

William & Mary Law School

William & Mary Law School Scholarship Repository

Virginia Coastal Policy Center

Law School Clinics and Centers

10-2-2013

Adaptive Planning for Flooding and Coastal Change in Virginia: Legal and Policy Issues for Local Government

Chris Olcott

Erica Penn

Follow this and additional works at: <https://scholarship.law.wm.edu/vcpclinic>



Part of the [Environmental Law Commons](#), and the [Water Resource Management Commons](#)

Repository Citation

Olcott, Chris and Penn, Erica, "Adaptive Planning for Flooding and Coastal Change in Virginia: Legal and Policy Issues for Local Government" (2013). *Virginia Coastal Policy Center*. 14.

<https://scholarship.law.wm.edu/vcpclinic/14>

Copyright c 2013 by the authors. This article is brought to you by the William & Mary Law School Scholarship Repository.

<https://scholarship.law.wm.edu/vcpclinic>

Adaptive Planning for Flooding and Coastal Change in Virginia: Legal and Policy Issues for Local Government

**Post-Conference Report
October 2, 2013**

On September 13, 2013, the Virginia Coastal Policy Clinic (VCPC) at William & Mary Law School and the Center for Coastal Resources Management (CCRM) at the Virginia Institute of Marine Science (VIMS) hosted a forum for local governments and coastal stakeholders to discuss legal and policy issues related to coastal flooding. The conference was presented by VCPC and VIMS, in collaboration with the Commonwealth of Virginia and with funding support from the Virginia Environmental Endowment.

VCPC law students, Chris Olcott and Erica Penn, produced this report. If you have any questions or comments, please contact Shana Jones, VCPC Director, at scjones@wm.edu.



Table of Contents

| | | |
|-------------|----------------------------------------------------------------|-----------|
| I. | Sponsors | 1 |
| II. | Executive Summary | 1 |
| III. | Background | 3 |
| IV. | Overview | 3 |
| V. | Opening Remarks and Comments | 4 |
| VI. | Presentations | 5 |
| VII. | Appendix: Presentations, Speaker Bios, and VCPC Reports | 13 |

I. Sponsors

The Virginia Coastal Policy Clinic (VCPC) at William & Mary Law School and the Center for Coastal Resources Management at VIMS presented the conference, in collaboration with the Commonwealth of Virginia and with major funding support from the Virginia Environmental Endowment. Additional supporters included Virginia Sea Grant, Greehan, Taves, Pandak & Stoner, and the Virginia Chapter, American Planning Association.

“Sea level is rising at 8 inches per century globally, and in Virginia we have to add subsidence. Our coastal communities are feeling the problem, and the administration is ready to partner with the General Assembly in what comes out of this workshop.”

-- Doug Domenech, Secretary of Natural Resources

II. Executive Summary

Virginia localities face a growing threat from sea level rise and recurrent flooding. Areas that were once inundated only infrequently are now subject to damaging floods on a regular basis. A recent study, *Recurrent Flooding Study for Tidewater Virginia*, authored by the Virginia Institute of Marine Science at the request of the Virginia General Assembly has predicted worsening flood risks for both coastal and inland localities as a result of sea level rise and increasingly severe rainfall events.¹ Local governments need to possess a full complement of tools in order to effectively respond to recurrent flooding risks.

Findings:

- ***Certainty to Act.*** Local government entities would like to have certainty with regard to their statutory authority to take action to protect public safety, public and private property, and the natural environment when planning for increased flooding risks caused in part by changing weather conditions, sea level rise, and subsidence.
- ***Understanding of Legal Duties and Risks.*** Local government entities would like to have a complete picture of their potential legal duties to prevent flood damage as well as any potential tort and takings liability stemming from utilizing a number of adaptation

¹ **Recurrent Flooding Study for Tidewater Virginia, SENATE DOCUMENT NO. 3 (2013), available at http://ccrm.vims.edu/recurrent_flooding/Recurrent_Flooding_Study_web.pdf.**

measures. Emergency management services providers would like to fully understand their legal obligations to provide services while coordinating with regional partners to better serve their constituents.

- ***Ability to Limit Flooding Losses.*** Local planners would like to be enabled to zone in a manner that limits losses from flooding. Additionally, stakeholders would like to see outreach and education efforts aimed at informing the public of these risks.

