Mid-Atlantic Oil Spill: Are We Ready?

Mid-Atlantic workshop as part of the National Academies and Sea Grant collaborative workshop series

OLD DOMINION UNIVERSITY

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GULF OF MEXICO RESEARCH INITIATIVE

The National Academies of SCIENCES ENGINEERING MEDICINE

GULF RESEARCH PROGRAM

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Cover Photo: US Army Corps of Engineers aerial photo of Virginia Beach

Summary

In 2017, the Gulf Research Program (GRP) and the Health and Medical Division of the National Academies of Sciences, Engineering, and Medicine hosted a workshop to prepare for and respond to major marine oil spills. To address gaps identified at the workshop, GRP reached out to the Sea Grant Oil Spill Science Outreach Program to host a series of regional workshops. The Sea Grant Oil Spill team, based in the Gulf, partnered with state Sea Grant programs across the country to plan and deliver regional workshops in 2018-2019. The goals of the workshops were to raise awareness of the topical areas related to spills, listen to those directly affected by spills, identify regional level needs and priorities for improving preparedness, promote networking among groups who may not have previously interacted, and identify resources to address gaps. These regional workshops focused on public health, social disruption, and economic impacts with the aim to identify regional-level needs and priorities for improving preparedness. The following reports on the regional Mid-Atlantic Workshop.

The Mid-Atlantic region includes 428 miles of coastline and over 34 million people in coastal counties and major population centers. The major ports included are in Philadelphia, Baltimore, and Hampton Roads, each with various types of shipping (e.g., military, containers, bulk, oil tankers and barges). This area also has significant beaches, wetlands, cultural and historical sites, and wildlife refuges. An oil spill in the Mid-Atlantic would impact the numerous coastal communities and vast globally-important wildlife, including threatened and endangered species located in this region. Potential economic impacts would be on beach-related tourism, eco-tourism, commercial and recreational fishing, aquaculture, and temporary closure of shipping routes (including commercial and military transportation routes), the energy industry, research, and other eco-recreation attractions.

Although the Mid-Atlantic does not have offshore oil drilling, offshore and nearshore fuel oil spills have been experienced from ships en route to Mid-Atlantic ports and military bases, those in transit to other ports, and those from grounded fishing vessels along the coast and in the Bays. Some large spills of crude and refined oil from barges and tankers have been experienced in the Delaware and Chesapeake Bays. There is also a significant level of bulk oil and hazardous substance facility storage in coastal ports in the region. The National Oceanic and Atmospheric Administration (NOAA) Emergency Response Division (ERD) has published their response reports since 1992, organized by the United States Coast Guard (USCG); the Mid-Atlantic region is in USCG District 5. For past spill history details, as well as the link to additional case studies since 1967, visit the ERD website - https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/oil-and-hazardous-materials-response-reports.html.

In order to increase oil spill preparedness in the Mid-Atlantic region, the Sea Grant Oil Spill team partnered with Virginia Sea Grant (VASG) to host a Mid-Atlantic Oil Spill workshop. A planning committee was created consisting of representatives from the Virginia Department of Environmental Quality (DEQ) and Department of Emergency Management, NOAA, USCG, Scientific and Environmental Associates (SEA) Consulting, the Chesapeake Bay Foundation, and the Department of Community and Environmental Health at Old Dominion University.

On March 29, 2019, the workshop "Mid-Atlantic Oil Spill: Are We Ready?" took place at the Wyndham Virginia Beach Oceanfront. Seventy-four attendees included stakeholders in aquaculture, tourism, public health, emergency response, academia, disaster research and communities affected by oil spills from North Carolina to Delaware. Experts in emergency management, health, environmental and community impacts discussed what oil spills in the Mid-Atlantic region mean to the health, economy, and well-being of the community. The workshop goals were to:

1) Raise awareness of the economic, environmental, community and health impacts of oil spills
2) Promote communication between the response community and those potentially affected by oil spills
3) Discuss potential projects that improve oil spill preparedness addressing regional needs and priorities

Delegate Kelly Fowler of the Virginia House of Delegates welcomed everyone to the workshop and emphasized her support in this effort, as well as the importance of the work being done to protect the people and resources that would be affected by an oil spill. Following this welcome, Chris Hale from the Sea Grant Oil Spill Science Outreach Program explained the background of this workshop as part of the collaborative workshop series, which led to an oil spill background presentation followed by a question and answer session. Each of these introductions set up for three important breakout group discussions where participants were divided into groups of approximately ten people to discuss oil spill impacts at a deeper level. The workshop closed with a large group vote on the top preparedness priorities and pilot projects for the Mid-Atlantic.

