetland grasses is not creating new wetlands; it is merely changing one type of wetland into another.

Throughout this study there was minimal evidence in the available public record of wetlands boards evaluating if impacts were in-fact avoidable and ensuring the above criteria were met. In

some cases, compensation was used to justify permit issuance. Sprigging of existing wetlands was often substituted for creating new wetlands and accepted as compensation.

Example:

VMRC #09-0329, the applicant requested a bulkhead replacement. The guidance recommended removing the bulkhead, grading the bank and planting vegetation, or for a less preferred option to remove the bulkhead, grade the bank and install riprap revetment with the toe aligned as far landward as feasible to avoid wetland impacts. A board member stated, *"Just walking around this property this afternoon it would appear to me that this would be a candidate for one of the living shorelines because it is low energy and the house is set quite a ways from the creek."* The contractor stated, *"The continuance of the vinyl bulkhead with the daughter's yard was the main goal for this project."* Staff stated, *"There is a loss of wetlands [behind the bulkhead] that probably should come first in this discussion."* A board member stated, *"How would you recommend that he mitigate?"* Staff responded, *"...I would pull the structure landward of that marsh vegetation and abate any loss whatsoever."* The contractor stated, *"We were prepared to pay the mitigation bank the \$12 per square foot, for the 50 square feet of impact."* A motion was made that *"...the application be approved with the stipulation the wetlands loss be compensated through the appropriate mitigation bank; that credits be purchased to offset the law – 50 square feet."*

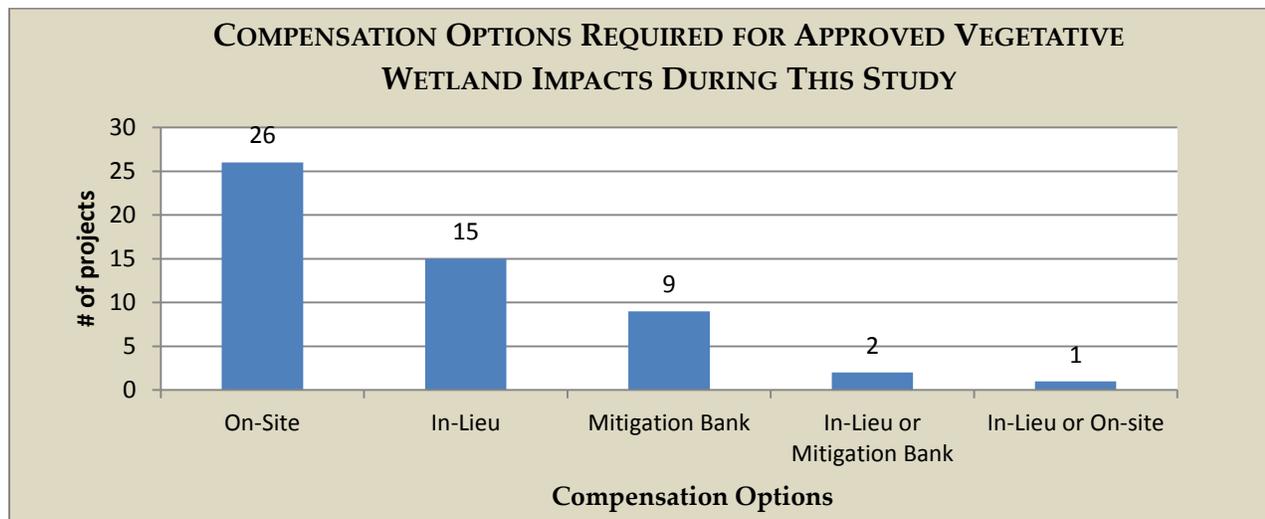
The board could have required this project to be relocated or the shoreline strategy revised to avoid the impacts proposed to the vegetated wetlands. The criterion of the Tidal Wetlands Mitigation-Compensation Policy to ensure wetlands impacts are unavoidable was not addressed. The board required compensation for the impacts of the bulkhead to justify issuance of the permit. Wetlands boards are charged with preserving the wetlands in their natural state as much as possible first and then to consider appropriate compensation only after they have determined the loss of wetlands is unavoidable.

