CONTINUITY PLAN

FOR THE VIRGINIA INSTITUTE OF MARINE SCIENCE

NOTICE

The Continuity Plan of the Virginia Institute of Marine Science utilizes the Continuity Plan Template for Executive Branch Agencies and Institutions of Higher Education developed by the Virginia Department of Emergency Management and promulgated in December 2011.

John T. Wells, Dean and Director, Virginia Institute of Marine Science

Joseph Martinez, Chief Operations Officer, Continuity Coordinator, Virginia Institute of Marine Science

April 2014 – Version 3.2

This document contains sensitive and confidential information that is not subject to FOIA under Virginia Code §2.2-3705.2.

SECURITY AND PRIVACY STATEMENT

Public disclosure of this document would have a reasonable likelihood of threatening public safety by exposing vulnerabilities. It contains sensitive and confidential information that is not subject to FOIA under Virginia Code §2.2-3705.2. Accordingly, the Virginia Institute of Marine Science is withholding this plan from full public disclosure. Refer any request for a copy of this document to the Institute's Freedom of Information Act (FOIA) Officer.

Virginia Institute of Marine Science
Continuity Plan

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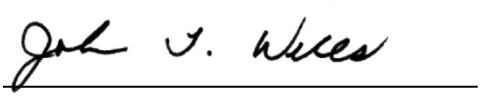
PROMULGATION STATEMENT

The mission of the Virginia Institute of Marine Science (VIMS or the Institute) is to conduct research in the broad area of marine science, provide advisory services in marine science to a broad range of clients including state, federal, and local governments, non-governmental organizations, business, and private individuals, and to educate graduate students and others. To accomplish this mission, VIMS must ensure its operations are performed with minimal disruption during all-hazards emergencies or other situations that disrupt normal operations. This document provides planning and program guidance for implementing the Institute's Continuity Plan and Continuity Program to ensure the agency is capable of conducting its Mission Essential Functions (MEFs) under all threats and conditions. VIMS is committed to the safety and protection of its personnel, contractors, operations, and facilities. This Continuity Plan is a recovery plan that works as a companion plan with the Virginia Institute of Marine Science Emergency Operations Plan, Hurricane Preparedness Plan and other, similar documents and provides a framework to minimize potential impact and allow for rapid recovery from an incident that disrupts operations. This plan encompasses the magnitude of operations and services performed by the agency and is tailored to the agency's unique operations and MEFs.

This plan identifies key personnel that perform or manage the performance of MEFs. Upon plan activation, key personnel will be notified and assume responsibility for implementing the plan in accordance with the guidance provided by the Continuity Officer/Chief Operations Officer or his/her designee. Key personnel should be prepared to implement the Continuity Plan, and perform MEFs within the established recovery time objectives for a period of up to 30 days or until normal operations can be resumed.

This Continuity Plan was prepared by the Virginia Institute of Marine Science to develop, implement and maintain a viable continuity capability. This plan complies with applicable internal agency policy and state regulations and supports recommendations provided in FEMA's Continuity Guidance Circular 1 (CGC 1) and Continuity Guidance Circular 2 (CGC 2). This Continuity Plan has been distributed internally to appropriate personnel within VIMS and with external organizations that might be affected by its implementation.

I hereby appoint the Chief Operations Officer to serve as the Continuity Coordinator for the agency. This position shall assume the identified responsibilities outlined in the Continuity Plan and possess the authority necessary to carry out the duties delineated in this plan. When this plan is activated, a Reconstitution Manager will be appointed who shall have all of the authorities and responsibilities described herein. This promulgation shall also serve as official approval of the Orders of Succession and Delegations of Authority outlined herein.



John T. Wells

Dean and Director

Virginia Institute of Marine Science

(date) April 1, 2014

RECORD OF CHANGES

Submit recommended changes to this document to Virginia Institute of Marine Science Continuity Coordinator/Chief Operations Officer.

Table 1
Record of Changes

Change Number	Section and/or Page Number	Description of Change	Date of Change	Posted By
1	Throughout	Corrected typographical errors; updated titles of staff positions; updated names of individuals holding key positions; updated all dates to April 2013	4-24-13	John Wells
2	Page 6	Added electronic signature to Promulgation Statement	4-24-13	John Wells
3	Page 19	Added text on Continuity Coordinator and activation of plan (before Table 6)	4-23-13	John Wells
4	Page 22	Added reference to Appendix D	4-24-13	John Wells
5	Page 23	Added text indicating that Reconstitution Manager will be appointed (also in Table 9)	4-24-13	John Wells
6	Pages 45-46	Added new text on alternate facilities	4-24-13	John Wells
7	Appendix C, Tables C-1, C-2	Modified text to more fully describe essential records, systems and equipment	4-24-13	John Wells
8	Throughout	Added text to make BPAs and PBFs complete	4-24-13	John Wells
9	Throughout	Corrected typographical errors; updated names of individuals holding key positions	3-6-2014	Joe Martinez

PUBLICATION AND DISSEMINATION

The Virginia Institute of Marine Science Continuity Plan will be distributed to executive leadership and key personnel within the agency and to others as deemed appropriate by the Dean and Director or Continuity Coordinator. Requests for additional copies of this plan or notification of updates should be directed to the Continuity Coordinator. Most distribution will be in an electronic format.

Table 2

Continuity Plan Distribution List

Name	Title	Agency or Organization	Date Issued	Date Returned	Number of Copies
Administrative Staff	Direct Reports to Dean & Director	VIMS	4/25/13	N/A	1 each
Administrative Staff	Provost	W&M	4/25/13	N/A	1 each
Administrative Staff	V.P. Administration	W&M	4/25/13	N/A	1 each

BASIC PLAN

The Virginia Institute of Marine Science (VIMS or the Institute) is acutely aware of how all types of events can disrupt operations and jeopardize the ability to perform agency mission essential functions (MEFs), the limited set of functions that must be continued throughout or resumed rapidly after a disruption of normal activities. As such, the agency has adopted an all-hazards approach to continuity planning to ensure that regardless of the event, MEFs will continue to operate and/or be provided in some capacity. This approach includes preparing for natural, man-made, and technological hazards.

PURPOSE

The purpose of this Continuity Plan is to provide the framework for VIMS to continue or rapidly restore MEFs in the event of an emergency that affects operations. This document establishes the Institute's Continuity Program procedures for addressing three types of extended disruptions that could occur individually or in any combination:

- Loss of access to a facility or portion of a facility (as in a building fire or flood);
- Loss of services due to equipment or systems failure (as in telephone, electrical power, or information technology system failures); and
- Loss of services due to a reduced workforce (as in pandemic influenza, incidents in which employees are victims or incidents that prohibit employees from reporting to the workplace).

This plan details procedures for implementing actions to continue the following MEFs:

MEF #1: Research in Marine Science

MEF #2: Advisory Service

MEF #3: Education

This Continuity Plan is **not** an emergency response plan. It is a recovery plan that works as a companion plan with the Emergency Operations Plan of the Virginia Institute of Marine Science. The Continuity Plan provides a framework designed to minimize negative impact to operations and allow for rapid recovery from an event which may or may not cause the activation of emergency response or incident action plans.

SCOPE AND APPLICABILITY

This plan applies to the operations, and resources necessary to ensure the continuation of the Virginia Institute of Marine Science's MEFs. This plan applies to agency personnel (including faculty and students) in all departments and all locations where MEFs and their supporting functions are conducted.

This Continuity Plan supports the performance of MEFs from alternate locations, with a reduction in workforce, or during a loss of services resulting from equipment or systems failure. The Continuity Plan does not apply to temporary disruptions of service, including minor IT system or power outages or any other scenarios where MEFs can be readily restored in the primary facilities. This plan provides for the resumption of MEFs, continuity of management, and decision-making authority if senior leadership is unavailable. This Continuity Plan can be activated during duty and non-duty hours, both with and without warning.

SITUATION OVERVIEW

The following situations impact the Virginia Institute of Marine Science's continuity planning efforts:

- The main campus of VIMS is located in Gloucester Point, Gloucester County, Virginia by the York River. Gloucester Point is a suburban area with numerous small businesses. VIMS sits at the northern terminus of the George P. Coleman Bridge, a toll facility that is the only crossing of the York River. Disruption of traffic flow across the Bridge necessitates a detour of approximately 50 miles. State Route 17, the primary highway through Gloucester County crosses the campus, separating the Boat Basin/Lower Campus from the larger Main/Upper Campus.

- VIMS has campuses at two other locations: the Eastern Shore Laboratory in Wachapreague, Accomack County, on Virginia's Eastern Shore and the Kauffman Aquaculture Center in Topping, Middlesex County, Virginia adjacent to Locklies Creek, very near the Rappahannock River. This Continuity Plan primarily is concerned with the Gloucester Point Campus, although the secondary campuses are included in the plan's overall scope.

- The vast majority of the Institute's approximately 450 faculty, staff, and students are employed on the main campus. At any time there may be several visitors and contractors on campus and on some occasions there may be fifty or more additional persons attending meetings or seminars. The Eastern Shore Laboratory has a resident staff of about a dozen but frequently hosts individual visiting scientists or students and on occasion groups of

two dozen or more. The Kauffman Aquaculture Center has a resident staff of one and rarely more than a half dozen persons on site.

- The Boat Basin area of the Gloucester Point Campus and the Eastern Shore Laboratory both are on low ground immediately adjacent to tidal waters and are at risk of flooding during coastal storms.

- As noted above, State Route 17 which runs through the Gloucester Point Campus is a major transportation artery along which many hazardous materials are transported. To date, there have no been significant haz-mat incidents in the immediate proximity of the campus.

PLANNING ASSUMPTIONS

This plan has been developed based on the following assumptions:

- The Virginia Institute of Marine Science has considered its mission, statutory requirements, and emergency support function roles outlined in the Commonwealth of Virginia Emergency Operations Plan (COVEOP) and has identified MEFs and appropriate recovery time objectives (RTOs) to support these functions.

- VIMS's MEFs are susceptible to a full range of hazards (man-made, natural, and technological).

- VIMS acknowledges that its MEFs may be disrupted by the loss of access to a facility (or portion of a facility), the loss of services due to equipment or system failure, the loss of services due to a reduction in the workforce, or any combination thereof.

- A disruption of MEFs may occur during or after normal operating hours.

- VIMS has identified key personnel and alternates required for the implementation of this Continuity Plan.

- VIMS leadership will exercise its authority to implement the Continuity Plan in a timely manner when confronted with events that disrupt the agency's MEFs.

- Executive leadership and key personnel may be required to relocate to an alternate facility during a continuity event.

- Equipment and software systems may become unavailable. Key personnel and alternates responsible for performing MEFs have been trained on manual workaround procedures where such procedures are feasible and appropriate.

- Leadership has been cross trained so that specific responsibilities under the Continuity Plan are not dependent upon any single individual;
- VIMS will implement teleworking as an alternate work arrangement, if appropriate. As very few members of the campus community have formal teleworking arrangements in place, oral authorization and approval for teleworking may be granted by individual unit supervisors for the duration of the continuity activity.
- In the event of an emergency, VIMS may need to rely on services of other agencies and/or organizations for recovery. Specifically, many administrative functions may revert to appropriate offices at the Williamsburg campus of the College of William & Mary (W&M).
- When properly implemented, this Continuity Plan will reduce or prevent disaster-related losses and allow for timely recovery operations.

OBJECTIVES

The objectives of the Virginia Institute of Marine Science's Continuity Plan are outlined below.

- Ensure that VIMS can perform its MEFs under all conditions.
- Ensure that VIMS can perform its MEFs within established recovery time objectives and continue for a period of up to 30 days or until normal operations can be resumed.
- Provide for the safety and well-being of the Institute's personnel, contractors, and visitors while enabling the agency's continued operations during any event or disruption to operations.
- Reduce or mitigate disruptions to operations.
- Minimize damage and loss to property, records, systems, and equipment.
- Achieve the Institute's timely and orderly recovery and reconstitution from an emergency.
- Ensure and validate continuity readiness through a dynamic and integrated continuity test, training, and exercise program.

ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

Table 3
Continuity Implementation Responsibilities

Position	Responsibility
Dean and Director	• Provide strategic leadership and overarching policy direction for the Continuity Program. • Implement the Continuity Plan when necessary or when directed to by a higher authority. • Consult with and advise appropriate officials during implementation of the Continuity Plan. • Oversee and coordinate activities between the Continuity Coordinator and Reconstitution Manager.
Continuity Coordinator	• Coordinate the implementation of the Continuity Plan and initiate appropriate notifications to internal and external contacts. • Communicate and coordinate with persons responsible for implementation of the Institute's Emergency Operations Plan to ensure a smooth and timely transition from emergency actions and operations to continuity operations. • Work closely with the Reconstitution Manager to ensure a smooth transition from continuity operations to reconstitution operations.
Key Personnel including but not limited to Chief Financial & Administrative Officer, Dir. of Facilities Mgt, Assoc. Dean for Research and Advisory Services, Assoc. Dean for Academic Studies, Chief Information Officer and Director of ITNS, and Dir. of Communications	• Be prepared to deploy and support the performance of agency MEFs in the event of a Continuity Plan implementation. • Ensure that family members of VIMS faculty, staff, and students are prepared for and taken care of in an emergency situation.
Reconstitution	• Coordinate and oversee the reconstitution process.