Participants at the workshop (L). Chris Hale presenting background information (R).
Photo credit: Aileen Devlin/VASG

Oil Spill 411

An overall "Oil Spill 411" presentation by John Giese of the Virginia DEQ Office of Pollution Response & Emergency Preparedness explained the current laws and protocols, planning structure, area contingency plans, special teams involved, oil spill response vessels and barges, and various removal techniques in place to respond to an oil spill. Following this presentation, participants asked questions to a panel consisting of the USCG Federal On-Scene Coordinator representative, State On-Scene Coordinator, Local On-Scene Coordinator, NOAA Scientific Support Coordinator, and Oil Spill Response Contractor hosted a question and answer session, which was moderated by Ann Hayward Walker, president of SEA Consulting.

Oil Spill 411 panel. Photo credit: Chris Hale/Texas Sea Grant

What happens to animals and marine life affected by oil spills and how are they dealt with?
The USCG will start the command chain by contacting various groups, including a wildlife rehabilitation team, to respond. Tri-State Bird Rescue and Research is commonly called in for assistance for the Mid-Atlantic area. A process is followed to respond to wildlife that factors in animals that need to be quarantined and avoiding cross-contamination, as well as following permitting rules to handle mammals and birds. The importance of wildlife response to an oil spill is not underestimated. Although people do not understand the wildlife impacts of an oil spill, they want to be informed, and the news and media often report the species and quantity of affected wildlife.

What guidance can the National Pollution Funds Center give us?
Funding can be provided for oil spill cleanup assistance but can be complicated and dependent on jurisdiction (if the spill occurred in a federal area). The National Contingency Plan only covers certain areas and certain chemicals.

Is the Eastern Shore included in response planning?
The Nature Conservancy is working on an Eastern Shore annex for a contingency plan for the seaside and bayside of Eastern Virginia. They are also working to bring this plan to Maryland and Delaware.

What is the reporting system for foreign vessels?
If a vessel is in federal water (within 200 miles of the shore), a report needs to be made if there is a sheen on the water from the vessel. This is federal law, and each vessel is held responsible for oil spills. Oils have fingerprints and can be identified to its source and responsible vessel.

Oil Spill Impact Breakout Discussions

The Mid-Atlantic Oil Spill Workshop explored three oil spill impacts:

1) Environmental and Public Health Impacts
2) Economic Impacts
3) Community Impacts

Federal and state management experts, as well as private and academic researchers, presented background information regarding each impact. Afterwards, participants actively engaged in breakout group discussions focused on research priorities, outreach priorities, pilot project ideas, protocol suggestions to include in existing response and regulatory frameworks, and resources available for each of these three topics.

Breakout group presentations and discussions. Photo credit: Aileen Devlin/VASG

Environmental and Public Health Impacts

Frank Csulak, NOAA Scientific Support Coordinator, and Amy Hayes, Health Assessor with the Virginia Department of Health, presented on the environmental and human health effects of oil spills. Following their presentations, each discussion group was asked:

1) *Research Priorities:* What factors need to be studied to improve environmental resilience? What research information is needed to effectively integrate human dimensions with local and regional response planning? What information gaps exist?
2) *Outreach Priorities:* What are the outreach or engagement needs for improving environmental resilience?
3) *Pilot Project Ideas:* If public health or community well-being monitoring programs or plans do not exist in your community, what kind of program would you create? Who/What organizations should be involved? How can this be folded into existing emergency response plans, both in the short term and long term? What barriers exist?
4) *Response Protocols:* What protocols would you suggest to improve the integration of human dimensions into response planning? When planning for a response to a spill, what should be considered in terms of human well-being? Who would be involved in these protocols? Do these protocols include formal adoption by Regional Response Teams (RRTs) or local Area Contingency Plans (ACPs)?