VMRC #09-1610, the applicant requested 205 LF of revetment proposed to impact 50 square feet of vegetated wetlands and 50 square feet of non-vegetated wetlands. The guidance recommended removing the debris along the shoreline and planting the bank with vegetation, constructing a marsh sill, and nourishing existing breakwaters. There was no discussion by the board of the recommended guidance or evaluation if the proposed impacts were avoidable. A board member asked the agent, *"How do you propose to deal with 50 [vegetated] square feet?"* Mitigation of the non-vegetated wetlands impacts was not mentioned in the record. The agent stated she would work with staff because there was really no place to mitigate. The board member stated, *"I think you can transplant them. How about you plant whatever amount needed landward of the wall?"* The project was *"...approved as submitted with transplanting – offsetting whatever patens impacts there are."* Mitigation consisted of transplanting an unspecified square footage of wetlands vegetation, not creating new wetlands to offset the loss. No mitigation plan with specific details was required according to the public minutes.

If wetlands boards are to achieve no-net loss of wetlands in Virginia, the wetlands, no matter how small, should first be avoided and if unavoidable, appropriately replaced. The available records related to compensation requirements were limited compared to the number of projects involved in the study. In particular, requirements for and accounting of non-vegetated wetland compensation were lacking from boards that do not have established policies for this type of compensation. It is possible that additional compensation was required, but there is no documentation in the public record. This lack of documentation compromises the ability to track progress toward the no-net loss goal.

Because the boards seemed to be more alert for vegetated wetland impacts, there were records available for this type of compensation. The public record indicated 53 projects were required to provide compensation/mitigation for impacts to vegetative wetlands in this study (Figure 22). However, the total number of projects where vegetated wetland compensation should have been considered could not be determined due to a lack of impact area data in the public record.

Based on the public record, wetlands boards approved the sprigging (planting) of existing wetlands to offset the vegetative wetland losses for 11 of the 26 projects requiring on-site mitigation. Sacrificing one resource type for another did not meet the Mitigation-Compensation Policy criterion or support the goal of no-net loss. Based on the available minutes and permit documents received by VMRC, only 6 of the remaining 15 projects required to provide on-site compensation provided actual mitigation plans with details. The mitigation details for the 9 remaining projects were unclear in the public record.



**Figure 21. Vegetative Wetlands Compensation Options Required During this Study.**

## ROLE, RESPONSIBILITY AND AUTHORITY IMPLEMENTING THE TIDAL WETLANDS PROGRAM

As an overall group, board members appeared to lack a full understanding of their role, responsibilities and authority as the local regulatory authority implementing the Tidal Wetlands Program. Board comments from available minutes in this study included:

VMRC #10-0369, *"We don't have the authority to tell him to do it differently."*

VMRC #07-0913, *"This board is not here to determine whether the client puts in riprap or bulkhead; that is not what the Board does."*

VMRC #07-0913, *"You know one of our responsibilities is to approve these items as long as they do not impact negatively on other folks."*

VMRC #10-0369, *"I do not know if we can tell the applicant that he has to do riprap as opposed to bulkhead."*

VMRC #10-0376, *"It is incumbent upon the board to remember the property owner has a home to protect. The project may not be the best option, but this is the only option the owner has submitted."*

VMRC #11-0453, *"You can't make them do what they don't want to do."*

VMRC #09-1527, *"There are no vegetated wetlands involved here and our task is to protect vegetated wetlands. I do not believe it is up to us to dictate to applicants what to put in where there are no vegetated wetlands involved."*

Board members tended not to follow guidance when applicants wanted another approach. Many board members appeared to feel they did not have the authority to tell an applicant to do a project differently or make them do an approach they didn't want to do. At times it appeared the boards' felt they did not have a choice but to approve what was proposed in order to affect stabilization of a shoreline if the applicant was opposed to other options.

The Tidal Wetlands Act applies to both vegetated and non-vegetated wetlands; however board members often did not give priority to non-vegetated wetland impacts. Guidance for projects impacting non-vegetated wetlands were frequently dismissed with many boards not appearing to reflect they had authority over and responsibility to review impacts to non-vegetated wetlands.

Board members also appeared unsure of their ability to require actions such as planting of riparian areas, installing vegetated berms, grading upland banks and other actions outside of their "jurisdiction" to affect the health of wetlands.