Position	Responsibility
Manager	• Ensure that primary facilities can support the performance of MEFs • Develop a time-phased plan to ensure that functions are restored in a manner which minimizes downtime. • Work closely with the Continuity Coordinator to ensure a smooth transition from continuity operations to reconstitution operations. • Communicate priorities, schedule, status, etc. to the campus community and others as appropriate
VIMS Employees and Faculty	• Monitor Institutional communications for guidance or instructions during the event. • Know and understand their roles in a continuity environment. • Assist as requested in various activities. • Ensure that family members are prepared for and taken care of in an emergency situation.

ORDERS OF SUCCESSION

Specification of the orders of succession for key positions within VIMS is an important step in ensuring effective leadership and continuity of leadership during an emergency. In the event an incumbent is incapable or unavailable to fulfill his/her essential duties, the pre-designation of successors ensures there is no lapse in executive leadership. Authority shall return to the incumbent when that person is capable of resuming essential duties or a permanent replacement has been chosen in accordance with agency policy. The Institute's orders of succession and method(s) of notification to successor personnel are:

Table 4
Orders of Succession

Position	Notification Method	Successor #1	Successor #2	Successor #3
Dean and Director	In person, telephone, cell phone, or email	Assoc. Dean for Research and Advisory Services	Assoc. Dean for Academic Affairs	Chief Operations Officer

Position	Notification Method	Successor #1	Successor #2	Successor #3
Assoc. Dean for Research and Advisory Services	In person, telephone, cell phone, or email	Dean and Director	Assoc. Dir. for Advisory Services	Dir. Sponsored Programs
Assoc. Dean for Academic Studies	In person, telephone, cell phone, or email	Dean and Director	Chair of Academic Council	Registrar & Assistant to the Associate Dean of Academic Studies
Chief Financial & Administrative Officer	In person, telephone, cell phone, or email	Dean and Director	Assoc. Dean for Academic Affairs	Executive Budget Administrator
Chief Operations Officer (Continuity Officer)	In person, telephone, cell phone, or email	Assoc. Dean for Research and Advisory Services	Chief Financial & Administrative Officer	Assoc. Director of Advisory Services
Dir. Facilities Management	In person, telephone, cell phone, or email	Assistant Dir. Facilities Management	Chief Operations Officer	Chief Financial & Administrative Officer Senior
Chief Information Officer and Director of Information Technology and Network Services	In person, telephone, cell phone, or email	Manager, Client Support	Infrastructure Services Architect	Instructional Technologist
Dir. Safety & Environmental Programs	In person, telephone, cell phone, or email	Chemical Hygiene Officer	Chief Operations Officer	Workers' Compensation Coordinator
Dir. Communications	In person, telephone, cell phone, or email	Outreach Coordinator	Dean and Director	Chief Financial & Administrative Officer
Dir. Sponsored Programs	In person, telephone, cell phone, or email	Chief Financial & Administrative Officer	Assoc. Dean for Research and Advisory Services	Senior Staff
Dept. Business Managers	In person, telephone, cell phone, or email	Dept. Chair	Business Manager from Another Dept.	Executive Budget Administrator

DELEGATIONS OF AUTHORITY

Generally, pre-determined delegations of authority will take effect when normal operations are disrupted and terminate when these have resumed. The Virginia Institute of Marine Science has identified the following delegations of authority:

Table 5
Delegations of Authority

Authority (Function)	Type of Authority	Position Holding Authority	Delegation to Position	Triggering Conditions	Limitations
Reply to subpoenas and similar documents	Signatory	Dean and Director	1) Assoc. Dean for Research and Advisory Services, 2) Chief Financial & Administrative Officer	Unavailable	None. Delegation ends when incumbent returns
Sign or endorse proposals for research grants and contracts and similar documents	Signatory	Co-signers 1) Assoc. Dean for Research and Advisory Services, 2) Director of Sponsored Programs	Chief Financial & Administrative Officer	Unavailable	None
Authorize purchases	Purchasing	Dept. Business Managers	Authorized purchasing agents in other departments	Unavailable	Delegation ends when incumbent returns; must coordinate Office of Finance

CONCEPT OF OPERATIONS

A continuity plan must be thorough and up to date and able to be implemented without warning. As such, the Virginia Institute of Marine Science has developed a concept of operations which describes the implementation of the Continuity Plan.

This plan can be fully implemented within established recovery time objectives and capable of sustaining operations for up to 30 days or until normal operations can be resumed.

Phase 1- Preparedness

The Virginia Institute of Marine Science participates in readiness and preparedness activities to ensure that it can continue to perform MEFs in an all-hazard risk environment. This is accomplished through various means, including the use of "go-kits" by selected key personnel, regular training and exercises of the Continuity Plan (outlined in the Training and Exercise Section of this document), the development of human capital management policies that support the Institute's faculty, staff, and students, and the monitoring of government intelligence reports or notices by several senior administrators.

Professional Go-kits

Key personnel and senior administrators at VIMS have the responsibility to create and maintain go-kits. Go-kits should include standard operating procedures, emergency plans, operating orders or regulations, and other relevant guidance. Other documents and materials that might be included in a go-kit include:

- Laptop or tablet computer that includes electronic copies of the Continuity Plan and similar documents
- Current contact list of key personnel, external partners, and others as appropriate
- General office supplies
- Backup communication devices if available.
- Compact discs or thumb drives
- Critical equipment inventory
- Information about alternate facility locations including contact information and access information.

Human Capital Management

The Institute's key personnel should cross-train back-up personnel capable of supporting MEFs. Frequency of cross-training shall be at the discretion of the unit manager, but should occur as often as necessary to ensure proficiency of MEF performance. All cross-training should be documented.

Teleworking is recognized as an alternative method to perform some agency MEFs during a continuity event. Therefore, key personnel may be authorized to telework during activation of the Continuity Plan at the discretion of the department or division manager. Regulations outlined in the agency telework policy shall be adhered to at all times except that the unexpected sudden onset of a continuity event may necessitate that some individuals who do not have standing authorizations for teleworking may be allowed to work from remote locations, potentially including private homes, for the duration of the event.

During activation of the Continuity Plan, VIMS will attempt to contact all faculty, staff, and students, potentially using all or part of the Institute's emergency/mass notification system. Depending upon the nature of the continuity event, VIMS will attempt to determine the status of all individuals; this would be performed at the unit level. Additionally, if appropriate for the incident, VIMS will provide information on issues such as pay, leave, staffing, and work to all members of the campus community.

The Institute will suggest to its faculty, staff, and students that they prepare their own a family support plans to increase their own personal and family preparedness. That suggestion will include information about guidance available at http://www.vaemergency.com/ReadyVirginia.

Phase 2- Activation and Notification

The following matrices are intended to serve as guides for implementation of the Continuity Plan. It is important to note that while an effort has been made to outline implementation levels and notification guidelines in these matrices, they are guides only and do not limit the ability of the Institute's senior administrators to make decisions and take necessary actions in the event of an emergency.

The members of the upper level(s) of administration will stay informed of the threat environment using all available means, including government intelligence reports or notices, national/local reporting channels, and media outlets. Activation decisions by senior administration will be made after evaluating all available information relating to:

- Direction and guidance from higher authorities
- National Terrorism Advisory System (NTAS) alerts, instructions, and guidance or similar communication from state or local authorities, including local emergency management agencies.
- National Weather Service Alerts
- The health and safety of personnel
- The ability to execute MEFs

- Intelligence reports
- The potential or actual effects on communication systems, information systems, office facilities, and other essential equipment
- The expected duration of the emergency situation.

The Chief Operations Officer serves as the Continuity Coordinator. In that role, the Chief Operations Officer will activate this Continuity Plan and oversee its utilization and the implementation the Plan's procedures. It is anticipated that the Chief Operations Officer will discuss the situation with the Dean and Director before activating the Plan. Ultimately, the responsibility for assuring continuity of the Institute's operations rests with the Dean and Director

Table 6
Activation Decision Matrix

Level of Emergency	Category	Potential Event	Impact on the Ability to Perform MEFs	Decisions
I	Alert	An event with notice, such as a severe weather, especially tropical and major extra-tropical storms, forecast, to impact area; scheduled software upgrades to essential systems or essential equipment maintenance/upgrades.	An actual or anticipated event that might have an adverse impact on any portion of the agency, staff, or equipment/ systems for a period of time that exceeds recovery time objectives, but does not require any specific response beyond what is normally available.	No Continuity Plan implementation required.
II	Stand-by	Coastal storm approaching but several days away; system or equipment failure expected to last less than 24 hours; possible public health emergency reported with minimal impact to staff.	An actual or anticipated event estimated to have minimal impact on operations that might require minimal assistance beyond what is normally available.	Limited Continuity Plan implementation depending on individual department requirements.
III	Partial Implementation	Small fire localized to one wing or floor of a building; system or equipment failure expected to last more than one day; public health emergency declared with moderate impact to staff.	An actual event estimated to disrupt the operations of MEFs for more than the established recovery time objectives or 24 hours.	Partial Implementation of the Continuity Plan.

Level of Emergency	Category	Potential Event	Impact on the Ability to Perform MEFs	Decisions
IV	Full Implementation	Substantial damage to the physical plant such as from a tornado or major coastal flood; system or equipment failure expected to last for an extended period of time; public health emergency declared with significant staff impact.	An actual event that significantly disrupts the operations of multiple MEFs for a period of time exceeding the MEF recovery time objectives.	Full implementation of the Continuity Plan approved by the executive leadership.

Table 7
Activation Notification Matrix

Level of Emergency	Category	Executive Leadership Notifications	Continuity Coordinator Notifications
I	Alert	Potentially impacted department(s) alert(s) senior administration, , of the situation and requests assistance as applicable. Administration notifies the campus community as appropriate. Note the Continuity Coordinator is part of Administration and likely would be the point-of-contact for the concerned department.	The Continuity Coordinator notifies: – Key personnel of the alert and that they are to ensure go-kits, emergency contact information, and manual workaround procedures are up to date, and/or ensure the availability and functionality of telework resources. – Other members of the Emergency Management and Security Team.
II	Stand-by	Impacted department alerts administration of situation and requests assistance as applicable. Administration reminds the campus community of the potential situation.	The Continuity Coordinator notifies: – Key personnel of the developing situation and indicates that they ensure go-kits, emergency contact information, and manual workaround procedures are up to date, and/or ensure the availability and functionality of telework resources. – Other members of the Emergency Management and Security Team.
III	Partial Implementation	Impacted department alerts administration of situation and requests assistance as applicable. Administration informs impacted units that human and material resources are being redirected in response to the situation.	The Continuity Coordinator notifies: – Key personnel and provides partial implementation instructions. – Other members of the Emergency Management and Security Team. – The Emergency Manager of William & Mary of the situation. – The campus community and provides guidance as appropriate.
IV	Full Implementation	• Impacted department alerts administration. • Administration notifies: – The Provost and others as appropriate at William & Mary – Impacted units	The Continuity Coordinator notifies: – Key personnel and provides instructions. – Other members of the Emergency Management and Security Team. – Human Resources (to provide guidance to agency personnel) – Communications Department – Others as appropriate.

In addition to the notifications outlined in the matrices, the following notifications may need to be made by the Continuity Coordinator or designee(s) within 12 hours of activation:

- Notifying currently active vendors, contractors, and suppliers of the plan activation and providing direction on activities that will need to be initiated, altered, or suspended as a result.
- As appropriate and necessary, notifying the primary point of contact for surrounding organizations, jurisdictions, and interdependent agencies of the plan activation and any potential consequences or planned alternate actions that might be required until normal operations can be restored.
- Once the situation has been fully assessed, notifying agency personnel, contractors, suppliers, vendors, and interdependent agencies of the expected duration of the event.

Phase 3- Continuity Operations

Upon activation of the Continuity Plan during regular duty hours, key personnel will continue to perform MEFs, if possible, until ordered to cease operations by the Dean and Director or another administrator appropriately authorized by the Dean and Director. At that time, MEFs and other work be performed in the manner prescribed by the unit head including transfer to alternate facility(ies).

Appendix D of this Plan provides specific information on the activities necessary to conduct the Institute's MEFs. Most of this information is contained in Tables D-1-1 through D-2-18 which provide ordered descriptions of the MEFs and their associated Business Process Analyses (BPAs).

If the decision to close part or all of campus is made during non-duty hours, that information will be communicated to the campus community at large by the various means described elsewhere in this document. Depending on the nature of the continuity event, if it is determined that there is a need to transfer MEFs and other work to alternate facilities, senior personnel may have to arrive at the alternate facilities early in order to be sure that the site is ready. These preparatory activities may include some or all of the following:

- Ensuring infrastructure systems, such as power and HVAC are functional
- Preparing check-in duty stations for key personnel and administration
- Fielding telephone inquiries from faculty, staff, and students
- Communicating work status to faculty, staff, and students.

If the decision to perform MEFs and other work via telework or using a reduced workforce scenario is made, key personnel will:

- Heed all applicable instructions
- Retrieve pre-positioned information and activate applicable systems or equipment
- Begin performing agency MEFs and other work as appropriate
- Keep the Continuity Coordinator or designee informed of status and capability.

During continuity operations, VIMS may need to acquire additional personnel, equipment, and supplies on an emergency basis to sustain until normal operations can be resumed. The Institute maintains the authority for emergency acquisition. Authority for these actions resides with the Chief Financial & Administrative Officer. Emergency purchases that circumvent the normal purchasing process must be cleared with Chief Financial & Administrative Officer or the Senior Financial and Administrative Officer.

Phase 4- Reconstitution

The Chief Operations Officer, after consulting with the Dean and Director, will appoint a Reconstitution Manager to oversee the return to normal operations and the post-incident clean-up. The nature of the specific continuity incident will be a major factor in determining the best qualified person for the position.