Twenty-three priorities and pilot projects were captured.

Research Priority	Description
Current preparedness level for the Eastern Shore environment (rural Virginia)	The current preparedness level for the Eastern Shore environment regarding migrant birds, agriculture, and environmental justice is unknown. Many ships from the Port of Virginia are parked outside of Cape Charles beach, which can be a big risk. The Eastern Shore does not have enough resources to do a local analysis and be the first responder to an oil spill.
Civilian impact data	There is no guidance on civilian impacts from an oil spill. More data that is relevant to civilians needs to be included into the Area Contingency Plan.
Toxicity level on the environment	The Agency for Toxic Substance Disease Dispersants researches toxicity levels in the environment, but more needs to be done locally. One challenge is if a spill impacts a small community, a smaller sample size with less people means less people to study who are impacted. Oil spills in Virginia have been small spills (<100,000 gallons), making it a lower priority to study.
Oil spill monitoring technology	Self-reporting is still the main way to monitor oil spills. Also, small spill impacts are not monitored long-term. There is no

	mechanism in place to detect small spills if they are not self-reported.
Medical exposure data	More data needs to be collected on medical exposure beyond self-reporting methods. The current exposure data is not reliable and outdated. A standardized procedure needs to be created to refine oil spill exposure and include long-term studies (months/years) on human health impacts from the exposure.
Cumulative releases of oil spills impact	The baseline of oil spill impacts to the environment is unknown, making the cumulative impact on the health of certain species (i.e. plants, fish) and environments (i.e. shoreline, marshes) unknown. Oil spill impacts need to be differentiated from other health impacts, such as diseases. The initial and final number of tar balls on a beach can help with baseline determination and effectiveness of a clean-up.
Safe exposure standards	Research on safe exposure levels/limits/timescales and what defines an open beach or area to be clean and safe enough for the public needs to be done continually. Many chemical compounds are still untested without standards. The Agency for Toxic Substances and Disease Registry standards are outdated and vague. The exposure level needs to be known for volunteers and hired employees that respond to an oil spill. The Association of Occupational and Environmental Clinics could be partnered with to assist with this priority.
Sensitivity & recovery of ecosystems	More information regarding restoration needs to be known.
Facility/infrastructure development	The necessary facility and infrastructure that is needed in this area to respond properly to oil spills needs to be researched. This includes knowing ultra-large container vessels and traffic patterns (especially along the Eastern Shore), as well as other modes of transportation along the coast that can impact the environment.

Outreach Priority	**Description**
Liaison between localities and national officials	A liaison between fisheries, ecotourism, grassroots, and communities and the national emergency response team will better manage and bridge the gap between localities and national officials. The affected fish industries need to have a seat at the table. A liaison is necessary between a command post and seafood producers in addition to between grassroots/nonprofits/ecotourism owners and community

	emergency response teams. Fish industries need to know where they fit in an oil spill cleanup and what current planning is occurring instead of finding out information after a catastrophic event.
Public Health Announcements	Public health announcements should be made to reach various communities. A local non-profit can lead this charge. - Safety announcements for surfers, swimmers, and all beach recreation users - Basic oil spill science announcements to educate the public - Health symptoms people can watch for after an oil spill - Safe seafood consumption education for the public
Alert systems	An online website and joint information center need to be developed to communicate a hazard waste spill quickly to a mass number of people, similar to how the Center for Disease Control (CDC) sends out mass communications for a disease outbreak. Interested parties could sign up to receive information via email and text message alerts. The CDC could team up with other organizations to create this network system. Another alternative could be a mobile app that can alert a community of a spill and provide a way to report spills.
Clean-up data and reports	The public needs to have access to clean-up data and reports to show a recovery area is clean and safe again to visit. All agencies can distribute their reports to local entities.