## SUMMARY - PATTERNS FOR WETLANDS BOARDS' VARIANCE FROM GUIDANCE

### Focus on Protection of Private Property

Boards' focus on protection of private property and the benefit of property owners was a predominant pattern for variance from the guidance. Boards' decisions varied from the guidance when their rationales focused on protection of private property and the desire of the property owner, as opposed to the protection of ecosystem services or the goal of no-net loss of wetlands.

A large percent of wetlands boards' decisions focused on protection of private property with minimal assessment of wetlands preservation and ecosystem services. Preferred shoreline strategies were passed over for less costly or more straight-forward approaches for shoreline stabilization (in the boards' view) so as not to adversely affect the property owner, irrespective of the impact on the resource.

Due to this focus on protection of private property, assessment of the erosion along a shoreline, and enabling property owners to fix those erosion problems rather than preserving wetlands appeared to be the charge of the majority of wetlands boards in this study. Boards acted more as erosion control boards rather than as wetlands boards. Protecting tidal wetlands resources became more of a priority when board members did not perceive a property owner had an erosion problem.

### Approval of Projects as Submitted

The majority of wetlands projects were "approved as submitted" regardless if they were consistent with guidance. This resulted in a preponderance of wetlands boards' decisions that potentially did not exert authority or influence over projects to implement environmental guidance and preserve existing wetlands and sustain ecosystem services as intended by the Tidal Wetlands Program.

### Approval of "Familiar" Traditional Shoreline projects as a matter of routine

Traditional shoreline stabilization measures such as riprap and bulkhead were routinely approved because they "worked" as determined by the wetlands boards. They did their job in stabilizing the shoreline to protect private property. *"A bulkhead structure has been tried on the adjacent property and has done its job, so my suggestion would be to allow a bulkhead."* These shoreline approaches were "familiar" to board members as exemplified in the following quotes, *"This is how it should be done."* *"This is as routine as it gets."* *"This is what we have approved in the past."* In many of these cases, boards discounted the technical guidance provided and based their decision making on their opinions, perception of shoreline structures, and past precedence of action.

### **Some Avoidable Wetlands Losses Were Acceptable**

Wetlands boards perceived wetlands impacts in certain situations as acceptable and under these circumstances did not modify projects to meet the recommended preferred management strategy. These included: projects impacting small amounts of wetlands; projects located in mostly the same footprint of the existing structure; projects located in only a portion of wetlands board jurisdiction; or projects considered reasonable and practical and therefore the impacts deemed acceptable to allow the property owner to protect his/her property. The amount of impacts in these circumstances were often not known or assessed.

### **Minimal Focus on Non-Vegetated Wetlands Impacts**

Non-vegetated wetlands in general were not a large concern for most boards and impacts to non-vegetated wetlands frequently were not discussed according to the public minutes. It is assumed that VMRC's implementation of the Mitigation-Compensation Policy not expecting mitigation for non-vegetated wetlands was responsible for this behavior or perhaps board members did not comprehend the value of non-vegetated wetlands. For the most part, only boards that required compensation for non-vegetated wetlands addressed non-vegetated impacts. Therefore guidance recommending actions associated with reducing impacts to non-vegetated wetlands tended not to be followed.

### **Lack of Confidence in Strategies that Incorporate the Use of Natural Resources**

Boards appeared to lack confidence in vegetative and soft stabilization strategies being able to permanently fix erosion problems to protect private property and favored the traditional shoreline stabilization measures such as riprap and bulkhead that "worked" and "did their job." Therefore boards often did not implement vegetative and soft stabilization recommendations.

### **Minimal Assessment of Wetlands Preservation and Ecosystem Services**

Guidance recommendations provided to boards were based on the ecological approach to shoreline management. However boards more routinely applied the traditional approach to shoreline stabilization. Boards' evaluation of projects routinely did not balance the preservation and use of wetlands to protect ecosystem services. Discussion of actual impacts frequently was minimal or absent. The objective of the preferred approaches to sustain wetlands and their capacity to provide ecosystem services was not routinely considered in the decision making process. This resulted in ecological guidance often not being followed.