- ***Increased State Leadership and Sense of Urgency.*** Localities are already taking significant action but would like to have increased state leadership and sense of urgency. Localities seek state leadership in order to plan and coordinate efforts regionally, access state expertise and resources, and be better positioned to access federal and private funding. They are concerned that other areas of the country are more organized to access potential federal and private funding dollars.

“It is time for state government to say there is a problem, and that we need to address it.”

-- Senator John Watkins, District 10.

- ***A Coordinated But Strategic Adaptive Approach.*** Adapting to changing weather conditions and recurrent flooding will not be a one-size fits all response. Location, topography, and development patterns combine to create significant but varied levels of risk. Yet fragmented efforts are unlikely to have the impact necessary to adequately protect coastlines, coastal infrastructure, and public safety. A coordinated approach that allows for adaptive management is needed. Initial analysis of the risks in local communities suggests there are going to be significant areas of modest but increasing risk that can support numerous beneficial uses for a considerable period into the future. A strategic effort that engages local governments and other stakeholders in a review of land use options and the potential rates of risk development is needed.
- ***Collaborative Approaches Involving Multiple Stakeholders.*** Collaborative, as opposed to adversarial, approaches are needed because the challenges facing coastal Virginia communities are too large for any entity to “go it alone” and involve too many diverse stakeholders. Successful adaptation will require engagement from private industry and private property owners, given that the majority of coastal land is held privately. It will also require engagement from the environmental community, as some adaptation measures will create environmental impacts as well as opportunities for environmental protection and restoration. Finally, environmental justice concerns should be taken into account, as there are serious evacuation concerns as well as issues related to

distributing the burdens of adaptation as equitably as possible. In addition, many of the most socially vulnerable in the region – such as the elderly or those on a fixed income – have property at risk and may not be able to afford rising flood insurance rates.

III. Background

Many areas in the Tidewater region are subject to regular flooding in coastal areas (due to storm surge and tidal action) as well as in inland areas (due to heavy rainfall events). Such flooding causes damage to private and public property and infrastructure, creating a heavy economic burden on localities.

In its *Recurrent Flooding Study for Tidewater Virginia*, VIMS has suggested planning for a sea level rise of 1.5 feet over the next 50 years, exacerbating tidal flooding and impeding the function of stormwater infrastructure. The findings of the study motivated this conference. Armed with this information, localities are now seeking tools and strategies to limit the harms that will flow from this threat.

IV. Overview

The goal of the conference was to bring together the stakeholders interested in this issue to discuss coherent and coordinated strategies for managing the risks of increased flooding caused by sea level rise, changing weather conditions, and subsidence. These groups would like to work with the state and rest of the region in order to fund and efficiently address these looming problems.

Speakers discussed:

- The extent of the threat facing localities as well as present and future adaptation methods.
- The need for state involvement, leadership, and funding with regard to recurrent flooding.
- Incorporating all stakeholders--including public and private actors--into one cohesive adaptation strategy.
- Legal issues facing localities seeking to implement adaptation strategies--including possible tort and takings liability.
- Local perspectives on recurrent flooding: specifically the need for legal authority to act and the need for educating the population.

V. Opening Remarks and Comments

The following is a summary of the remarks made at the conference. A video of the conference as well as many of the presentations and prepared remarks are available on the VCPC's website at www.law.wm.edu/vacoastal.

Welcome

- ❖ **Taylor Reveley, President, William & Mary**
- ❖ **Delegate Chris Stolle, Virginia Beach**

Summary: This conference is a step in the right direction for Virginia and it is great to see this level of participation and interest. It is important that the state take a multidisciplinary approach to recurrent coastal flooding. This issue is complex and requires the expertise of lawyers, engineers, finance, policy, and emergency management professionals, in order to come up with practical and efficient solutions. Two things are vital to the success of solutions proposed at this conference: education and collaboration. As the VIMS study illustrates, the time to act is now.

Introduction to the Conference

- ❖ **The Honorable Doug Domenech, Secretary of Natural Resources**

Summary: It is not in the best interest of the State to debate the causes behind sea level rise, but there is a need to respond to its obvious effects. The data presented in the VIMS study clearly states that recurrent coastal flooding is caused by sea level rise and land subsidence. Virginia was spared by Hurricane Sandy last year, but it might not be so lucky in the future. Remember that in 2004, Hurricane Isabel devastated the state, causing 32 fatalities and 1.2 billion dollars in damage to property. It is in the interests of all citizens that the state act now before the next major disaster. Currently, it is budget and development season in Richmond. The state and the general assembly are ready to support initiatives that come out of this conference.