Pilot Project Idea	**Description**
Local level models	Modeling of where oil spills are going to affect an area has already been done; however, local level modeling has not been investigated yet. A local level model incorporating contamination extent, scalability, and concentrations should be developed.
Volunteer management program	A volunteer management program through the state could be developed by using activists and non-profits. There can be new certificates, education, and training for those will be in contact with oil. If the state is not willing to take liability of volunteers who are hurt, there should be an NGO that can take the liability. This management program would also solve issues regarding the gap between national and local communities, responders, and resources.

Geographic Response Plan	A plan could be created and used to identify areas of high environmental sensitivities. Afterwards, a funding source can be identified to stage booms and absorbents. If a spill occurs, trained responders can be deployed to these areas.
U. S. Senate Bill 865, Senator Sullivan	Support this sponsored bill to establish an oil spill response and prevention grant program by asking for up to $10 million for response and $25 million for prevention from the Oil Liability Trust Fund.
Response trailers	Response trailers could be created to have training workshops, making locals ready to respond to spills using pre-identified facilities and equipment, while other resources and responders travel in from offsite.

Response & Regulatory Protocol Suggestion	**Description**
Involve police	Police can manage access to affected areas and enforce crowd control to prevent chaos.
Improve logistics for first responders	Logistics (lodging, food, etc.) for first responders is a problem. There could be a program for pop-up trailers, AirBnB access, etc. A better connection between local managers and first responders is necessary.
Include public health impacts	Wildlife is a common concern, but public health is a relatively new and huge concern. How to respond to the public and address community concerns before an accident occurs needs to be known as part of the response process. A model incorporating public health and first response planning could be created and involve local and environmental health assessments.
Manage air quality complaints	Acute exposure symptoms (both short and long term), as well as air quality complaints should be managed. The state Department of Emergency Management can assist with this.
Have responders engage the community	Responders need to engage communities and prepare them for all hazards and include oil spills. The public needs to be educated on who is helping, when they should or should not help (i.e. if it is dangerous to help clean up tar balls or if they should notify an authority instead), and who to call locally for any questions. Federal agencies such as the Federal Emergency Management Agency has contacts set up at the national level, but not at a local or regional level. Commands could be open

	to collaboration within reason with local organizations. Community leaders should be activated and engaged early, as they know their communities best and are trusted by their citizens. These leaders can help develop plans and protocols unique to their areas.

Available Resources
Community Health Workers
Voluntary Organizations in Active Disaster
Local Emergency Management Technicians

Economic Impacts

Dr. Ted Tomasi with Cardno, an infrastructure, environmental and social development company, presented on economic impacts and preparedness. Each discussion group was asked:

1) *Research Priorities:* What factors need to be studied to improve economic resilience? What information is needed to improve the compensation process?
2) *Outreach Priorities:* What are the outreach or engagement needs for improving economic resilience?
3) *Pilot Project Ideas:* How do we enable communities to maintain economic resilience during and after an oil spill? What would an effective compensation process look like to you? What would it involve? Who would need to be involved?
4) *Response Protocols:* What should emergency responders include in the planning process? Are there already any local or regional emergency response plans or frameworks that address economic issues during and after oil spills? If so, what are they? Are they effective? Who is involved? If not, why not? Should the process of compensation be included in preparedness and planning for economic resilience?
5) *Resources Available:* Are there programs or organizations that can help? Other tools or services? When are they available- before, during, after a spill?

Twenty-two priorities and pilot projects were captured.

Research Priority	Description
Economic expertise put into planning, preparedness, and response	There is little awareness of where to locate or who to contact for economic information for communities. Economic development people in towns and cities have different perspectives and approaches compared to response personnel. The fiscal impacts need to be identified. Models that are available to connect economic compensation and local interests need to be known and connect the local community with the Incident Command System. The costs associated with environmental impact, as well as the contingency plans and economic work at a local level that address economic impacts need to be known. Tourism, hotels, human activities in local areas, commerce in and out of the area are all potential topics. Quantifying the economic impact of various ports (especially Virginia) will assist in prioritization. Also, land ownership needs to be determined. Access to who owns the impacted properties needs to be known, particularly if the land is public versus private.
Economic baseline for the region	We need to understand the economic contexts in which we are operating at a community level and know what the key economic drivers are in each community. This will help us understand the upstream and downstream impacts of disruption. The major economic players need to be known, as