The Director of Facilities Management in consultation with the Reconstitution Manager, when appropriate, is responsible for initiating and coordinating operations to salvage, restore, and recover the Institute's primary operating facilities, overseeing the repair or restoration of systems or equipment. The Director of Facilities Management must release for normal use facilities that were closed for the continuity event before faculty, staff, and students may return to the facilities. It should be noted that in certain circumstances, reconstitution to the primary operating facility may require approval from local, State, or Federal law enforcement, emergency service, or building approval agencies.

During continuity operations, the Reconstitution Manager or designee must obtain the status of the facilities, systems, and/or workforce affected by the event. Upon obtaining the status of the facility, systems, or workforce, the Reconstitution Manager will estimate how much time is needed to repair the affected facility or systems, acquire a new facility or systems, or achieve workforce recovery. These determinations may be made in conjunction with appropriate offices at the College of William & Mary including, but not limited to, Human Resources Management and the Building

Official, and the Commonwealth's Department of General Services. Reconstitution procedures will commence when the Dean and Director or other authorized person ascertains that the emergency situation or disruption has ended and is unlikely to reoccur. Once the appropriate authority has made this determination, in coordination with other applicable authorities, one or more of the following options may be implemented, depending on the situation:

- If the disruption was caused by a facility related event, the Reconstitution Manager may conduct security and safety assessments to determine building suitability.
- Senior administration notifies the campus community that the threat of, or actual emergency, no longer exists and provides instructions for resumption of normal operations. Announcement is disseminated via established notification procedures.
- Each department or similar administrative unit will designate a reconstitution point-of-contact, most likely the Business Manager, to work with the Reconstitution Manager and to update personnel on developments regarding reconstitution.
- The Reconstitution Manager and/or the Continuity Coordinator communicates the reconstitution schedule to personnel, contractors, agency partners, and other key contacts (local jurisdictions, vendors, etc.), as applicable.
- The Reconstitution Manager coordinates with the Chief Information Officer/Director of Information Technology and Network Services and/or contractors to verify that systems, communication, and other required capabilities are available and operational and that the agency is fully capable of accomplishing all MEFs and operations at the new or restored facility, with the new or restored systems, or with a new or restored workforce.
- When the action plan for reconstitution is implemented, the Reconstitution Manager or designee will supervise the return of personnel, equipment, and documents to normal operations whether at the primary or a permanent alternate facility location. The phase-down and return of personnel, functions, and equipment will follow the priority-based plan and schedule outlined for the specific event by the Reconstitution Manager. Transition and/or recovery of essential records, databases, or equipment, as well as other records not designated as essential will occur in a manner consistent with agency disaster recovery plans (including the Information Technology Disaster Recovery Plan).
- The Continuity Coordinator conducts a "hot wash" or review of its continuity operations and the effectiveness of its plans and procedures with executive leadership and key personnel. This information is used to complete an After Action Report (AAR) within three (3) months of the event as required by Executive Order #41 (2011). Information gathered during the AAR process should be used to develop an Improvement Plan (IP) to correct identified deficiencies.

MISSION ESSENTIAL FUNCTIONS (MEFs)

The Virginia Institute of Marine Science has identified three mission essential functions (MEFs) and the Recovery Time Objective (RTO) required for each function (Table 8).

Specification of the responsibilities of the Virginia Institute of Marine Science can be condensed to three Mission Essential Functions (MEFs) derived from the Institute's duties as outlined in the Code of Virginia and its status as the School of Marine Science of the College of William & Mary. The MEF's are 1) research in the marine sciences, 2) the provision of advice to agencies and officers of the Commonwealth of Virginia, the federal government, local government, non-governmental organizations, businesses, and private citizens, and 3) education in the marine sciences primarily on the graduate level but not excluding undergraduate college, K-12, and continuing education programs of various types.

The three MEFs relate to the Commonwealth Essential Functions #2 - Provision of Visible Leadership, #4 – Maintenance of Effective Relationships with Neighbors and Partners, and #7 Maintenance of Economic Stability. MEF #3 has a direct tie to the Institute's status as the School of Marine Science of the College of William & Mary.

Table 8
Mission Essential Functions (MEFs)

Mission Essential Function	Description	RTO
Provide advisory service in marine science and related areas	Provision of advice and technical information both proactively and in response to questions on the broad spectrum of marine issues to numerous entities of state, federal, local government, NGOs, and citizens.	< 6 hours
Conduct research in marine science	The performance of basic and applied research in all aspects of marine science including but not limited to fisheries sciences, biological sciences, geological oceanography/marine geology, and physical oceanography is one of the three MEFs of the Virginia Institute of Marine Science.	< 24 hours
Conduct educational programs	Conduct graduate classes in the many fields of marine science, and participate in aspects of primary, secondary, collegiate, and continuing education in topics related to the marine environment.	<7 days

PROGRAM MANAGEMENT AND MAINTENANCE

The senior administrators of the Virginia Institute of Marine Science including the Continuity Coordinator are responsible for managing and maintaining the Continuity Plan. While the Continuity Plan serves as the guide during activation and recovery, the Continuity Program provides the framework and structure to guide continuity planning.

Table 9
Program Management and Maintenance Responsibilities

Position	Responsibility
Dean and Director	• Designate and authorize a Continuity Coordinator to manage the agency Continuity Program. • Coordinate the efforts and activities of the Continuity Coordinator and Reconstitution Manager. • Ensure that orders of succession and delegations of authority are kept up to date • Promulgate the Continuity Plan • Ensure all appropriate agency components participate in continuity exercises
Continuity Coordinator	• Coordinate the development and documentation of all activities required for the agency to perform its MEFs during an event or other situation that disrupts normal operations. • Create a planning schedule and milestones for developing or updating continuity capabilities and obtaining plan approval. • Ensure that the agency Continuity Plan conforms to the most recent Virginia Department of Emergency Management template as required under Executive Order #41 (2011). • Coordinate and/or administer continuity awareness training for all agency employees and applicable contractors responsible for supporting activation of the Continuity Plan. • Maintain and update the Continuity Plan as outlined in Table 10 – Continuity Plan Maintenance Schedule. • Coordinate an annual continuity exercise and complete an After

Position	Responsibility
	Action Report (AAR). • In consultation with the Dean and Dirctor, Designate a Reconstitution Manager to oversee and coordinate reconstitution efforts. • Develop an Improvement Plan (IP) to correct deficiencies noted in the AAR and modify the Continuity Plan, if appropriate.
Reconstitution Manager	• Initiate, coordinate, and oversee operations to salvage, restore, and recover the agency's primary operating facility, systems or equipment, and/or workforce, or locate and prepare a new facility for the organization. • Establish an action plan for reconstitution and notify the Continuity Coordinator of the plan.
Key Personnel	• Have an approved telework agreement, if applicable. • Participate in continuity training and exercises as directed. • Be aware of their roles and be capable of performing their responsibilities in the event of plan activation. • Update contact information with the Continuity Coordinator for inclusion in the Continuity Plan as appropriate.
Agency Employees and Contractors	• Know and understand their roles in a continuity environment. • Understand the communication protocols to be used during a continuity event.

The Continuity Coordinator is responsible for maintaining and updating the Continuity Plan as indicated in Table 10.

Table 10
Continuity Plan Maintenance Schedule

Activity	Tasks	Frequency
Revise contact information for senior administrators and key personnel	• Confirm and update or correct contact information for senior administrators and key personnel.	Semiannually (January and July)
Plan update	• Review entire plan for accuracy and compliance with the most recent VDEM template as required by Executive Order #41, 2011. • Update plan to reflect organizational changes. • Incorporate lessons learned and changes in policy and philosophy.	Annually (prior to the April 1st annual submission to VDEM) or when organizational changes occur
Maintain orders of succession and delegations of authority	• Identify current incumbents. • Update rosters and contact information.	Semiannually (January and July)
Maintain alternate facility readiness	• Remind units to verify status of alternate facilities.	Annually
Verify the existence of an agency essential records program and identify the Program Manager	• Verify that essential records program includes provisions for monitoring the volume of materials, updating and/or removing materials, and materials distribution.	Annually or at the agency's discretion

TRAINING AND EXERCISES

To maintain the Institute's continuity capability, an all-hazard continuity training and exercise program has been established. Major components of this program include training all staff in their continuity responsibilities and conducting periodic exercises to test and validate continuity plans and procedures, systems, and equipment.

TRAINING

VIMS is dedicated to maintaining a continuity capability and as such has developed the following training schedule:

Table 11
Continuity Plan Training Schedule

Individual or Group to Receive Training	Type of Training	Individual to Provide Training	Training Frequency
New Personnel	Continuity Awareness Briefing (or other means of orientation)	Office of Safety and Environmental Programs	Within 60 days of hire
Senior Administrators and Key Personnel (Primary)	Continuity Plan Training (must minimally include individual Continuity Plan duties, mission essential functions, and orders of succession)	Continuity Coordinator	Annual awareness reminder or when plan changes occur
Key Personnel (Alternates)	Continuity Plan Training (must minimally include individual Continuity Plan duties, mission essential functions, and orders of succession)	Continuity Coordinator	Annual awareness reminder or when plan changes occur
	MEF Cross-training	Primary Key Personnel	Discretion of Dean and Director
Pre-delegated Authorities and Successors	Orders of Succession and Delegation of Authority Awareness	Continuity Coordinator	When delegations or successors change
	Continuity Plan Training (must minimally include individual Continuity Plan duties, mission essential functions, and orders of	Continuity Coordinator	Annual awareness reminder or when significant plan

Individual or Group to Receive Training	Type of Training	Individual to Provide Training	Training Frequency
	succession)		changes occur
Applicable Contractors	Continuity Plan Training (must minimally include individual Continuity Plan duties, mission essential functions, and orders of succession)	Continuity Coordinator	Annual awareness reminder or when significant plan changes occur
All Agency Personnel	Continuity Plan Training (must minimally include individual Continuity Plan duties, mission essential functions, and orders of succession)	Continuity Coordinator	Annual awareness reminder or when significant plan changes occur

Exercises are conducted to validate elements of the Continuity Plan, both individually and collectively. VIMS is committed to ensuring that realistic exercises are conducted, during which individuals and business units perform the tasks that are expected of them in a real event. Exercises will be conducted annually in accordance with Executive Order #41 (2011).

Exercise or Activation Evaluation

After each exercise activity and actual event, the Continuity Officer will prepare an After Action Report (AAR) for submission to the Dean and Director and to the VIMS Emergency Management and Security Team. The Team will review the AAR and develop an Improvement Plan (IP). The evaluation will identify systemic weaknesses and suggest corrective actions that will enhance preparedness and the effectiveness of future responses. When appropriate, the results will be incorporated into a formal improvement plan and, eventually, in revision of the Continuity Plan.

ACRONYMS AND DEFINITIONS

ACRONYMS

AAR	After Action Report
ASC	Analytical Services Center at VIMS
BIA	Business Impact Analysis
BPA	Business Process Analysis
CEF	Commonwealth Essential Function
CEMP	Crisis and Emergency Management Plan
COOP	Continuity of Operations
ECO	Emergency Coordination Officer
EMAC	Emergency Management Assistance Compact
EMAP	Emergency Management Accreditation Program
EAP	Emergency Action Plan
EOP	Emergency Operations Plan
FEMA	Federal Emergency Management Agency
FOIA	Freedom of Information Act
HSEEP	Homeland Security Exercise and Evaluation Program
IP	Improvement Plan
ITDRP	Information Technology Disaster Recovery Plan
ITNS	Information Technology and Network Services
MAS	Marine Advisory Service
MEF	Mission Essential Function
MOU	Memorandum of Understanding

N/A	Not Applicable
NTAS	National Terrorism Advisory System
NWS	National Weather Service
OSP	Office of Sponsored Programs
PBF	Primary Business Function
PI	Principal Investigator
RFP	Request for Proposal
RPO	Recovery Point Objective
RTO	Recovery Time Objective
SRL	Seawater Research Laboratory
SVAHS	Secretariat of Veterans' Affairs and Homeland Security
VIMS	Virginia Institute of Marine Science
W&M	College of William & Mary

DEFINITIONS

Activation – When all or a portion of the COOP plan has been put into motion. Activation may be full or partial.

After Action Report (AAR) – A report that summarizes and analyzes performance in both exercises and actual events. The report includes lessons learned, best practices, and an Improvement Plan (IP). The reports for exercises may also evaluate achievement of the selected exercise objectives and demonstration of the overall capabilities being exercised.

Alternate Facility – A location, other than the normal facility, used to process data and/or conduct mission essential functions (MEFs) in the event of a disaster.

Business Impact Analysis (BIA) – A method of identifying the effects of failing to perform a function or requirement. A BIA may be a useful tool in helping an agency identify some of its primary business functions.

Business Process Analysis (BPA) – A systematic method of identifying and documenting all of the elements necessary to accomplish each organizational MEF. The BPA ensures that the right people, equipment, capabilities, records, and supplies are identified and available where needed during a disruption so that MEFs can be resumed quickly and performed as required. The BPA is a method of examining, identifying, and mapping the functional processes, workflows, activities, personnel expertise, systems, data, partnerships, controls, interdependencies, and facilities inherent in the execution of the MEF.

Cold Site – An alternate site that is reserved for emergency use, but which requires the installation of equipment before it can support operations. Equipment and resources must be installed in such a facility to support the mission essential functions or primary business functions of an organization. Cold sites have many variations depending on their communication facilities, UPS systems, or mobility.