### **Unsure of Role, Responsibility and Authority Implementing the Tidal Wetlands Program**

Board members tended not to follow guidance when applicants wanted an approach other than the preferred shoreline strategy because they felt they did not have the authority to tell an

applicant to do it differently or require them do something they didn't want to do. Boards also appeared unsure of their ability to require actions outside of their "jurisdiction" to affect the health of wetlands, such as planting of riparian areas, installing vegetated berms, grading upland banks and other actions, and therefore avoided the guidance recommendations associated with these actions.

In addition, the boards collectively did not appear to understand their role and responsibility to balance the use and preservation of non-vegetated wetlands as well as the vegetated resources.

### **TASK 3 – BASED ON THE FINDINGS OF TASKS 1 AND 2, DEVELOP RECOMMENDATIONS FOR MODIFYING PROGRAM GUIDANCE, REGULATIONS, AND/OR STRUCTURE TO IMPROVE THE EFFICIENCY AND CONSISTENCY OF VIRGINIA’S TIDAL WETLANDS PROGRAM TO BETTER ACHIEVE THE GOAL OF NO-NET LOSS OF ITS TIDAL WETLAND RESOURCES**

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Collectively, citizen wetlands boards were not effective in implementing Virginia’s Tidal Wetlands Program to meet the goals of the no-net loss of tidal wetlands and sustain the ecosystem services they provide based on the study data. The majority of projects was approved as submitted and approved unanimously whether or not they were consistent with guidance. Impact data was not consistently calculated and/or tracked to be able to assess the Commonwealth’s net loss or net resource gain of tidal wetlands.

Two options are proposed for improving Virginia’s Tidal Wetlands Program. One is to develop a state implemented permit program and abandon the current non-technical peer review process. The other is to address the issues of the existing program to improve its effectiveness.

#### **OPTION #1: STATE PERMIT PROGRAM**

Develop a tidal wetlands permit program based on shoreline management strategies designed for specific shoreline characteristics and tidal ecosystem processes.

- Establish a preferred shoreline management strategy order (e.g. Do nothing, soft stabilization, marsh sill, etc.) for shoreline types and sustaining ecosystem processes.
- Require approved design standards and specifications for implementation of strategies (e.g. marsh sill design guidelines)

Implementation:

- VMRC develop a permit program based on technical standards and specifications rather than a public hearing and non-technical peer review
- VIMS/CCRM assist VMRC with the development of preferred shoreline management strategies for shoreline characteristics and ecosystem processes; categorize preferred options
- VMRC with VIMS/CCRM assistance develop shoreline strategy design standards and specifications
- VMRC serve as the regulatory authority for the permit program
- Local government assist VMRC in enforcement

## OPTION #2: ADDRESS EXISTING TIDAL WETLANDS PROGRAM:

Revise the following areas of Virginia's Tidal Wetlands Program to facilitate meeting the goal of no-net loss of tidal wetlands resources:

- Education
- Administration
- Guidance
- Wetlands Accounting

### EDUCATION

Recommendations:

- Board members must achieve educational requirements to ensure satisfactory understanding in the areas such as but not limited to:
  - Impact assessment
  - Ecosystem services
  - Mitigation-Compensation criteria
  - Policies and Procedures
  - Role, Authority, Responsibilities

Require all wetlands board members to complete a tidal wetlands program training in the first 6 months of their term and require periodic continuing education credits to remain on the board.

- Persons submitting JPAs must be certified, similar to the Virginia Erosion and Sediment Control Program "Responsible Land Disturber" (RLD), to demonstrate satisfactory understanding of but not limited to:
  - Required JPA information, including acceptable drawings
  - Impact assessment
  - Regulatory Jurisdictions

Certification should be open to property owners, agents, contractors and others. Hold the certified person submitting the application responsible and accountable for the wetlands project (similar to the RLD program). This may provide incentive for the application to be more accurate and complete.

- Certification of Wetlands Board Staff to demonstrate satisfactory understanding of but not limited to:
  - Regulatory Jurisdictions
  - Required JPA information, including acceptable drawings

- Impact Assessment
- Ecosystem Services
- Mitigation Criteria
- Policies and Procedures

Under the Virginia Erosion and Sediment Control program, administrators, plan reviewers and inspectors must meet minimum education requirements through certification testing every three years. Virginia building inspectors and officials must also maintain certification and other requirements on a continuing basis. Currently, wetlands board staff have no required minimum education standards to be met or maintained.