VI. Presentations

Coastal Flooding from the Locality's Perspective: Challenges and Concerns

❖ The Honorable Paul Fraim, Mayor of Norfolk

Summary: Recurrent coastal flooding is the greatest threat to the city of Norfolk. The city is 97% developed, most of which falls below 15 feet above sea level. To address this problem, the city has implemented a four-prong strategy that includes: Planning, Preparing, Mitigating and Communicating. It is estimated that the cost of mitigation, in order to protect the city's most vulnerable assets, is 1 billion dollars. As a city that is already under significant fiscal pressure, we cannot tackle this problem alone. There needs to be collaboration at all levels of government to address the issue, and our citizenry is going to have to learn to "live with the water."

"Of the seven major flooding events that have affected Norfolk in the last 80 years, four have occurred in the last 10 years. We now regularly experience flooding during lunar high-tide cycles, which was unheard of just a few years ago... The problem is real, well-documented, and we have to deal with it."

-- Mayor Paul Fraim, Norfolk

❖ The Honorable Will Sessoms, Mayor of Virginia Beach

Summary: The city of Virginia Beach is doing all they can to address the issue of recurrent coastal flooding through city ordinances and policies. However, the city is limited in its options due to fiscal and technological constraints. The state should take a more prominent role in this discussion by openly acknowledging this issue exists, identifying an agency that can take the lead on this issue, enhancing the coordination between local and federal government, and providing localities with analysis and data related to this issue.

"It's a major issue for all of us We have a relatively short window of opportunity, 20 to 30 years" in which to act.

**-- Mayor Will Sessoms,
Virginia Beach**

❖ **The Honorable Molly Ward, Mayor of Hampton**

Summary: There are two main problems in this region and the state when it comes to addressing the issue of coastal recurrent flooding. The first is denial. We have to realize that we cannot live where we thought we could live and that we have to elevate. Local Governments cannot solve this problem alone. The second is emergency management. We are not prepared to evacuate Hampton roads in the event of a hurricane or other storm event. It would take approximately 48 hours to evacuate if I-64 was moving one way, however who is going to make the call urging citizens to evacuate? We are not prepared. Lastly, it is important that we support our delegates in Richmond so that they can urge the state to formally address these issues.

“Local government cannot solve this problem on its own. We need to support local politicians so they can go to Richmond, and help them implement change.”

-- Mayor Molly Ward, Hampton

Challenges Facing Local Governments: Virginia’s Potential Leadership Role

❖ **Joseph Maroon, Executive Director, Virginia Environmental Endowment**

Summary: There are many challenges facing local governments in their attempt to address sea level rise and recurrent flooding. The Virginia Environmental Endowment is interested in this subject because our mission is to preserve and protect the Commonwealth’s resources and develop effective public policy. A one-size fits all approach to this problem will not be effective due to the differences in topography and the interdependence that exists between localities. This issue needs to be attacked holistically, because the state will be more receptive to our collective voices and sea level rise crosses many aspects of public life. This issue also needs to be attacked quickly. Other states, such as New York and New Jersey may have jumped ahead and secured federal funding we could have received if we were more proactive. We’ve got to get started.

Lunch Discussion:

Building Cooperation and Collaboration on Adaptation: A View From the Center

❖ **David Bookbinder, Element VI Consulting, former chief climate counsel for Sierra Club**

Summary: It is important for localities to avoid both alarmism and complacency during their adaptation planning for sea level rise and recurrent flooding, because institutions form people's thinking. Environmental groups will naturally want to be a part of the adaptation discussions and it's best to bring them into the process early in order to build partnerships and buy-in in the community. Hampton Roads has an advantage when it comes to adaptation planning because the process is starting early, there is a strong military presence in the area, the population is educated and there are higher income properties. However, it is important for localities to consider the possible environmental justice concerns as they decide which properties to abandon and which to protect.

❖ **David Bailey, Element VI Consulting, former chief of climate policy for ExxonMobil**

Summary: There are two types of adaptation policy: (1) reactive, which is usually a large and extremely costly project following a disaster and (2) proactive and anticipatory. Local governments should strive toward proactive and anticipatory adaptation planning in order to save money and specifically attract business community buy-in. It is important to remember, that to a business, money in the future is worth less than money in the present. There is so much uncertainty in information surrounding sea level rise businesses are unable to correctly assess risks; therefore, it does not make sense to pay for something today when it presumably would cost less to do so in the future. Localities can help this problem by providing businesses with short term projections of sea level rise impact, addressing the worst problems first, and looking for cheap, effective solutions. Lastly, when making adaptation decisions, localities shouldn't fight the market. If a property needs to be abandoned, then it may be best to abandon it. The business community must be engaged and participating in the adaptation conversation.