Continuity Coordinator – The individual that serves as the agency's manager for all continuity activities. The Coordinator has overall responsibility for developing, coordinating and managing all activities required for the agency to perform its mission essential functions during an event that disrupts normal operations. Selecting a Continuity Coordinator is the first step in the continuity planning process.

Continuity of Operations (Continuity) – The effort to ensure an organization can continue its mission essential functions across a wide range of potential events.

Continuity Plan – A set of documented procedures developed to provide for the continuance of mission essential functions during an emergency.

Continuity Program – An ongoing, cyclical model of planning, training, evaluating, and implementing corrective action for continuity capabilities.

Crisis and Emergency Management Plan (CEMP) – A plan normally utilized by colleges and universities that uses a systematic approach to respond to and manage emergencies or disasters that threaten the college or university's students, faculty, staff, and visitors. A CEMP does not encompass continuity planning and should be separate and distinct from the college or university's continuity plan. An emergency action plan (EAP) is the non-academic version of the CEMP.

Delegations of Authority – Identification of statutory or signatory authorities, those individuals holding the authority, and the alternate individuals responsible for assuming that authority should the primary be unavailable.

Emergency Action Plan (EAP) – The plan maintained by an agency or organization for responding to a wide variety of potential hazards. It describes how people and property will be protected, details who is responsible for carrying out specific actions, identifies available personnel, equipment, facilities, supplies, and resources, and outlines how all response actions will be coordinated. An agency or organization's EAP is separate and distinct from its continuity plan.

Emergency Coordination Officer (ECO) – The individual that serves as the communications liaison between the Secretariat of Veterans Affairs and Homeland Security (SVAHS), VDEM and their own agency pursuant to Executive Order #41 (2011).

Emergency Management Accreditation Program (EMAP) – An independent, non-profit organization with a standards-based voluntary assessment and peer review accreditation process for government programs responsible for coordinating prevention, mitigation, preparedness, response, and recovery activities for natural and human-caused disasters. Accreditation is based on compliance with collaboratively developed national standards and is open to all US states, territories, and local governments.

Emergency Management Assistance Compact (EMAC) – Congressionally ratified organization that provides form and structure to interstate mutual aid. During a disaster, it allows a state to request and receive assistance from other member states.

Emergency Preparedness – The discipline which ensures an organization or community's readiness to respond to an emergency or disaster in a coordinated, timely and effective manner.

Essential Records – Records, files, documents or databases, which, if damaged or destroyed, would cause considerable inconvenience and/or require replacement or re-creation at considerable expense. For legal, regulatory or operational reasons these records cannot be irretrievably lost or damaged without materially impairing the organization's ability to conduct business.

Facility – A location containing the equipment, supplies, and voice and data communication lines to conduct transactions required to conduct business under normal conditions.

Faculty – The teaching and administrative staff and those members of the administration having academic rank in an educational institution.

Federal Emergency Management Agency (FEMA) – The federal agency tasked with supporting citizens and first responders to ensure that as a nation, the United States works together to build, sustain, and improve its capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

Freedom of Information Act (FOIA) – A federal law, passed in 1966, which allows for the full or partial disclosure of previously unreleased information and documents under the control of government agencies.

Homeland Security Exercise and Evaluation Program (HSEEP) – A threat and performance-based exercise program developed by DHS that provides doctrine and policy for planning, conducting, and evaluating exercises. It was developed to enhance and assess terrorism prevention, response, and recovery capabilities at the federal, state and local levels.

Hot Site – An alternate facility that already has in place the computer, telecommunications, and environmental infrastructure to recover the mission essential functions disrupted by an emergency or disaster.

Hot Wash – A post-event meeting where executive leadership and key personnel discuss best practices of and potential improvements to the agency's overall preparedness.

Implementation Procedure Checklist – A list of the immediate actions to take once the continuity plan is implemented.

Improvement Plan (IP) – A list of action steps and resources required to correct a deficiency identified in an After Action Report, including the individual responsible for the actions and an estimated timeline for completion.

Information Technology Disaster Recovery Plan (ITDRP) – A set of documented procedures that identify the steps to restore organizations' IT systems and resources that support its primary business functions.

Key Personnel – Personnel designated by their division as critical to the resumption of mission essential functions.

Memorandum of Understanding (MOU) – A document that expresses mutual accord between two parties. To be legally operative, a memorandum of understanding must identify the contracting parties, spell out the subject matter of the agreement and its objectives, summarize the essential terms of the agreement, and be signed by the contracting parties.

Mission Essential Functions (MEFs) – The limited set of department and agency level government functions that must be continued throughout or resumed rapidly after a disruption of normal activities.

National Terrorism Advisory System (NTAS) – The system that replaces the color-coded Homeland Security Advisory System and provides timely, detailed information to the public, government agencies, first responders, airports and other transportation hubs, and the private sector. NTAS Alerts will only be issued when credible information is available. More information about NTAS may be found at http://www.dhs.gov/files/publications/ntas-public-guide.shtm.

National Weather Service (NWS) – A division of the National Oceanic and Atmospheric Administration (NOAA) that provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, and its adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy.

Office of Sponsored Programs (OSP) – The internal office at VIMS that oversees or manages the business aspects of the relationship between the funding agencies and PIs.

Orders of Succession – A list that specifies by position who will automatically fill a position once it is vacated. Orders of succession should be performed for positions of both executive leadership and key personnel.

Primary Business Function (PBF) – Specific supporting activities that an organization must conduct in order to perform its mission essential functions. Primary business functions are typically enablers that make it possible for an organization to perform its mission.

Principal Investigator (PI) – The individual, usually a faculty member or research scientist, with primary responsibility for work performed on a research grant or contract.

Promulgation – The process that officially announces/declares a plan and gives organizations both the authority and responsibility to perform their tasks.

Reconstitution – The process by which agency personnel resume normal business operations in a rehabilitated or new facility.

Reconstitution Manager – The individual responsible for all reconstitution activities. During an event, the Reconstitution Manager develops a plan and schedule for resuming normal operations and supervises the return of key personnel, essential records, and/or equipment.

Record Retention – Storage of historical documentation for a set period of time usually mandated by state or federal law or by the Internal Revenue Service.

Recovery – Recovery, in this document, includes all types of emergency actions dedicated to the resumption of mission essential functions and operational stability.

Recovery Point Objective (RPO) – The period of time between backups of essential electronic records in which data could be lost.

Recovery Time Objective (RTO) – The period of time in which systems, applications or mission essential functions must be recovered after a disruption of normal operations.

Request for Proposal (RFP) - An electronic or hard copy document issued by a funding agency asking for a formal response from interested scientists. The response is in the form of a thorough description of the research the respondent offers to conduct to address the issues raised in the RFP and the costs of so doing.

Risk – An ongoing or impending concern that has a significant probability of adversely affecting business continuity.

Risk Assessment/Analysis – A process or methodology for evaluating risk by determining: the probability and frequency of a hazard occurring, the level of exposure of people and property to the hazard, and the effects or costs, both direct and indirect, of mitigating or accepting this exposure.

Risk Management – The discipline which ensures that an organization does not assume an unacceptable level of risk.

Secretariat of Veterans' Affairs and Homeland Security (SVAHS) – The Commonwealth of Virginia's cabinet-level office that serves the Commonwealth's veterans, military, and military families, and oversees the Commonwealth's Homeland Security and all-hazards preparedness efforts.

Vulnerability – The susceptibility of an agency or organization to a hazard. The degree of vulnerability to a hazard depends upon its risk and consequences.

Warm Site – An alternate facility that is only partially equipped.

AUTHORITIES

The Virginia Institute of Marine Science falls within the governance of the College of William & Mary's Board of Visitors and as such follows college-wide policies and regulations. On June 30, 2007, Gene R. Nichol, as President of the College, approved and issued the College's *Continuity of Operation Statement of Purpose* establishing the College's philosophy and objectives in developing and implementing a comprehensive continuity of operations capability for all facets of the College's operation. That statement is as follows:

> *It is the responsibility of the College of William and Mary to ensure that each member of the campus community is provided a safe environment for both work and study, to respond appropriately to emergencies and disasters, and to ensure the execution of the College's mission and essential functions during and following any emergency. In support of this goal, this emergency contingency and continuity of operations plan has been developed to provide an organized, expeditious plan of action to prepare for and respond to major natural and man-made threats to the College's faculty, staff, students and its physical and intellectual assets.*

This Continuity Plan has been approved by the Dean and Director of the Virginia Institute of Marine Science and, to the best of our knowledge and intent, complies with the following rules and regulations:

- Executive Order #41 (2011)
- Code of Virginia § 44-146.18
- Virginia Information Security Standard (SEC 501-06)
- Library of Virginia, Records Retention and Disposition Schedule: General Schedule No. 111, Colleges and Universities Records, May 21, 2001.
- Federal Emergency Management Agency (FEMA) Federal Preparedness Circular (FPC) http://www.fema.gov/pdf/library/fpc65_0604.pdf

REFERENCES

- Virginia Department of Emergency Management Continuity Plan Template, November 2011, Version 4.0
- Commonwealth of Virginia Emergency Operations Plan, September 2011
- Emergency Management Accreditation Program (EMAP) Standards, 2010
- FEMA's Continuity Guidance Circular 1 (CGC 1), January 21, 2009
- FEMA's Continuity Guidance Circular 2 (CGC 2), July 22, 2010
- Homeland Security Exercise Evaluation Program (HSEEP) guidelines found at ***www.hseep.dhs.gov***.
- U. S. Department of Homeland Security Continuity of Operations Plan Template, May 2010
- Virginia Institute of Marine Science Policy and Procedure Documents
- Virginia Institute of Marine Science Emergency Operations Plan

APPENDIX A – KEY PERSONNEL RAPID RECALL LIST

This rapid recall list includes contact and telework information for key personnel tasked with responsibilities during a disruption to agency operations or services. VIMS faculty, staff, and students not included on this list should follow instructions provided by the Institute during an activation of the Continuity Plan.

Table A-1
Key Personnel Rapid Recall List

Employee Name	Title / Division	Email Address	Work Telephone #	Cellular or Pager #	Home Telephone #	Approved Telework Agreement	Mission Essential Function (MEF)
John T. Wells	Dean and Director	wells@vims.edu	804-684-7102 or 804-684-7909	804-815- 1336	757-258- 0438	N/A	All
Mark W. Luckenbach	Associate Dean for Research and Advisory Services	luck@vims.edu	804-684-7108	757-709-9595	757-220-4685	N/A	All
Linda C. Schaffner	Associate Dean for Academic Affairs	linda@vims.edu	804-684-7105 or 804-684-7704	804-815-1120	804-642-6974	N/A	Education Research
Joseph Martinez	Chief Operations Officer also Continuity Coordinator	martinez@vims.edu	804-684-7271	757-876-0589	757-564-5825	N/A	All

Employee Name	Title / Division	Email Address	Work Telephone #	Cellular or Pager #	Home Telephone #	Approved Telework Agreement	Mission Essential Function (MEF)
Jennifer Latour	Chief Financial & Administrative Officer	jennifer@vims.edu	804-684-7103	804-815-6355	804-684-5949	N/A	All
David L. Malmquist	Director of Communications	davem@vims.edu	804-684-7011	804-654-0431	757-259-1151	N/A	All via PBFs
Thomas W. Grose	Director of Safety and Environmental Programs	twgrose@vims.edu	804-684-7152	804-815-5080	757-545-7794	N/A	All via PBFs
Richard T. White	Director of Facilities Management	rtwhite@vims.edu	804-684-7048	804-832-4159	757-869-7772	N/A	All via PBFs
Anna M. Fisher	Manager Telecommunications	afisher@vims.edu	804-684-7004	804-815-7752	804-642-9723	No	All via PBFs
Mark Rogers	Maintenance Supervisor	mrogers@vims.edu	804-684-7092	804-695-4148 757-268-5134	804-210-1695	No	All via PBFs
Gary F. Anderson	Chief Information Officer & Director for Information Technology and Network Services	gary@vims.edu	804-684-7080	804-815-2379	804-693-5223	No	All via PBFs
James Goins	Port Captain & Marine Safety Officer	goins@vims.edu	804-684-7055	804-815-8696		No	All via PBFs

Employee Name	Title / Division	Email Address	Work Telephone #	Cellular or Pager #	Home Telephone #	Approved Telework Agreement	Mission Essential Function (MEF)
Michael Kershner	Assistant Director, Facilities Management	kershner@vims.edu	804-684-7013			No	All via PBFs
Ronald T. Herzick (Ron)	Project Engineer	rherzick@vims.edu	804-684-7824		804-684-6855	No	All via PBFs
Patsy Powell	Security Guard Lead	Vimsg01@vims.edu	804-684-7300		804-642-1280	No	PBF only
James E. Brister (Jim)	Director Seawater Research Lab	jebrister@vims.edu	804-684-7255	281-668-4225	804-684-5213	No	Research
Margaret J. Fonner	Director of Sponsored Programs	mfonner@vims.edu	804-684-7029			No	Research
Lyle M. Varnell	Associate Director for Advisory Services	lyle@vims.edu	804-684-7764	804-509-0157	804-693-9513	No	Advisory Services
Susan R. Maples	Public Relations Staff	susan@vims.edu	804-684-7846		804-654-0435	No	All via PBFs
Paul M. Nichols	Chemical Hygiene Officer	pauln@vims.edu	804-684-7147	804-832-4158 804-684-9815		No	All via PBFs
Louise Lawson	Communications Console Attendant	llawson@vims.edu	804-684-7001		804-684-7344	No	All via PBF