- Marine Contractors (Marine Industry) Certification Program

Contractors, agents and others in the marine industry are typically involved at the beginning of the process and can greatly influence the type of wetlands projects implemented along the shoreline. This study revealed that wetlands boards do not generally change a project once it is submitted. Educating this sector on the preferred shoreline management strategies would potentially increase the number of preferred projects submitted to the boards. In addition, this sector is involved in installing shoreline strategies. Education regarding design criteria and understanding of ecosystem services may potentially result in better constructed projects.

#### Implementation:

- VIMS/CCRM to provide technical assistance to VMRC in the development of education components and training
- VMRC responsible for regulatory authority and oversight
- VIMS/CCRM & VMRC partner in management and implementation of certification programs
- Wetlands Boards assist in implementing education requirements for staff and boards and enforcement of education requirements for agents, contractors and others involved in the process.

#### ADMINISTRATIVE

#### Recommendations:

- All JPAs must be complete.
  - Incomplete applications must not be accepted.

- Require that only certified persons complete a JPA, similar to the “Responsible Land Disturber” (RLD) requirement of the Virginia Erosion and Sediment Control Program.
- Require applicants to use the most current JPA form to ensure consistency among applications and dissemination of the most current application process information.
- Adopt a Preferred Shoreline Management Strategies List.
  - Incorporate preferred approaches for shoreline conditions into program guidelines and require property owners to first prove why the preferred approach cannot be used before an alternative approach is considered.
  - Require through legislation that the most appropriate preferred shoreline strategy for the shoreline conditions from the list be the approved project. Require any necessary waivers to be substantially justified.
- Develop a general permit for living shorelines to give property owners incentive to choose a living shoreline for their shoreline management strategy, if appropriate for their shoreline.
- Develop comprehensive and functional checklist
  - To guide board members during public hearings to ensure all criteria and policies of the Tidal Wetlands Program are consistently addressed.
- Enforce full public record of board proceedings, including rationale
  - Require a rationale for every project approval, modification or rejection be stated in the minutes. Enforce Code requirement (28.2-1304) requiring boards to provide a full public record of board proceedings, including a rationale.
- Develop Electronic Uniform Permit Template
  - To include clearly stated project approval information, specific board decision and impact data to ensure boards and staff consistently address and record project impacts and details to enable better compliance review and evaluation of no-net loss of wetlands.
- Review local wetlands boards’ performance on a consistent periodic basis
  - Conduct local program reviews every three years to assess how effectively localities are implementing program goals similar to the Chesapeake Bay Preservation and Erosion and Sediment Control Programs.
- Enforce annual reporting
- Develop a Comprehensive Shoreline Permit

- Comprehensive multi-agency permit based on Integrated Guidance to facilitate a complete, more efficient and synchronized review of the tidal shoreline ecosystem eliminating overlapping assessment and issuance of multiple permits.

#### Implementation:

- VMRC and Boards enforce JPA requirements
  - Exercise existing decision review authority to ensure wetlands boards comply with Virginia Code and Regulations regarding completed applications.
- VIMS/CCRM provide technical assistance to VMRC in checklist and permit template development
- VMRC coordinate with DCR, VIMS/CCRM, the CORPS, DEQ and local governments to develop a Comprehensive Shoreline Permit
- VMRC responsible for regulatory authority

#### GUIDANCE

#### Recommendations:

- Provide guidance at the beginning of the process to the marine industry (contractors and agents) as well as property owners to encourage more consistent applications.
  - On the JPA:
    - Include CCRM decision trees in the JPA packet.
    - Provide an order of preference list of shoreline strategies in the JPA packet.
    - Provide a link to the CCRM website for more information on preferred shoreline management strategies.
  - Training
    - Contractor and agent training on preferred shoreline management strategies

Over half of the projects during this study did not meet the guidance in any form when submitted and boards tended not to change a project once it reached the public hearing stage. Providing technical guidance to land owners, contractors, and agents prior to designing and submitting a Joint Permit Application is critical.