	well as the major baselines (i.e. fisheries, tourist beaches, ports, etc.). Another impact determination can be beach use before and after a spill, as well as fishing use. The location for this data should be known. Additionally, the baseline should consider how some communities may be less affluent and devote less funds to restoration, as well as how some communities with less restoration efforts may appear to have lower baselines.
Effectiveness and implementation of proof-based loss claims	The effectiveness and implementation of the proof-based process needs to be researched to be more transparent and empathetic towards victims while also avoiding scams and legal problems. There should be objective criteria, easy access, clear follow-up throughout the approval, and access to a human representative at any time during the approval process. This system should stay consistent. There should also be an item similar to a receipt that proves how much loss someone has so that no one takes advantage of the system. For instance, a commercial fisherman loses business due to a spill and may report losses higher than his/her normal income.
Health-related costs	A baseline for the characterization of health-related costs after an oil spill should be done with the help of the Chamber of Commerce. This should be done periodically over time.
Oil Spill Liability Trust Fund – Coast Guard	Research needs to be done on the Oil Spill Liability Trust Fund by investigating subsistence use, lost revenue, public service, public parks, and damage/bankruptcy caused by removal activities.
Data analysis of spending trends	After a spill, the economic damage should be quantified to help describe the spill impact. A net benefit analysis needs to be done not a cost benefit analysis.
Evaluation of spending databases available	Different spending databases should be compiled to see the best picture of how much money is available to assist with spill damage.
Delayed response to third parties	There is a delayed response to third parties. A short-term compensation for the affected second and third level parties should be created that can also support the first level affected parties.

Outreach Priority	Description
Economic outreach	Economic outreach needs to be built into oil spill drills.
Education to businesses	Companies may be more likely to learn precautions and preventative strategies if they are educated on how an oil spill can affect them negatively. Risk assessments should be part of the education program.
Outreach to fishermen	While using Vessels of Opportunities (vessels that have volunteered to assist in responding to oil spills), fishermen should be paid or volunteer to assist with oil spill clean-ups.
Claims process advertisement	The oil spill claims process should be publicized periodically without waiting for an incident to occur. People should know ahead of time how to file claims instead of during or after a spill. The National Pollution Funds Center could assist with the advertisements and training.
"Small-time" businesses and employee education on economic relief/benefits available	Supporting small businesses and employees, such as migrant workers, mom and pop shops, and local farms can be done through education on economic relief programs and benefits available for them to help with financial aid.
Media coverage on economic impacts	Through the media, public awareness of economic impacts beyond the first 72 hours of the spill should be promoted as clean-ups continue.

Pilot Project Idea	Description
Remediation of Underwater Legacy Environmental Threats (RULET) vessel-based exercise	A RULET vessel-based exercise for tourism in the Eastern Shore and other identified areas in the Mid-Atlantic would be helpful, as there are shipwrecks that are possible pollutants along the Mid-Atlantic region.
Economic surveys	An economic survey to people impacted by previous spills can help collect information to allocate financial resources.
History of economic challenges faced by oyster fishers	In the Chesapeake Bay, oyster fishers are a major employment group. Knowing what economic challenges they faced after previous spills can assist with planning for assistance with future spills. The Chesapeake Bay Foundation can help with this project.
Environmental justice education program	An environmental justice education program that shows a community how responsible parties are determined needs to be developed.

Short-term aid programs	Short-term aid programs need to be developed to assist with immediate economic hardships by the community. This can include food banks, low interest loans, temporary employment, job re-training and more.

Response & Regulatory Protocol Suggestion	**Description**
Create long-term economic response plan	A plan needs to be created that will aid a community economically long-term after a spill. This can include how to re-build trust among consumers with the fishing industry once the fisheries recover and various seafood is safe to eat again.
Update local information in Area Committee Plans	These plans are only as good as the people who show up to the Area Committee Meetings, which does not include economists. The private sector and economists need to be invited to the table and provide input.
Create fair criteria for hiring	The criteria to hire locals and "Vessels of Opportunity" should be fair and unbiased. In the past BP oil spill, Caucasians were hired before Vietnamese fishermen even though both had the same economic hardships post-spill.