Employee Name	Title / Division	Email Address	Work Telephone #	Cellular or Pager #	Home Telephone #	Approved Telework Agreement	Mission Essential Function (MEF)
P.G. Ross	(acting) Director Eastern Shore Laboratory	pg@vims.edu	757-787-5837	757-709-4058	757-442-3546	N/A	All
Carl T. Friedrichs	Chair, Department of Physical Sciences	cfried@vims.edu	804-684-7303	804-699-0015	757-645-7695	N/A	All
John E. Graves	Chair, Department of Fisheries Sciences	graves@vims.edu	804-684-7352	757-208-8820	757-890-0031	N/A	All
Kimberly S. Reece	Chair, Department of Environmental and Aquatic Animal Health	kreece@vims.edu	804-684-7407	804-832-6735	757-868-8772	N/A	All
Kenneth A. Moore	Chair, Department of Biological Sciences	moore@vims.edu	804-684-7384	804-695-6931	804-693-2746	N/A	All
Troy W. Hartley	Director Virginia Sea Grant Program	thartley@vims.edu	804-684-7248	804-832-7463	757-345-0877	N/A	Research Advisory Services
Standish K. Allen, Jr. (Stan)	Director Aquaculture Genetics & Breeding Technology Center	ska@vims.edu	804-684-7710	804-815-4170		N/A	All

Employee Name	Title / Division	Email Address	Work Telephone #	Cellular or Pager #	Home Telephone #	Approved Telework Agreement	Mission Essential Function (MEF)
Carlton H. Hershner, Jr. (Carl)	Director Center for Coastal Resources Management	carl@vims.edu	804-684-7387	804-815-1757	804-694-0391	N/A	All
Thomas J. Murray	Associate Director for Advisory Services	tjm@vims.edu	804-684-7190	804-695-7580		N/A	Advisory Services

APPENDIX B - ALTERNATE FACILITIES

The Virginia Institute of Marine Science is acutely aware that some situations might require temporary (or permanent) relocation of some activities due to loss of access to some (or all) of the Institute's facilities. The most likely case would be the temporary loss of an individual building or part of a building; however an event such as the campus being hit by a large tornado could damage or destroy multiple buildings on the 40 acre campus. The three MEFs and several PBFs are performed by numerous, separate operational and administrative units within the Institute's organizational structure. Several of those individual units are distributed through more than one building or facility. The specific facility requirements of some research units can change with some rapidity. Additionally, some PBFs, *e.g.* Human Resources and Payroll, operate on the VIMS campus as extension offices of the unit's central location on the Williamsburg campus of the College of William & Mary. These circumstances render the traditional format of specifically designated Alternate Facilities with formal MOUs nearly unworkable. The following paragraphs describe some of the arrangement for the use or sharing of alternate facilities. Finally, some work, such as writing and library-based research can be conducted from essentially any facility that provides a serviceable internet connection.

In all situations where access to an individual building is lost, the first option is to share or retask other appropriate space on campus. Sharing some facilities likely would require adjusting the normal duty hours of the units making joint use of the space. Depending on the specifics of the continuity event, these arrangements could be managed within an individual department or on an institutional level through coordination amongst the Principal Investigators, Department Chairs, the Associate Dean for Research and Advisory Services, and the Chief Operations Officer. Functions that prior to the continuity event were extension offices from W&M would revert to their Williamsburg facilities. If those facilities also were lost to use, the VIMS sub-function would relocate according to the College's Continuity Plan. None of these situations would require the existence of MOUs.

Laboratories are the most difficult facilities to relocate as the work often depends upon specific, highly technical equipment that is far too expensive to maintain duplicate instrumentation in unused reserve. Any extended disruption to funded research would require communication with the funding agency. Where reasonably feasible, the displaced researchers would either share other facilities on campus, working to the best extent allowable, or would suspend work until the original lab could be returned to service. A major loss of access in terms of time or actual loss of equipment would necessitate making *ad hoc* arrangements at other universities and research agencies across the nation or world as was the case with New Orleans based researchers in the wake of Hurricane Katrina. Individual researchers are aware of and often have working relationships with other researchers performing similar work and have a strong, positive history of offering and providing assistance, including use of facilities, to one another. The regional, national, and international

marine research communities have demonstrated their willingness to assure the continuity of research efforts that have been disrupted by the loss of facilities. [Following Hurricane Katrina in 2005, The Southern Association of Marine Laboratories (SAML), of which VIMS is an active member, issued a call for housing for displaced marine scientists. More offers for office and laboratory space were received than were needed.] Again, the number and range of on-going research programs and projects at VIMS makes it extremely difficult to devise specific alternate facility plans. Because of the distributed character of activities on campus, many of the separate functional units maintain their own relocation/alternate facility plans.

The Williamsburg Campus of the College of William & Mary, the Institute's "parent" agency, is the site to which all or most administrative functions and many teaching and research functions would relocate should there be the need. Aside from the functions that have a "home" office on the Williamsburg campus, the specific buildings and rooms to which functions would relocate would have to be determined on an *ad hoc* basis depending on the character of the needs of the moment. Because driving directions from the VIMS campus at Gloucester Point to the College in Williamsburg are common knowledge as there is daily traffic between the them, it is not necessary to provide maps or written directions.

Should the Seawater Research Lab (SRL) be lost, there are very few options. If environmental conditions, primarily salinity, permitted, then some of the work might be able to be transferred to the new facility at the Eastern Shore Laboratory, or, less probably, to the Kauffman Aquaculture Center. Similarly, disruptions at those facilities might be able to be accommodated in the SRL at Gloucester Point. As these would be internal accommodations, MOUs are not necessary. The SRL is a unique regional facility and the character of the research conducted within it effectively precludes the ability to move on-going experiments to other locations.

Office-based activities that did not automatically transfer to the Williamsburg campus would be continued in any of several ways depending upon the specifics of the situation. The first option is temporary cross-campus relocation. This would involve utilizing existing, temporarily empty offices and repurposing part or all of facilities such as the Computer User Room, the William J. Hargis, Jr. Library, and some classrooms. Some work could be conducted from home or other non-standard locations. If this were the case, some individuals would need to obtain formal authorization to work from home. (Having such documents universally in place in anticipation of a disruption would be unduly cumbersome.) If the disruption were to be of a longer duration, the Institute would seek to rent/lease mobile offices for use on campus.

VIMS has a demonstrated history of successful and timely response to the loss of facilities. In 2003 when office space was lost due to tidal flooding accompanying Hurricane Isabel, mobile offices were on site soon after the area was safe and operations continued with minimal disruption. Following complete loss of a building at the Eastern Shore Laboratory to fire in the late fall of 2010, arrangements were promptly made to have rented, temporary structures brought to the site to accommodate needs that could not be absorbed elsewhere on campus.

APPENDIX C - ESSENTIAL RECORDS, SYSTEMS, AND EQUIPMENT

The Virginia Institute of Marine Science realizes that essential records, systems, and equipment are critical to the agency's ability to perform MEFs. Therefore the agency has taken safeguards to protect these essential records, systems, and equipment and to ensure their availability in a continuity environment.

This Continuity Plan serves to safeguard electronic essential records in combination with the Institute's Information Technology Disaster Recovery Plan (ITDRP). There are many different types of critical records that are created in varying formats. Similarly, there are a great many different pieces of critical equipment and infrastructure that range from the campus-wide communications systems to individual pieces of highly technical laboratory equipment. It would be exceptionally difficult to list and describe each category of document or piece of equipment or infrastructure let alone fit the many specifics into the tabular format (Tables C-1 and C-2). The following text and the exemplar table entries should server to describe the methods and techniques used at VIMS to assure the continuity and physical security of documentation and the reliability of infrastructure and technical equipment. Additionally, some sets of critical information, *e.g.* payroll and human resources, is managed at and by W&M and is not within the control of VIMS.

The critical records relating to the Advisory Service MEF generally fit into wither of two categories: 1) reports and copies of delivered testimony and 2) a catalog of individual advisory contacts. Most items of category 1 were created in and are stored as electronic media, although many also exist on paper. The catalog of contacts is an electronic database. Most of the paper records are in the individual office files of the person providing the advisory service. In some instances, such as copies of testimonies provided to the General Assembly, additional copies may be in files maintained by administration. Electronic files are maintained on the desk-top computers of the individuals (and in some instances with copies in administrative offices). Individuals are provided accesses to network based, shared computer drives for backing-up the individual computer systems. The network drives, in turn, are backed-up on a regular schedule by ITNS with both on and off campus copies. ITNS has established remote off-site storage of back-up files at James Madison University, most probably at another institution of higher education. Additionally, some individuals maintain external hard-drives for the purpose of having a local back-up copy of their computer files. Electronic files on computers in central administrative offices regularly are backed-up to the shared network drives. At present, the recovery point objective for files on the network is seven days (weekly system back-up).

The critical records relating to the Education MEF primarily are electronic in form, although some parts of student records are on paper. The paper records are maintained in the secure files in the offices of the Associate Dean for Academic Affairs including the offices of staff. Some aspects of the

electronic records, *e.g.* student transcripts, are maintained by W&M, although in many instances, there are duplicate electronic files on the shared, network drives at VIMS, as described above. Other electronic files, such as courses offered and catalog information, are on the VIMS shared network drives. The network drives, in turn, are backed-up on a regular schedule by ITNS with both on and off campus copies. ITNS has established remote off-site storage of back-up files at James Madison University, most probably at another institution of higher education. At present, the recovery point objective for files on the network is seven days (weekly system back-up).

Critical records for the Research MEF are much more difficult to describe or categorize. Administrative files are electronic and are on both desk-top systems in the OSP and on the shared network drive. Files pertaining to individual research activities generally are the responsibility of the PI. Many of these files are electronic and are created on desk-top systems. Researchers are provided accesses to network based, shared computer drives for backing-up the individual computer systems. The network drives, in turn, are backed-up on a regular schedule by ITNS with both on and off campus copies. ITNS has established remote off-site storage of back-up files at James Madison University, most probably at another institution of higher education. At present, the recovery point objective for files on the network is seven days (weekly system back-up). Additionally, some researchers maintain external hard drives so as to have a local back-up.

Some original data are recorded in laboratory notebooks. It is the responsibility of the individual researcher, often at the direction of the PI, to determine and implement appropriate means of establishing and maintain back-up files.

There is an immense diversity of critical equipment. HVAC systems in research buildings play critical roles in health safety as fume hoods remove potentially toxic fumes from laboratories. Many pieces of scientific equipment and most computer systems generate heat that must be removed as temperature and humidity must be within acceptable limits for operation. Certain pieces of laboratory equipment are essential for the conduct of contracted research. Computer systems including, but not limited to network connections and email, play critical roles throughout the fabric of the Institute. Research vessels are absolutely essential tools for some research programs. It is close to impossible to list each piece, or even class, of critical equipment and systems. Each has a different RTO depending on the specifics of the application.

When possible, the Institute purchases service contracts on critical equipment. The contracts often specify the timeframe within which repairs will be made. Service contracts can be costly and funds are not always available. Other systems are maintained by in-house staff who, in the event of multiple problems, must look to Administration for guidance on the order in which attack the problems.

As indicated above, the sheer number of critical systems, especially when juxtaposed with the great variation in characteristics renders it most difficult to employ the usual tabular format.

Table C-1
Essential Records, Systems, and Equipment

Mission Essential Function (MEF)	Recovery Time Objective (RTO)	Essential Record and Type	System(s) or Equipment	Networks or Servers that must be Operational to Support the System(s) or Equipment
Advisory Service	< 24 hrs	Advisory report or testimony	Desktop computer and/or shared network drive Email Telephone	Internal IT network, telephone
Research in Marine Science	< 24 hrs	Individual files on grants and contracts	Desktop computer and/or shared network drive	Internet, Internal IT networks, telephone
	< 24 hrs	Research data	Desktop PC, equipment based data storage systems, shared network drives, etc.	Various internal networks and servers.

Mission Essential Function (MEF)	Recovery Time Objective (RTO)	Essential Record and Type	System(s) or Equipment	Networks or Servers that must be Operational to Support the System(s) or Equipment
Education	< 7 days	Student transcripts etc	Banner Desktop PC	Internet connections, Internal networks and servers Records maintained at W&M

Table C-2
Essential Records, Systems, and Equipment Protection

Essential Record, System, or Equipment	Storage Location	Recovery Point Objective (Maintenance Frequency of Electronic Records)	Current Protection Methods	Vendor s	Vendor Contact Information
Student transcripts	Primary at W&M, secondary VIMS shared drives	@ W&M	@ W&M	@W&M	@W&M
HVAC	Each building	N/A	Physical security/controlled access, circuit protectors, back-up electrical generators	Many	Available in Facilities Management
Grant/contract files	Shared network drive	< 7 days	Multiple levels of back-up; in some cases, paper files	N/A	
Research Data	Desktop PC, shared network drive, other	< 7 days	Multiple levels of back-up; in some cases, paper files	N/A	

APPENDIX D – BUSINESS PROCESS ANALYSIS

The Business Process Analysis (BPA) is a systematic method of identifying and documenting the elements necessary to accomplish each agency MEF. BPA's have also been performed on Primary Business Functions (PBFs) that directly support MEF performance. The following BPAs represent the Virginia Institute of Marine Science's processes for performing each MEF and supporting primary business functions.