- Develop integrated guidance that addresses all areas across a tidal shoreline

The current regulatory structure partitions the assessment of the tidal shoreline ecosystem into “jurisdictions” managed by separate regulatory bodies. This results in wetlands boards limiting their review of a project to their “jurisdiction” rather

than looking at the tidal ecosystem as a whole. In order to achieve the best management of the tidal shoreline resource, boards must take into account what's happening outside their "jurisdictional" box when they make decisions, as well as consider the effect their permit decisions will have on other parts of the tidal shoreline ecosystem.

- Clarify boards' authority and/or responsibilities under the intent of the Tidal Wetlands Act (such as role as wetland board, not erosion protection board; capacity to consider project elements outside wetlands that impact wetlands; capacity to modify projects)
  - Develop Regulatory Guidance letters
  - Develop a Wetlands Board Responsibility Handbook outlining the specific roles, responsibilities and authority of local wetlands board members implementing Virginia's Tidal Wetlands Program in "laymen's" terms, rather than in legal, ordinance language, including specific examples of the board's authority in various, typical situations.
- Encourage wetlands boards and staff to utilize littoral cells during project review and consider the potential impacts of a project on the surrounding shoreline environment.

Shorelines are divided into natural compartments called littoral cells. Each cell contains a complete cycle of sedimentation including sources, transport paths, and sinks. To identify the up-drift and down-drift limits of long-term movement of sediment resulting from a proposed project and therefore the limits of potential effects on ecosystem services and tidal shoreline resources, potential effects of proposed shoreline projects should be evaluated and managed on a littoral cell scale.

- Develop up-to-date construction cost data for preferred shoreline management strategies vs. traditional approaches for typical shoreline types. Make this information available to board members, staff, and the public for more informed decision making.
- Provide guidance on how shoreline protection strategies incorporating natural resources work; how they are appropriately designed; and how they function during storm events and over time using site specific examples and pictures of before and after success stories.

Boards' decisions frequently avoided strategies that incorporated natural resources due to their belief these strategies did not protect the upland bank, were not permanent fixes and would not protect the shoreline during a storm event.

#### Implementation:

- VIMS/CCRM to delineate littoral cells and direction of sediment flow for Virginia's Tidal Waters and develop training for regulatory authorities and staff on the use of

littoral cells in the management of shoreline resources and preservation of ecosystem services.

- VIMS/CCRM to assist with development of continuing educational guidance and training
- VMRC with VIMS/CCRM assistance develop and promulgate integrated guidance

## WETLANDS ACCOUNTING

### Recommendations:

- Both vegetated and non-vegetated impacts must be:
  - Accurately assessed in the field on every project, and reassessed if revised.
  - Documented (Approved impacts should be clearly stated in minutes and on permit documents)
  - Tracked
    - Develop standardized impact tracking database to be used by all localities implementing Tidal Wetlands Program to facilitate easy and consistent reporting to VMRC regarding annual net loss or gain of tidal wetlands.
- Compensation must be tracked...location, size, how well is it working
- Develop a program for utilizing in-lieu fee funds
- Enforce Tidal Wetlands Mitigation-Compensation Policy Criteria
  - Assess if impacts are in fact avoidable
  - Demonstrate clearly the need the need for a project to be in the wetlands
  - Require both vegetated and non-vegetated wetlands impacts be compensated
  - Wetlands must be created out of uplands
  - Require sufficiently detailed mitigation plans with success criteria
  - Require performance bonds until wetland is successfully established

### Implementation:

- VMRC enforcement
- VIMS/CCRM to assist with development and implementation of certification and other training programs

### Finally, to improve the current tidal wetlands program

- The perception of the role of the wetlands boards must change from erosion control to a tidal wetlands board.
- Full implementation of technical guidance to protect the public trust resources will likely require regulatory enforcement to affect the desired result.

## VIMS Shoreline Permit Application Report # 10- 10-0000

**APPLICANT:** Joe. R. Homeowner  
Locality: GLOUCESTER COUNTY  
Immediate Waterway: Sarah Creek  
Report Date: 1/27/10

### EXISTING SITE CONDITIONS AND PROPOSED ACTION:

The applicant proposes 175 LF of oyster bag sill with approximately 4000 square feet of sand backfill to be planted with marsh springs; and installation of one 30 LF coir log along his low energy shoreline of Sarah Creek. The energy along this shoreline may potentially be increased due to boat wakes in this creek. The shoreline currently contains a low bank with marsh fringe. The upland is forested with the residential structure located approximately 80 feet from the shoreline.