Available Resources
USCG, National Pollution Funds Center
Academia and local scientist/experts
George Mason University, Environmental Justice Program
USCG, Maritime Transportation System Recovery Unit

Community Impacts

Dr. Liesel Ritchie, the Associate Director of the Center for the Study of Disasters and Extreme Events at Oklahoma State University, presented on the social disruption from marine oil spills and what disaster science can tell people. Each discussion group was asked:

1) *Research Priorities:* What information is needed regarding recovery of people after a spill? Would research be incorporated into formal response plans or frameworks? Would research take place before, during, after a spill?
2) *Outreach Priorities*: What kind of outreach is required to both understand recovery and to connect audiences to recovery resources? Would outreach be incorporated into formal response plans or frameworks? Would outreach take place before, during, after a spill?
3) *Pilot Project Ideas:* What recovery programs are needed for the community? What partners would be involved? What is the timeline? How would the response and recovery communities be involved?
4) *Response Protocols:* Is human dimension research included (physical, mental, social, economic etc.) in emergency response planning? Is human dimension research involved during and after a response? Is outreach and engagement needed? How so? Who needs to be involved? What barriers exist?
5) *Resources Available:* Are there people, organizations, tools, services, meetings, centers/clinics, etc. that could be considered as resources? If none are available, what resources would be on your wish list? What services, organizations, networks, funds, etc., exist in both the short and long term that help people recover? Which recovery resources are developed for particular audiences? Consider the mental, physical, social, cultural, and spiritual impacts.

Twenty priorities and pilot projects were captured.

Research Priority	Description
Baseline of community satisfaction and wellness	Finding a baseline to better understand the effects of an oil spill is needed. A survey could be distributed to local communities regularly to establish this baseline and pre-spill data can be compared to post-spill. The quality of life and wellness of a community can be measured without directly engaging citizens for every variable. The variables that define wellness of a community data need to be identified. After these are defined, they can be the focus to improve a community's health.

Outreach Priority	Description
Increase community access to Area Committee Meetings	People are not attending area meetings when invited. Area Committee Meetings should be held in the community with an understanding of each community's access in various regions. Area Committee Meetings should also meet with Planning District Committees and Local Emergency Planning

	Committees (LEPC). The LEPC mission needs to have a clear mission statement to see who the first responder is to oil spills.
Understand community context	Different groups receive their information in different ways. The most effective way to reach each community needs to be investigated and known prior to an oil spill. For instance, rural communities and elderly may not have internet access; therefore, information should be disseminated in other ways, such as through radios, schools, the weekly paper, brochures, quarterly articles and newsletters. Responders need to know the communities they are helping. They can integrate incident management with event management.
Social Media	Information sharing through social media can be a potential way to reach many people quickly. However, this needs to be managed well and have accurate information. An analysis of previous agencies using social media should be done to take away lessons learned and best practices.
Messengers	The appropriate professionals should be messengers to the public, but the number of people who deliver oil spill information should be limited. Using the same messenger can develop trust with the public and better working relationships. These select messengers should receive training to be a public information officer. Information can be relayed in a way that is easy for the public to understand, which means without undefined acronyms and with the context of what numbers/data is being presented. Additionally, information relayed should consider the public view/perception and not cause panic but convey empathy that the recovery of the effected individuals is important to responders and that they are cared for by the government. Responders should treat victims with respect. The USCG has a special public affairs team to deliver information without causing panic or unsolicited concern. Messaging regarding oil spill response needs to start sooner rather than later.
Public focus groups	Local focus groups need to be created to understand public concerns. If focus groups are established, effective communication with the Joint Information Center and the community can be identified and educate the community on mental wellness, responding to a crisis, and clean-up project effectiveness. These need to be established beforehand to have community members involved and help determine potential impacts and increase awareness of oil spill impacts. The Elizabeth River Project is a great example of a local group that addresses local issues and is engaged with the community.