Each of the three MEFs has several or many facets, *e.g*. different research projects conducted by different investigators in different labs on different time scales; therefore it is unreasonable to present PBA for all components. Tables D-1-1, D-1-2, and D-1-3 outline the barest essentials of the processes involved in the MEFs. Also, as noted elsewhere in this Continuity Plan, some support functions, *e.g.* human resources, payroll, and accounts payable, are managed through William & Mary. It would not be appropriate for the Continuity Plan of the Virginia Institute of Marine Science to suggest management of these external functions.

Because there is significant overlap among the PBFs for the three MEF, PBFs are not segregated by MEF. This plan considers 18 individual PBFs (Tables D-2-1 through D-2-18), though further consideration of the range of activities at VIMS will yield more specific functions.

Table D-1-1
Mission Essential Function - Business Process Analysis

Virginia Institute of Marine Science **Research in Marine Science - Business Process Analysis** **April 2014**
MEF Statement: Research in Marine Science: The performance of basic and applied research in all aspects of marine science including but not limited to fisheries sciences, biological sciences, geological oceanography/marine geology, and physical oceanography is one of the three MEFs of the Virginia Institute of Marine Science.
MEF Narrative: Section 28.2-1100 of the Code of Virginia assigns nine specific responsibilities to the Virginia Institute of Marine Science; eight of the nine require VIMS to "conduct studies," "consider ways," or "engage in research," more specifically, "engage in research in the marine sciences." Most of the research is performed by faculty members, their graduate students, and members of the Institute's professional staff. Almost all of the research is funded by grants or contracts awarded to VIMS to external agencies, usually in the executive branch of the federal government such as NOAA, EPA, NSF, and the Corps of Engineers. The research products may be in the form of specific project reports, papers published in the scientific literature, graduate student theses and dissertations, and similar methods. The research frequently has specific application in helping address issues of state, national, international, and local interest such as assessment of fisheries stocks leading to the determination of harvesting quotas whether in Chesapeake Bay or the world ocean, or determination of rates of shoreline erosion. Many services could be suspended temporarily during a disruption, but, depending upon the specific circumstance, some might be of substantial, real-time importance. Two examples, which fit into both MEF #1 and MEF #2, is prediction of site specific levels of storm surge flooding and determination of environmentally appropriate responses to spills of hazardous materials in or near aquatic systems. Primary Business Functions pertinent to the operation of MEF #1 are maintenance of facilities such as, but not limited to, laboratories, continuity of IT systems, grant and contract administration, payroll, accounts receivable and payable, purchasing and property management, human resources management, the Office of Safety and Environmental Programs, various other support services, and central administration including the Associate Dean for Research and Advisory Services.

Virginia Institute of Marine Science

Research in Marine Science - Business Process Analysis

April 2014

MEF Output:

Peer-reviewed scientific papers, meeting presentations including posters, publication in proceedings of meetings, books, chapters in books, various types of contract/grant reports, other forms of non-peer-reviewed literature, general advancements in science with potential applications across a broad spectrum of venues. Metrics would include counts of each type of publication, number and dollar amount of externally funded research projects, rankings of individual papers in various "citation indices."

MEF Input:

Research Proposal: Initiated by faculty and scientists either individually or in cooperation with others at VIMS or elsewhere. Review and approval by relevant department chair. Review and approval by Office of Sponsored Programs (OSP). Review and approval by Associate Dean for Research and Advisory Services.

Data: If grant/contract is awarded, the Principal Investigator (PI) conducts or otherwise oversees research activities in the laboratory and/or field in order collect, analyze and interpret, and report on data pertinent to the project.

Leadership:

Associate Dean for Research and Advisory Services, Individual PIs, Director of Sponsored Programs, Departmental/Unit Business Managers. Approximately 60 individual members of the faculty serve as PIs. Many of the PIs manage multiple, separately funded research projects.

Staff:

Too numerous and project specific to detail. Each PI supervises one or more members of the technical staff and, usually, one or more graduate students.

Communications and IT Requirements:

Telephone, computer capability appropriate for the individual projects and range of the projects within each research program, internet connections both hard wired and Wi-Fi, documents scanner. Some individual research projects have advanced needs such as massive memory and very high

speed computing capability.

Facilities:

Conventional office space and furnishings for PI and departmental Business Manager. Office space, often shared, and furnishings for technical support staff. Laboratory facilities appropriate for the individual projects including items such as fume hoods and biological safety cabinets. Various classes of boats.

Office and IT facilities for PBFs such as purchasing, payroll, human resources, etc.

Resources and Budgeting:

The PI and technical support staff initiate purchase requests which are processed through the departmental Business Manager and forwarded to the OSP for budgetary approval before being handled by the purchasing department at W&M. Essentially all purchasing is done electronically through the State's eVa system. PIs monitor budgets with assistance from departmental Business Managers. OSP maintains budget records for each externally funded project.

Partners and Interdependencies: Too many to list individually. General categories include funding agencies, external research collaborators, suppliers of specialized laboratory equipment and supplies.

Has a Manual Workaround been identified for this function? N/A

Process Details:

PIs initiate a proposal for a research project usually in response to a request for proposal (RFP).The proposal is forwarded to relevant department chair for review and approval. The departmentally approved proposal is forwarded to the OSP for review and approval including verification of budget entries and administrative completeness and to the Associate Dean for Research and Advisory Services for review of scientific merits and institutional capability to support. The fully approved proposal is submitted to the funding agency. If the funding agency declines to fund the proposed effort, it notifies the PI and the OSP. If the funding agency accepts the proposal and funds the project, it notifies the PI and the OSP.OSP establishes an account number (index) and file for the project, monitors expenses, and reminds the PI of various administrative and reporting deadlines.

Virginia Institute of Marine Science Research in Marine Science - Business Process Analysis April 2014
PI with staff and students conducts the research and writes the various reports. At the conclusion of the research, the PI submits the required reports and OSP verifies that all commitments have been satisfied.

Table D-1-2
Mission Essential Function - Business Process Analysis

Virginia Institute of Marine Science Advisory Service - Business Process Analysis April 2014
MEF Statement: The provision of advice in matters of marine science, the marine environment, and related topics to clients including, but not limited to, elements and agencies of state, federal, and local governments, NGOs, private enterprises, and citizens.
MEF Narrative: Section 28.2-1100 of the Code of Virginia charges the Virginia Institute of Marine Science with several responsibilities including the following: • Conduct studies and investigations of the seafood and commercial fishing and sport fishing industries. • Consider ways to conserve, develop and replenish fisheries resources and advise the Marine Resources Commission and other agencies and private groups on these matters. • Conduct studies of problems pertaining to other segments of the maritime economy. • Conduct studies of marine pollution cooperation with the State Water Control Board and Department of Health and make the data and their recommendations available to the appropriate agencies. • Conduct hydrographic and biological studies of the Chesapeake Bay, its tributaries and all the tidal waters of the Commonwealth and the contiguous waters of the Atlantic Ocean. • Conduct such special studies and investigations concerning these subjects as requested by the Governor. • Engage in research and provide training, technical assistance and advice to the Board of conservation and Development of Public Beaches on erosion along tidal shorelines, the Soil

and Water Conservation.

- Advise on matters relating to tidal shoreline erosion, and to other agencies upon request.
- Develop comprehensive coastal resource management guidance for local governments to foster the sustainability of shoreline resources by December 30, 2012. The guidance shall identify preferred options for shoreline management and taking into consideration the resource condition, priority planning, and forecasting of the condition of the Commonwealth's shoreline with respect to seal-level rise.
- These studies shall include consideration of the seafood and other marine resources, such as the waters, bottoms, shorelines, tidal wetlands, and beaches, and all matters related to marine waters and the means by which marine resources might be conserved, developed and replenished.

These charges fall under the broad heading of "advisory services in marine science." Additionally, members of the VIMS community serve on local, federal, and, in some instances, international advisory groups that consider the full spectrum of marine issues. The advisory information may be provided in the form or written report, presentations at and participation in meetings and workshops, in formal discussion with appropriate individual, and in other ways.

Although much of the advisory work would not suffer unreasonable detriment if delayed for a reasonable period, some aspects must be readily available. During severe coastal storms, VIMS must be able to provide near real-time information on actual and predicted water levels and locales likely to be impacted by storm-tide floods. In the event of an event such as an oil spill, experts at VIMS would be needed to provide immediate input on topics such as predictions of the movement of the spilled material in the marine/estuarine environment, natural resources likely to be impacted the spilled material, the probably and potential consequences of that encounter, and the priorities for protection.

MEF Output:

The advisory information may be provided in the form or written report, presentations at and participation in meetings and workshops, in formal discussion with appropriate individual, and in other ways.

MEF Input:

The scientific and technical knowledge of the faculty, staff, and students of VIMS.

Virginia Institute of Marine Science Advisory Service - Business Process Analysis April 2014
Leadership: Dean and Director, Associate Dean for Research and Advisory Services, Associate Director for Advisory Services, Associate Director for Marine Advisory Services (MAS)
Staff: Any member of the faculty, staff, and students of VIMS might participate in some level of advisory work.
Communications and IT Requirements: Telephone, email, internet connection, etc. Nothing unique.
Facilities: Office, library, internet connection.
Resources and Budgeting: The faculty and senior scientific staff are the primary resource. Budgeting includes a variable portion of the individual's state supported compensation and the shared costs of facilities.
Partners and Interdependencies: The spectrum of agencies that fund the research that provides the knowledge for the advisory work such as the Virginia Department of Environmental Quality, the Virginia Marine Resources Commission, the Virginia Department of Health, the National Marine Fisheries Service, and the Chesapeake Bay Commission.
Has a Manual Workaround been identified for this function? N/A

Virginia Institute of Marine Science

Advisory Service - Business Process Analysis

April 2014

Process Details:

The Institute receives a request for information or advice on a particular issue. Depending upon where and how the request is received, it will be routed to the appropriate individual or program. Depending upon the nature of the request, the response (output) can take any of several forms such as but not limited to formal written reports, oral testimony, participation in workshops

Table D-1-3
Mission Essential Function - Business Process Analysis

Virginia Institute of Marine Science **Education- Business Process Analysis** **April 2014**
MEF Statement: The Virginia Institute of Marine Science is the School of Marine Science of the College of William & Mary. VIMS provides a broad range of educational services.
MEF Narrative: As William & Mary's School of Marine Science, VIMS provides graduate education in the various specialties within marine science to graduate students pursuing master's and doctoral degrees in marine science. The Institute also participates in the College's undergraduate program, through the undergraduate Minor in Marine Science and several courses, and the graduate program in public policy. Faculty, staff, and students at VIMS also participate in educational activities encompassing K-12 science programs, various technical audiences, and the general public. The graduate program is the most extensive aspect of the MEF including course work and one-to-one mentoring of advanced students.
MEF Output: A better educated cadre of marine scientists equipped to advance the knowledge of marine science. A better educated citizenry more able to interpret environmental information.
MEF Input: The scientific and technical knowledge of the faculty.
Leadership: Dean and Director Associate Dean for Academic Affairs

Virginia Institute of Marine Science Education- Business Process Analysis April 2014
Staff: Teaching faculty Teaching Assistants Post-Doctoral Fellows Registrar
Communications and IT Requirements: Conventional email and internet connections. Software for posting course information. Most classrooms should have video-projection and internet capability. Video-class room and video-conference capability to enhance remote student participation.
Facilities: Appropriate classrooms and teaching laboratories. Most classrooms should have video-projection and internet capability.
Resources and Budgeting: Partial support for faculty salaries is included in base budget. Faculty research grants and contracts and private funds support student tuition and stipends. Tuition also partially supports staff and other expenses in the office of the Associate Dean of Academic Affairs. Individual department Office Managers (working with their respective Department Chairs) and the office of the Associate Dean of Academic Affairs are responsible for assigning and tracking budgets.
Partners and Interdependencies: Academic programs of William & Mary. Participation by a wide array of faculty from other institutions.