### THE PREFERRED APPROACH FROM AN INTEGRATED MARINE ENVIRONMENTAL VIEWPOINT:

This shoreline supports an existing marsh which plays a role in reducing wave energy and providing protection to the shoreline. Effective upland shoreline protection may be achieved by creating additional marsh and providing marsh toe protection as proposed. The area deposited in sand would raise the elevation of the shoreline, increase the distance between the shoreline and tidal action, provide better wave run up and attenuation and area to plant additional marsh grass and further enhance shoreline protection.

An oyster bag sill structure constructed channelward of the created marsh is proposed to hold the sand in place; provide an energy buffer to the newly created and existing marsh; and provide a wave break for the upland bank. We question how the proposed bags will be anchored together and secured in place to prevent the sill from failing. Along with anchoring, we recommend that periodic inspections be made to monitor the oyster bags for maintenance to address bags that may become dislodged or scattered away from the project footprint and unlike rock the proposed bags will eventually decay and deteriorate.

We recommend the proposed coir log be properly staked to ensure it stays in place to function as intended.

### RECOMMENDATION(S) SUMMARY:

\*Construct the oyster bag sill with nourishment and install coir log



Center for Coastal Resources Management  
P.O. Box 1346  
Gloucester Point, VA 23062-1346  
(804)684-7792, fax: (804)684-7179, <http://ccrm.vims.edu/>



Figure A: VIMS Shoreline Permit Application Report (Guidance).

VMRC #: 10-1932

JPA Documents (Proposed project to Board or) LF

Date\_proposed\_drawings: Final Permitted Project LF Date\_approved\_drawings:

Bulkhead Replacement 140 Bulkhead Replacement 140

Drawings\_not\_dated  Final\_drawings\_not\_dated

Bulkhead Replacem 140

VIMS assessment of proposed project

	LWB	VMRC	VIMS
VEG_IMPACTS: 0			0
NV_IMPACTS: 0			0
SUB_IMPACTS: 280			210
BEACH_IMPACTS: 0			210
Veg Wetland Impacts: 0			0
Veg Wetland Fill: 0			0
NV Wetland Imp: 210			210
NV Wetland FILL: 210			210
Sub_Impacts: 70			70
Sub_Fill: 70			70
Dune/Beach_Impacts: 0			0
Dune/Beach_Fill: 0			0

Note: Impacts are in square feet

Source of VIMS impact information: JPA Documents, VIMS on site

Source: Unknown Source: Unknown Source: Original VIMS

Original\_Submittal\_meets\_VIMS\_Guidance: No

Public\_Hearing\_Submittal\_meets\_VIMS\_Guidance: No

Group\_affecting\_change:

Board\_Consistent\_with\_Vims\_Report?: No

Recommendations\_not\_addressed: Move structure landward, Stabilizati

Board\_Consistent\_with\_DT?: No

VMRC\_Consistent\_With\_VIMS\_Report?:

Compensation\_Required: No

Compensation\_Type:

Compensation\_Amount: square feet

Resource\_Type:

Compensation\_Comments:

Figure B. Permit Fidelity Database – Permit Impacts Form

VMRC\_ #: 10-1932      Comments:

Site\_Visit?

Yes  Site\_Visit\_Date: 2/3/2011

Report\_Date: 2/11/2011

Vims\_Report: the preferred alternative in very low settings such as this site is to replace deteriorating bulkheads with non-structural vegetative stabilization. This includes removing the failing bulkhead and grading the bank to appropriate slopes to support a buffer with wetland and riparian vegetation.....if this approach is not feasible due to the building, then removing and replacing the bulkhead in

VIMS\_Report\_Link: <http://ccrm.vims.edu/permits/10-1932.pdf>

Decision\_Tree\_Outcome: Grade and vegetate

Is\_Decision\_Tree\_Consistent\_with\_VIMS\_Report?: Yes

Explanation for inconsistency of VIMS Report and Decision Tree:

Record: 1 of 1    No Filter    Search

Figure C. Permit Fidelity Database – VIMS Information (Guidance)

VMRC #: 10-1932		
Regulatory_Authority	Public_Hearing_Date	Public_Hearing_Agenda
Wetlands Board	2/16/2011	<a href="http://ccrm.vims.edu/scans/2011/02/16/10-1932-N.pdf">http://ccrm.vims.edu/scans/2011/02/16/10-1932-N.pdf</a>
Final_Decision: Approved as submitted	<input type="checkbox"/> Administrative_Decision?	Decision_Tree_Used: Wetlands Staff
Approved_Action(s): 140 LF of replacement bulkhead channelward of existing bulkhead		Staff_support_VIMS_recommodat Unknown
Rationale_for_Decision: The contractor informed the Board that no excavation of the property is allowed as it has been deemed an Indian burial site. A board member stated his concern for the proposed		VIMS_advice_considered?: Report read by staff, no discussion of VIMS advice by bc
Source_of_Rationale: wetland board minutes		Admin_Dec_Comments:
Link_To_Source: <a href="http://ccrm.vims.edu/scans/2010/10-1932-N.pdf">http://ccrm.vims.edu/scans/2010/10-1932-N.pdf</a>		Permit_Approval/Document_comments:
<input type="checkbox"/> LWB_Decision_Reviewed_By_VMRC?	Comments:	
<input type="checkbox"/> Heard_without_VIMS_Report		Link_to_permit_document:
Date_of_approved_drawings:		
VMRC		
Final_Decision: Approved as submitted	<input checked="" type="checkbox"/> Administrative_Decision?	VIMS_advice_considered?:
Approved_Action(s): 140 LF of replacement bulkhead channelward of existing bulkhead		Admin_Dec_Comments:

Figure D. Permit Fidelity Database – Public Hearing Information

### Part 1 – General Information

**PLEASE PRINT OR TYPE ALL RESPONSES:** If a question does not apply to your project, please print N/A (not applicable) in the block or space provided. If additional space is needed, attach 8-1/2" x 11" sheets of paper.

County or City in which the project is located: _____
Waterway at project site: _____

1. Applicant's name* and complete mailing address: _____  State Corporation Commission ID Number (if applicable) _____	Contact Information: Home ( ) _____ Work ( ) _____ Fax ( ) _____ Cell/ Pager ( ) _____ e-mail _____
--	--

2. Property owner(s) name* and complete address, if different from applicant _____  State Corporation Commission ID Number (if applicable) _____	Contact Information: Home ( ) _____ Work ( ) _____ Fax ( ) _____ Cell/ Pager ( ) _____ e-mail _____
--	--

3. Authorized agent name* and complete mailing address (if applicable): _____  State Corporation Commission ID Number (if applicable) _____	Contact Information: Home ( ) _____ Work ( ) _____ Fax ( ) _____ Cell/ Pager ( ) _____ e-mail _____
---	--

**\* If multiple applicants, property owners, and/or agents, each must be listed and each must sign the applicant signature page. If for a company, use the SCC registered name.**

4. Provide a detailed description of the project in the space below. If additional space is needed, provide a separate sheet of paper with the project description. Be sure to include how the construction site will be accessed, especially if clearing and/or grading will be required.

<b>FOR AGENCY USE ONLY</b>	
	Notes:
	JPA #

Revised: July 2012  
Revised: November 30, 2011

**Figure E.** Joint Permit Application (JPA), first page. Application required to concurrently apply to the local Wetlands Board, VMRC, Virginia Department of Environmental Quality and the U.S. Army Corps of Engineers for tidal and non-tidal wetland impacts in Virginia. The application receives independent review by each regulatory authority. This report focuses only on the local Wetlands Boards' review of projects. To view a full Tidewater JPA, go to [http://www.nao.usace.army.mil/Portals/31/docs/regulatory/RPSPdocs/Revised\\_Tidewater\\_JPA\\_JU\\_LY2012\\_FillableForm.pdf](http://www.nao.usace.army.mil/Portals/31/docs/regulatory/RPSPdocs/Revised_Tidewater_JPA_JU_LY2012_FillableForm.pdf)



**Figure F.** Virginia Coastal Zone Planning District Commissions