	Groups like these can link the response community to the local community more effectively and efficiently.
"Know Your Neighbor" program	Neighborhood liaisons could work with local planning departments to create a network of neighborhoods.
Open Houses	State and local agencies can host open houses to educate the public on oil spill risks and responses. This could be an effective way to increase general awareness and education about oil spills and the protocols that follow, as well as learn who is affected the most and how they can be helped.
Alternative outreach during an event	During an oil spill, many government entities are too busy cleaning up the oil spill, and outreach is pushed down the list of priorities, which also means less funding, time, and effort. A separate entity should be in charge of outreach when this happens. The National Voluntary Organizations Active in Disasters, faith-based groups, local nonprofits, or universities could all assist with outreach.
Post-spill education through universities	Community colleges and universities are a great way to reach many people and provide trusted information. Using universities strategically to promote spill response would be a great way to plug into local communities and an easy way to arrange a public forum to educate the public about a spill.

Pilot Project Idea	**Description**
Counseling	Grief and stress counseling after a spill should be available to assist in reducing mental health issues, such as stress, anxiety, and depression because of an oil spill impact. Preparation with local practitioners prior to a spill will assist in knowing what information and services are available to specific demographics that are affected. Group therapy could also be an option for people, as well as peer-to-peer talks for stress management after a pill. These resources would help people and communities recover faster. People could take training for this to help communities and have this be accessible to everyone. The USCG has Critical Incident Stress Management training.
Continuity of Operation Plans (COOP)	A Continuity of Operation Plan should add government agencies at a local level.

Community health assessments	Community health assessments should be created to check how a community's health has changed before, during, and after the spill.
Hotline for spill victims	A hotline for disaster relief for oil spill victims should be created. This would be easier and more accessible than peer-to-peer talks and solve various stresses. A non-profit organization could help run this with the appropriate training.
Awareness and assistance campaign	This campaign would provide the public with trusted resources to get help (i.e. family counseling, mental health resources, etc.). Nonprofits would be a group to run this campaign, as they are trusted groups in the community.
Compile lists of local organizations	A list of local organizations who are able to help in the wake of a spill or disaster would be useful to have available ahead of an event. Churches, fire departments, and other groups already have an established plan to respond to an emergency. Additionally, schools and local businesses have different resources that could be used.

Response & Regulatory Protocol Suggestion	**Description**
Increase assistance availability	People need easy access immediately to mitigate stresses that come following a spill. Having phone numbers/hotlines and locations of community assistance centers for mental health readily available on flyers, a website, through the media, etc. is needed.
Keep public aware	In the response process, the public should be kept aware of progress throughout the recovery and celebrate milestones together as a community. Knowing progress is occurring will improve the public morale and facilitate community recovery.
Create best response principles and establish critical success factors	Knowing the principles of best response can help formulate better Incident Action Plans. Using these principles, effectiveness can be measured based on previously established critical success factors.
Appoint a component or group to lead community planning and response efforts	An appointed community organization to lead the community planning and create hierarchy will help with organization and streamlining responses within a community. An entire organization involvement should be promoted instead of one or two people handling everything.

Increase interaction between federal, state, & local groups	Communication from federal leaders down to local community leaders needs to be increased.

Available Resources
District health departments – conduct community health assessments
Area Committee Meetings
Agency for Toxic Substances and Disease Registry
Critical Incident Sites Management (USCG) – peer training
Local environmental agencies
Seafood Safety Commission
Community Health Assessments
Red Cross – mental health counseling
Environmental health specialists
Local businesses – basic cleanup and relief supplies

Regional Priorities & Pilot Projects

A total of sixty-five oil spill preparedness priorities and pilot projects were captured during this workshop. Participants identified their **top priorities and projects** to include:

- The importance of increasing communication prior to and during a crisis – in order to do this, the community being addressed must be understood and communication methods need to be tailored to what will work for that specific community
- The emphasis on communication and connections between the Local Emergency Planning Committees and Area Committee Meetings
- Engagement of outside industry into Area Committee Meetings by going to the industry groups instead of asking them to come to us
- Pulling in more local economic experts into planning, preparedness, and response and to provide economic information into local preparedness plans – this will facilitate the setup for a community assistance center for short-term aid programs
- Public health announcements – particularly seafood contamination outreach to the public
- Grief and stress counseling after a spill to reduce mental health stress
- The identification of the most vulnerable population should an oil spill occur

Transparency between federal, state, and local oil spill preparedness plans allows for more experts to be involved, more open communication with the community, and more resources to be shared. Participants encouraged continuing workshops and outreach to educate oil spill communities and increase the number of connections between these communities to improve oil spill preparedness for everyone.

Word cloud created by Ann Hayward Walker/SEA Consulting.

Participants sharing their breakout discussion ideas and voting on the top priorities and pilot projects. Photos taken by Aileen Devlin/VASG.

Evaluations

Evaluations were given to see the effectiveness of the Mid-Atlantic Oil Spill Workshop. We received feedback from approximately half of the participants:

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
The workshop raised my awareness of public health issues related to oil spills	42.3%	46.2%	11.5%	0%	0%
The workshop helped promote networking among groups that may have not previously interacted	53.8%	42.3%	3.8%	0%	0%
The workshop identified regional-level needs and priorities for improving preparedness	34.6%	50.0%	15.4%	0%	0%
The workshop identified resources to address the issues discussed	23.1%	50.0%	26.9%	0%	0%

Appendix

Workshop Agenda

Mid-Atlantic Oil Spill: Are We Ready?

March 29, 2019

Wyndham Virginia Beach Oceanfront
5700 Atlantic Avenue, Virginia Beach, VA

Workshop Goals: 1) Raise awareness of the economic, environmental, community and health impacts of oil spills
2) Promote communication between the response community and those potentially affected by oil spills
3) Discuss potential projects that improve oil spill preparedness addressing regional needs and priorities

8:30 AM	Registration and coffee/continental breakfast
9:00 AM	**Welcome and Introductions** **Michelle Covi**, *Old Dominion University and Virginia Sea Grant* **Chris Hale,** *Oil Spill Science Specialist, Texas Sea Grant*
9:30 AM	**Oil Spill 411** **John Giese,** *Manager, DEQ Office of Pollution Response & Emergency Preparedness* Panel moderated by **Ann Hayward Walker,** *SEA Consulting Group* **Tim Spoerl**, *Marine Spill Response Corporation* **LCDR Renee McKinnon**, *United States Coast Guard* **John Giese,** *Manager, DEQ Office of Pollution Response & Emergency Preparedness* **Erin Sutton**, *Deputy Emergency Services Coordinator, City of Virginia Beach* **Frank Csulak,** *NOAA Scientific Support Coordinator*
10:30 AM	Break
10:40 AM	**Environmental and Public Health Impacts** **Frank Csulak,** *NOAA Scientific Support Coordinator* **Amy Hayes**, *Virginia Department of Health* Break out discussion
12:30 PM	Lunch
1:15 PM	**Economic Impacts** **Ted Tomasi**, *Cardno* Break out discussion
2:30 PM	Break
2:40 PM	**Community Impacts** **Dr. Liesel Ritchie,** *Oklahoma State University* Break out discussion
4:00 PM	**Large Group Discussion on Regional Prioritization and Projects**
4:20 PM	**Wrap-up and Future Steps**

Planning Committee

Name	Organization
Steven Becker	Old Dominion University College of Health Sciences
Todd Cannon	Virginia Dept. of Emergency Management
Elisha Cook	US Coast Guard, District 5
Michelle Covi	Old Dominion University / Virginia Sea Grant
Frank Csulak	National Oceanic Atmospheric Administration
Jay Ford	Chesapeake Bay Foundation
John Giese	Virginia Dept. of Environmental Quality
Christine Hale	Texas Sea Grant
Renee McKinnon	US Coast Guard
David Pugh	US Coast Guard
Ann Hayward Walker	SEA Consulting Group
Grace Walker	Old Dominion University / Virginia Sea Grant