Virginia Institute of Marine Science Education- Business Process Analysis April 2014
Has a Manual Workaround been identified for this function? N/A
Process Details: N/A

Table D-2-1
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Payroll. The functions necessary to assure that faculty, staff, and students are paid and that all necessary records are maintained. Payroll at VIMS is subsidiary to Payroll at W&M.
Primary Business Function Narrative: The Primary Business Function of Payroll is to assure all matters pertaining to the pay of faculty, staff, and students are managed accurately. This includes collecting time-worked information, pay scales for individuals, deductions of all sorts, and processing the distribution of pay on the schedule mandated by the State. The maintenance of records so as to be able to provide the yearly W-9 forms and to verify all details of pay is a major part of the function.
Primary Business Function Output: Regular pay to individuals. Development and maintenance of necessary records and forms.
Primary Business Function Input: Pay schedules, deductions, hours worked.
Leadership: At W&M not VIMS
Staff: Primarily at W&M however at VIMS departmental Business Managers generally coordinate the efforts.
Communications and IT Requirements: W&M systems including Banner, email, telephone.
Facilities: W&M
Resources and Budgeting: W&M
Partners and Interdependencies: W&M

Virginia Institute of Marine Science Business Process Analysis April 2014
Has a Manual Workaround been identified for this function? W&M N/A
Process Details: N/A

Table D-2-2
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Human Resources. This Primary Business Function is responsible for all aspects of human resources management. The function at VIMS is subsidiary to that at W&M with W&M's Human Resources providing staff and maintaining all records.
Primary Business Function Narrative: The Human Resources activities at VIMS are run as a sub-set of the larger HR program at W&M. HR staff from W&M is on the VIMS campus 2 days a week. All records are maintained at W&M. As is fitting for a large agency, W&M operates a "full service" HR program. It is included in W&M's Continuity Plan.
Primary Business Function Output: Personnel records, information, etc.
Primary Business Function Input: Determined by W&M
Leadership: Associate Vice President for Human Resources Earleen O'Roark)
Staff: There are approximately a dozen individuals of W&M's HR staff. VIMS Department Business managers and members of VIMS central Administration contribute to the HR function.
Communications and IT Requirements: Usual office systems, W&M systems, Banner
Facilities: At VIMS, a one-desk office suitable for an HR rep and one or two VIMS personnel.
Resources and Budgeting: Managed by W&M
Partners and Interdependencies: W&M
Has a Manual Workaround been identified for this function? W&M (N/A?)
Process Details: W&M

Table D-2-3
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: IT – Email. Provide dependable and efficient email service to the VIMS community.
Primary Business Function Narrative: This PB F is to provide dependable and efficient email service to the VIMS community. Staff in IT needs to assure that email system is up-to-date, manage storage requirements, and communicate with the commercial service providers.
Primary Business Function Output: Internal and external email functionality including appropriate or required archiving.
Primary Business Function Input: Sent and received email from internal and external sources.
Leadership: CIO (G. Anderson)
Staff: Enterprise Operations Specialist (C. Palmer), Manager Client Services (K. Goodwin), and all other staff in ITNS. There is significant cross-training and cross-functionality among the staff.
Communications and IT Requirements: Everything from standard office equipment through major system servers, system storage facilities, telephone and internet connections, and more.
Facilities: Appropriate office space, cooled rooms for computer equipment, the HVAC and electrical systems should be on automatic back-up electrical to assure that, at least, the core systems can continue to function. Also a second on-campus facility in a different building to accommodate redundant systems.
Resources and Budgeting: Staff compensation and basic operations is part of the Institute's base budget. Major equipment purchases may require the use of "one-time" funds.
Partners and Interdependencies: W&M IT department, Verizon telephone, Cox Communications, Avaya (telephone systems), Microsoft (office software etc.), various contractors. The list of partners etc. is maintained in the IT department along with details of contact information.

Virginia Institute of Marine Science Business Process Analysis April 2014
Has a Manual Workaround been identified for this function? N/A
Process Details: N/A

Table D-2-4
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: IT – Intranet. Provision and maintenance of campus only (including external access via VPN protocols) computer accessed information systems.
Primary Business Function Narrative: The VIMS Intranet is a vital part of campus information systems. Data maintained on the intranet is necessary for the campus community but, for various reasons should be restricted to the campus community and not be available to the general public. This Continuity Plan is an example of such information. The ITNS department maintains and advances the system.
Primary Business Function Output: Dependable, efficient, and effective provision of intranet services.
Primary Business Function Input: Electronic-form data from many segments of the campus community.
Leadership: CIO (Gary Anderson)
Staff: Infrastructure Service Architects (C. Palmer and T. Ward), others in the department staff.
Communications and IT Requirements: Everything from standard office equipment through major system servers, system storage facilities, telephone and internet connections, and more.
Facilities: Appropriate office space, cooled rooms for computer equipment, the HVAC and electrical systems should be on automatic back-up electrical to assure that, at least, the core systems can continue to function. Also a second on-campus facility in a different building to accommodate redundant systems.
Resources and Budgeting: Staff compensation and basic operations is part of the Institute's base budget. Major equipment purchases may require the use of "one-time" funds.

Virginia Institute of Marine Science Business Process Analysis April 2014
Partners and Interdependencies: The list of partners etc. is maintained in the IT department along with details of contact information.
Has a Manual Workaround been identified for this function? N/A
Process Details: (A detailed narrative or diagram that ties together all of the elements involved in the process of performing the PBF.)

Table D-2-5
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: IT – Internet: Provision and maintenance of a very dependable, high speed connection to the internet is essential for most aspects of operations at VIMS.
Primary Business Function Narrative: Many aspects of work in all three of the Institute's MEFs use and rely upon highly dependable, broadband connection to the internet. The ITNS department at VIMS maintains the service.
Primary Business Function Output: The maintenance of the service is the output. The success of the service can be quantified with the amount of "down" time during each year and the length of time required reestablishing service when it is interrupted.
Primary Business Function Input: Connection from internal systems to an internet service provider. Internal IT systems to manage that connection.
Leadership: CIO (Gary Anderson)
Staff: Infrastructure Service Architects (C. Palmer and T. Ward), others in the department staff.
Communications and IT Requirements: This is a communications and IT system that is required by others.
Facilities: Appropriate equipment and remote, back-up equipment to effect the internet connection. Spaces must have a stable temperature. Electrical service must have automatically switched and properly maintained back-up generators. Equipment spaces must have reasonable physical security.
Resources and Budgeting: The primary resource is the external service provider. Secondarily, the internal computer systems and software to manage the systems. Budget resources come from the Institute's base budget with supplemental assistance from Indirect cost (facilities and administration) funds derived as part of external grants and contracts.

Virginia Institute of Marine Science Business Process Analysis April 2014
Partners and Interdependencies: Verizon, Cox communications, W&M IT services
Has a Manual Workaround been identified for this function? N/A
Process Details: Details of system architecture are maintained by the ITNS department.

Table D-2-6
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: IT – Web: The VIMS website (www.vims.edu) and its associated systems are functions that serve many aspects of the Institute. The access to data and the internal and external communications capabilities lend efficiency in many ways.
Primary Business Function Narrative: The VIMS website (www.vims.edu) facilitates many facets of communication among persons within VIMS and among VIMS and persons external to the Institute. The service includes design and maintenance of the web page, provision of training so that members of the VIMS community can modify appropriate parts of the web page, and similar services.
Primary Business Function Output: Provision of the web service.
Primary Business Function Input: All the information that is on the Institute's web page as provided by many, many members of the VIMS community. Additionally, members of the VIMS community contribute ideas concerning the character of the public interface. Most changes require no specific authorizations, though implementing some require assistance from individuals within the ITNS department. Some items must be approved the CIO and/or the Director of Communications.
Leadership: CIO (Gary Anderson) and Director of Communications (David Malmquist).
Staff: Infrastructure Architects, Database Managers, Communications Dept. staff.
Communications and IT Requirements: Inter- and intranet services, personal computers, central servers to house the system.
Facilities: Offices with standard personal computers, internet connection, standard office software, etc.
Resources and Budgeting: see above

Virginia Institute of Marine Science Business Process Analysis April 2014
Partners and Interdependencies: W&M's IT and web teams, web-management software providers.
Has a Manual Workaround been identified for this function? N/A
Process Details: Process details are maintained by the ITNS department.

Table D-2-8
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: IT – Audio-Visual/Instructional Technology Services. An array of instructional technology service including, but not limited to, projectors, teleconferencing, videoconferencing, and distance learning, is essential not only to the Institute's educational MEF but to the Research and Advisory Service MEFs as well.
Primary Business Function Narrative: Modern, computer based communications technologies increasingly are critical tools to man areas of business. In service of the Institute's Education MEF the ability to participate in "remote learning" activities, such as making courses taught at VIMS available for actively participating students on the Williamsburg campus of W&M, adds flexibility in course offerings and efficiency in the teaching-learning function. Video-conferencing is a similar function that serves all three of MEFs. Simple teleconferencing and video projection systems are tools that are used with great frequency. The ability to make video and audio recordings of lectures, seminars, and classes expands the opportunities for interested members of the campus community and occasionally other colleagues, to access presentations that they were unable to attend when originally presented. This set of services, which extends beyond the examples listed, increasingly are essential business functions.
Primary Business Function Output: The provision of the services described in the narrative just above is the primary output of this PBF. Allied with this is the establishment of a library (or archive) of lectures, seminars, and, in some instances, individual classes that will be available as longer term reference material for researchers. Simple counts of each of the various services provided each year might be one metric. With some products, it might be possible to quantify the number of times the products are accessed.
Primary Business Function Input: The scientific and other intellectual products of the faculty, staff, and students of the Institute constitute the major input of this PBF as it is this material that is communicated and/or recorded.
Leadership: CIO (G. Anderson), and the (lead) Instructional Technologist (B. Polley)
Staff: Persons with the knowledge and ability to set up and operate the various video and audio systems when the Instructional Technologist is not available are essential staff. In addition to

normal business hours, when there may be multiple, simultaneous events during the working day and there are occasional needs after normal hours and on weekends. Staff with the ability to make simple repairs to the systems also are important.
Communications and IT Requirements: Video projectors, digital video and audio recording systems, software for managing the files, good telephone and internet connections.
Facilities: Other than secure storage areas, no specific facility needs.
Resources and Budgeting: see Communications and IT Requirements, above.
Partners and Interdependencies: Verizon for telephone and internet connectivity; Cox Communications for internet connectivity; W&M IT as partners in some distance learning funtions.
Has a Manual Workaround been identified for this function? N/A
Process Details: N/A

Table D-2-9
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: IT – Special Needs. Provision and facilitation of services using exceptionally high speed and/or high computing capacity and memory for specific projects.
Primary Business Function Narrative: A small number of users across the VIMS community have continuing or occasional needs for non-standard IT services. These services might be access to very high speed or very high capacity processing, maintenance of exceptionally large data files, assistance in creating or managing large data bases, or other project specific needs. The IT group must be able to provide or to facilitate the provision of these services.
Primary Business Function Output: Provision of custom services as needed.
Primary Business Function Input: each request for custom services carries its own individual type of input.
Leadership: CIO (G. Anderson)
Staff: The staff of the ITNS group occasionally augmented by the W&M IT group.
Communications and IT Requirements: Depends upon the individual project.
Facilities: Depends upon the individual project, usually included in the Communications and IT Requirements.
Resources and Budgeting: Depends upon the individual project.
Partners and Interdependencies: Depends upon the individual project.
Has a Manual Workaround been identified for this function? N/A
Process Details: N/A

Table D-2-10
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Accounts Receivable: The majority of the funds supporting the Institute's research MEF are derived from external funds. In some instances, it is necessary to dun the funding agency to affect the transfer of the funds. In other circumstances the funding agency affects the transfer on its own initiative. In either case, the received funds must be managed according to the appropriate rules and customs. Other incoming funds, for example donations and sums owed from incompletely used travel advances, must also be managed.
Primary Business Function Narrative: see above.
Primary Business Function Output: The deposit of funds, whether cash, check, credit card payment, or other electronic transfer, in the appropriate bank account. The recording of all actions associated with the receipt of funds.
Primary Business Function Input: Incoming electronic funds transfers, checks, cash.
Leadership: Much of this function is conducted under the auspices of Accounting Operations at W&M. At VIMS the CFO/CAO (J. Latour).
Staff: Staff in Sponsored Programs to assure that funds for external research are received and directed to the proper accounts. Cashier for initial management of funds. Staff in accounts receivable and VIMS Financial Operations to assure proper record keeping and management.
Communications and IT Requirements: Standard office computers with appropriate office software and internet connection. "Banner" (accounting) software via W&M.
Facilities: Usually normal office facilities except the Cashier for security of cash needs two, successive doors for entrance, a "teller window," and a safe.
Resources and Budgeting: Standard office resources.

Virginia Institute of Marine Science Business Process Analysis April 2014
Partners and Interdependencies: Sun Trust Bank.
Has a Manual Workaround been identified for this function? If electronic systems are not available, traditional, manual accounting methods for ledgers, journals, etc. can be employed.
Process Details: Standard business practices.

Table D-2-11
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Accounts Payable: This is a basic business operational function of assuring that bills are paid in a timely manner.
Primary Business Function Narrative: As with any business, the Virginia Institute of Marine Science has to pay vendors, contractors, and others. It is essential that these bills be paid on time and that the payments be recorded against the appropriate internal accounts. The function also includes verifying that the charges are proper. The vast majority of this effort is the responsibility of the Accounts Payable office of W&M, although some aspects are conducted on the VIMS campus.
Primary Business Function Output: Timely payment of amounts owed to contractors, vendors, etc. Maintenance of appropriate accounting records.
Primary Business Function Input: From internal sources: purchase orders, contracts, receipts, verification of receipt of materials and services. From external sources: bills and invoices for payments due.
Leadership: CFO/CIO (J. Latour), W&M Assistant Director of Accounting Operations (R. Gilliam), W&M Accounts Payable Manager (C. Jenkins).
Staff: Accounts payable Technicians at both VIMS and W&M, Departmental Business Managers at VIMS for processing of purchasing requests, etc.
Communications and IT Requirements: Standard office equipment. Banner software system.
Facilities: Standard office environment.
Resources and Budgeting: Standard office resources.
Partners and Interdependencies: The many vendors and contractors due payment for materials and services. Banking services as managed by W&M.

Virginia Institute of Marine Science Business Process Analysis April 2014
Has a Manual Workaround been identified for this function? If electronic systems are not available, traditional, manual accounting methods for ledgers, journals, etc. can be employed.
Process Details: Standard business practices.

Table D-2-12
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Sponsored Programs Administration: As a major portion of funding for the Research MEF is derived from external, Sponsored Programs in the form of grants and contracts, proper and effective administration of those grants and programs is an essential function at VIMS. Additionally, because of its continuing contact with major funding agencies and experience in working with them, the Office of Sponsored Programs provides essential services in assisting individuals writing proposals for funding.
Primary Business Function Narrative: Sponsored Programs, *i.e.* grants and contracts, provide the funding for almost all of the research conducted at VIMS and constituting the Research MEF. Clearly, the administration of Sponsored Programs is a PBF. The function impacts all aspects of research. The Office of Sponsored Programs alerts researchers to Requests for Proposals (RFPs) and other funding opportunities. Professional staff in the OSP assists the researchers (Principal Investigators) in writing and submitting the proposals especially with verifying budgets and providing the administrative information that usually is part of the proposal process. Should the proposal be funded, the OSP tracks expenditures and budgets, provides the funding agency with financial reports as required by those agencies, and reminds the Principal Investigators to submit progresses reports if needed. At the conclusion of projects, the OSP processes the administrative close-out of the project and assures that all necessary reports have been submitted. The OSP maintains appropriate records. The OSP also provides oversight on compliance with many regulations pertaining to the conduct of research.
Primary Business Function Output: Efficient management of the many aspects of externally funded research programs. See the narrative above for a description of most of the services the PBF provides. Provision of periodic accounting reports to Principal Investigators and departmental business managers. Metrics include, but are not limited to, the numbers of proposals submitted and funded, the dollar amounts of funded research sorted by funding agency and Principal Investigator, the amount of Indirect Funds (Facilities and Administration Costs) generated by funded projects.
Primary Business Function Input: RFPs from external funding agencies provide the opportunity to apply for research funding. Proposals as developed by researchers attempting to obtain external funding. Notices of acceptance or denial by the potential funding agency of proposals. Purchase requests from researchers for verification that the request complies with regulations and that

sufficient funds are available.
Leadership: Associate Dean for Research and Advisory Services (M. Luckenback), Director, Office of Sponsored Programs (M. Fonner).
Staff: Staff in OSP. Departmental Business Managers.
Communications and IT Requirements: Standard office equipment and software. Banner accounting software vis W&M.
Facilities: Standard office facilities including access to computer systems.
Resources and Budgeting: Standard office resources. The funding of OSP is derived from the Indirect Costs charged to externally funded projects.
Partners and Interdependencies: The many external funding agencies including, but not limited to, the National Oceanographic and Atmospheric Administration, the National Science Foundation, the Environmental Protection Agency, the Virginia Department of Environmental Quality, the Virginia Marine Resources Commission.
Has a Manual Workaround been identified for this function? Generally N/A. For some aspects, traditional accounting practices could be employed for a limited time.
Process Details: N/A

Table D-2-13
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Library: Maintenance of a modern, inclusive library is an essential function for both education and research.
Primary Business Function Narrative: the William J. Hargis, Jr. Library of VIMS serves all three of Institute's MEFs. The collections held by and services provided by the library serve the Institute's educational mission and assist faculty and staff as they conduct basic research and review information used in the delivery of advisory services to the broad spectrum of clients. In addition to obtaining and cataloging books and similar documents and professional journals, the staffs of the library maintain the subscriptions and access to electronic journals. Staff in the library also provides assistance with obtaining search materials, interlibrary loan, and may other activities
Primary Business Function Output: Library services. Potential metrics include counts of inter-library loan activities both obtaining materials from other sources and providing materials to other sources, counts of book sign-outs, provision of access to electronic journals, etc.
Primary Business Function Input: Requests for services
Leadership: Library Director (C. Coughlin)
Staff: All other members of the library staff.
Communications and IT Requirements: Internet and standard office software. Electronic system to manage check-out and return of library materials.
Facilities: Appropriate physical space with proper library shelving, map cases (flat files), functional HVAC to control humidity.
Resources and Budgeting: Standard library and office resources.
Partners and Interdependencies: Various booksellers/sales aggregators, journal vendors, Swem Library at W&M.

Virginia Institute of Marine Science Business Process Analysis April 2014
Has a Manual Workaround been identified for this function? N/A
Process Details: N/A

Table D-2-14
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Field Support Center: The Field Support center provides equipment and staff to assist members of the VIMS community in a wide variety of field operations. Although the main emphasis is on maintaining and crewing vessels, the services provided thorough the Center encompass many more activities.
Primary Business Function Narrative: The Field Operations (Service) Center was established in January 2010 with the joining of Vessel Operations and the Field Support Group of the Department of Physical Sciences. The Center manages and maintains the Institute's vessels and boat trailers, provides a permanent crew for the R/V Bay Eagle, a permanent Captain for the R/V Ellis Olsson, and crews as needed for all other vessels. The skilled staff in Field Operations can assist in the design, fabrication, and maintenance of field and laboratory equipment and data collection systems. They can assist in field activities both locally and at remote locations wherever VIMS has a project. The staff can provide or arrange for training in practices such as cold water survival and practical training in the use of cold water survival-suits and life-raft deployment. The Center also oversees the process by which members of the VIMS community earn authorization to operate small boats and to tow trailers. Field Operations anticipates expanding the list of field equipment that it has for use by the VIMS community. Field equipment, such as grab samples and current meters, often can be shared among multiple research programs without the need for each program to purchase or maintain its own. Field Operations has the ability to schedule and maintain such equipment. On occasion, Field Operations also supports marine research activities of external entities.
Primary Business Function Output: Maintain the fleet of small boats and trailers. Metrics: usage counts, costs, charges. Maintain and crew larger vessels. Metrics: usage counts, costs, charges. Provision of training activities. Metrics: Counts of number and type of activities, individuals served.

Fabrication of research equipment. Metrics: Counts of projects and clients, charges billed.

Provision of assistance in field research. Metrics: Counts of missions, projects, hours billed.

Design, fabrication, and maintenance of data collections systems. Metrics: Counts of projects, clients, hours billed.

Primary Business Function Input: Requests for services.

Leadership: Chief Operating Officer (J. Martinez); Marine Superintendent(L.D. Ward); Shop Supervisor (J. Oldfield), Field Coordinator (T. Gass), Marine Safety Officer (S. Miller), Business Manager (vacant)

Staff: Remainder of unit staff, engine mechanics, electronics technicians, vessel captains, bosun, general mechanics and technicians.

Communications and IT Requirements: In addition to standard office equipment, marine radios, wireless ship-to-shore computer connectivity.

Facilities: Field Operations is based in the Boat Basin area of the VIMS campus. Facilities include the new Field Support Center which includes a large, very high ceilinged bay with a multi-ton capacity track crane for lifting vessel and heavy equipment. The building also includes a machine shop, engine and mechanical repair area; electronics repair area, and office space. Field Operations also has the "old boat shop," a rudimentary pole building that provides space for maintenance of vessel trailers and storage. The Marine Safety Office has office and meeting space for the Marine Safety Officer, the vessel dispatch center, and the Institutes (SCUBA) dive-equipment maintenance area. Other facilities include over three dozen vessels ranging in length from 12 to 75 ft, and numerous pieces of mechanical equipment.

Resources and Budgeting: Budget is derived from base funding, indirect cost recoveries, and direct charges for services. There are too many resources to list.

Partners and Interdependencies: Contract fuel supplier, various marine architects and engineers, suppliers of marine equipment and supplies, U.S. Coast Guard.

Virginia Institute of Marine Science Business Process Analysis April 2014
Has a Manual Workaround been identified for this function? N/A
Process Details: N/A

Table D-2-15
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Analytical Services Center (ASC). The Analytical Services Center provides a suite of analyses pertaining to water quality and determination of grain-size distribution of sediment samples.
Primary Business Function Narrative: The staff of the Analytical Services Center performs chemical analyses of water samples and grain-size analyses of sediment samples for clients internal and external to VIMS. As part of the effort, the ASC maintains strong records indicating the quality control and assurance of the analyses.
Primary Business Function Output: The primary output is the data report supplied to individual clients with the results of the various analyses. The secondary output is the documentation of quality control and assurance activities. Metrics could include counts by type of individual analyses performed, counts of clients, counts of projects worked on, charges billed.
Primary Business Function Input: Water and sediment samples from individual clients. The samples are to be analyzed by the ASC.
Leadership: Supervisor, Analytical Services Center (C. Pollard)
Staff: At present the ASC has one staff member in addition to the Supervisor. Both conduct the various analyses.
Communications and IT Requirements: Standard office communications and IT systems.
Facilities: A clean laboratory area with sufficient space for the analytical equipment. Refrigerated storage space for holding samples prior to analysis. Separate office areas for preparation of reports etc.
Resources and Budgeting: Laboratory supplies appropriate for the equipment and analyses. Budget primarily is derived from Indirect Cost funds and from charges for analyses performed.

Virginia Institute of Marine Science Business Process Analysis April 2014
Partners and Interdependencies: External clients, usually other marine research agencies.
Has a Manual Workaround been identified for this function? Although not a "Workaround, " the work is conducted following written protocols. While there may be other means of conducting the analyses, they generally do not yield identical or directly comparable results, thus they should be employed only in a true emergency.
Process Details: Details are specified in the operating manuals for the analytical equipment.

Table D-2-16
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: Department Business Managers are the focal points for the business and administrative activities conducted within their units.
Primary Business Function Narrative: Department Business Managers are the focal points for the business and administrative activities conducted within their units. These activities range from overseeing the flow of paperwork from individual members of the faculty, staff, and students to the W&M Human Resources, Payroll, etc. offices, through supervising processing of purchasing requests, to handling the many, day-to-day issues associated with departmental operations.
Primary Business Function Output: The output primarily is service - the efficient fiscal operation of the unit. There is no real metric.
Primary Business Function Input: N/A
Leadership: Each department or unit has its own business manager. At the time of writing, they are C. Harris, G. Burrell, C. Forrester, M. Ivey, S. Rollins, D. Pelata, D. Flemming, S. Lawrence, D. Galvez, and L. Ward.
Staff: Most of the Business Managers are assisted by a Program Support Technician.
Communications and IT Requirements: Standard offices systems plus connection to W&M's Banner system.
Facilities: Standard office space with telephone and internet connections.
Resources and Budgeting: N/A
Partners and Interdependencies: N/A
Has a Manual Workaround been identified for this function? N/A

Virginia Institute of Marine Science Business Process Analysis April 2014
Process Details: N/A

Table D-2-17
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science Business Process Analysis April 2014
Primary Business Function Statement: Facilities Management maintains and keeps operational the campus facilities and grounds, plans for the renovation of existing facilities and the construction of new facilities, and ensures that the campus physical environment is safe and enhances the efforts of the faculty, staff, and students.
Primary Business Function Narrative: Facilities maintains and keeps operational the campus facilities and grounds, plans for the renovation of existing facilities and the construction of new facilities, and ensures that the campus physical environment is safe and enhances the efforts of the faculty, staff, and students. In order to accomplish these activities, the department has four operational units: grounds, housekeeping, maintenance, and security. Additionally, the department services the pool of trucks and cars maintained by the Institute. Project managers within the department have a broad range of activities in planning and supervising construction and renovation and other projects.
Primary Business Function Output: A safe, efficiently functioning, clean, attractive campus. There are many possible metrics – quantification of the different types of energy consumption and their costs, recycling rates, times out of service for HVAC and similar systems, dollar value of projects completed, etc.
Primary Business Function Input: Work orders, service schedules, capital outlay guidance.

Virginia Institute of Marine Science Business Process Analysis April 2014
Leadership: Director of Facilities Management (R. White), Assistant Director (M. Kershner), Maintenance Supervisor (M. Rogers), Grounds Supervisor (K. Borkey), Housekeeping Supervisor (R. Currie)
Staff: Project Manager, staff in each of areas, vehicle mechanic.
Communications and IT Requirements: Standard office equipment plus "CAD" or similar and GIS software.
Facilities: Standard office space, garage with lift, storage space for the different types of equipment and supplies, locker rooms.
Resources and Budgeting: Cleaning and housekeeping supplies and materials, grounds keeping supplies and equipment, specialized tools and equipment for HVAC, plumbing, electrical work, vehicle maintenance, etc.
Partners and Interdependencies: These lists are maintained within Facilities Management.
Has a Manual Workaround been identified for this function? N/A
Process Details: N/A

Table D-2-18
Primary Business Function - Business Process Analysis

Virginia Institute of Marine Science **Business Process Analysis** **April 2014**
Primary Business Function Statement: The Office of Safety and Environmental Programs works to assure that workplace at VIMS is safe and that the Institute complies with OSHA, EPA , NRC, VDH, and similar regulations.
Primary Business Function Narrative: Staff in the Office of Safety and Environmental Programs have a wide range of duties and perform many services related to those duties. They manage the collection, storage, and disposal of waste chemicals and other materials. They supervise the use and disposal of radioactive materials. They manage the Institute's Workers' Compensation Program. They work to assure that VIMS is compliant with OSHA, EPA, and other rules. They provide training in CPR and First Aid, the use of fire extinguishers. The provide an initial safety orientation including the Institute's Continuity and Emergency Operations plans to all new hires.
Primary Business Function Output: The primary output is a safe workplace that is compliant with safety, health, and environmental regulation.
Primary Business Function Input: N/A
Leadership: Director of Safety and Environmental Programs (T. Grose)
Staff: Chemical Hygiene Officer, Workers' Compensation Coordinator. All members of the staff serve several roles, all conduct some training activities, and all maintain an eye on campus safety.
Communications and IT Requirements: Standard office equipment plus cell (or pager).
Facilities: Standard office space. Small class room. Appropriate structures for storage of waste hazardous materials and radioactive wastes. Storage space in several locations across campus for emergency spill clean-up materials.
Resources and Budgeting: Varied
Partners and Interdependencies: Virginia Department of Occupational Health and Safety (VOSH),

EPA, providers of chemical and radioactive waste disposal services, Virginia Department of Health, U.S. Nuclear Regulatory Commission. Retail providers of safety equipment. Safety Office at W&M.
Has a Manual Workaround been identified for this function? N/A
Process Details: N/A