Questions/Comments from the Audience:

Q: How do you involve business in this process?

A: Communication! Get the VIMS and similar studies out to the public immediately.

Q: You mentioned that localities should let the market decide, could you expand on this more?

A: Instead of protecting areas that are not worth it economically, localities should use that money to help people relocate to safer areas.

Q: How do local governments anticipate the environmental justice backlash?

A: Your community and your leaders must deal with it as best you can. You know your community better than I do. But if the allegations are true, don't deny it.

C: Speaking for the City of Hampton - People that cannot afford the rising flood insurance rates will be forced off their property. Environmental injustice is already happening due to sea level rise adaptation.

Q: Businesses don't have real time data available when assessing the risks of sea level rise. What should be done to address this issue?

A: The government should just set a standard for all businesses to plan for. This is what's been done in Australia.

Legal Issues: Between a Rock and a Hard Place? Local Government Authority, Duties, and Regulatory Responsibilities

Framing the Legal Problems: Is a Holistic Strategy for Managing Stormwater, Flooding, and the Bay TMDL Possible or Advisable?

❖ **Speaker Pollard, Christian & Barton, LLP**

Summary: For localities already feeling the stress of a generally difficult economic climate, swiftly changing regulatory – from MS4 permits to the Bay TMDL – and natural factors such as increased coastal flooding are converging in new and different ways that will affect water resource and management planning. Grappling with these demands holistically may serve to avoid unintended consequences as well as provide opportunities for adaptation measures to serve multi-purposes.

The Dillon Rule and Local Government Authority: An Overview of the Issues

❖ **Professor Ron Rosenberg, William & Mary Law School**

Summary: The Commonwealth of Virginia, unlike a majority of states, operates under the Dillon Rule, meaning local governments have no inherent powers to govern. All of their power is derived from the General Assembly. More specifically, the Dillon Rule states a locality only has power that is (1) expressly granted, (2) necessarily or fairly implied, and (3) essential and indispensable. When a locality is in doubt of their authority, the answer is most likely no, they do not have the authority.

Exercises of local government power outside of its authorized scope will be enjoined by courts. For example, the Supreme Court of Virginia in *Marble Technologies, Inc. v. City of*

Hampton, 279 Va. 409 (2010), held that the city of Hampton acted outside of its Dillon Rule Authority when they expanded the Resource Protection Area (RPA) buffer to include lands in the Coastal Barrier Resources system. The court's opinion offered strong language against local government authority. In light of this case, any legislation at the state level giving localities the authority to address sea level rise specifically, needs to be clear and concise, with no room for interpretation.

It is however, important to recognize that localities have extensive authority under in the Virginia Code to address flooding and floodplain management.

Maintaining Services: A Duty Today, Potential Takings Issues Tomorrow?

❖ **Shana Jones, VCPC Director and Chris Olcott, Virginia Sea Grant Summer Legal Fellow**

Summary: A local government has a general duty to maintain roads, sewers, water services, and emergency services. The locality can face tort liability if it fails to maintain such infrastructure. The doctrine of sovereign immunity protects those localities from any tort liability incurred due to the improper design or planning of public works.

Virginia Code § 15.2-970 provides localities with sovereign immunity for failing to maintain drainage, erosion, and flood control works. However, a recent case has opened up the possibility that localities may incur takings liability where they fail to maintain drainage, erosion, and flood control works and private property is damaged by resulting flooding. See *Livingston v. VDOT*, 284 Va. 140 (2012).

Legal Issues Continued: Property Rights and "Takings" Issues for Local Governments

The Supreme Court's Recent "Takings" Cases: The Koontz and Arkansas Decisions -- What Do They Mean for Local Government?

❖ **Professor Lynda Butler, Chancellor Professor of Law, William & Mary Law School**

Summary: Two recent takings cases heard by the Supreme Court may hamper the ability of local governments to respond to recurrent flooding. In the *Koontz* decision, the Supreme Court decided that a local government's exercise of land use regulation powers, including denying a permit for the right to develop, must demonstrate a logical relationship and a rough proportionality between what it asks from the landowner and the impacts of the land use sought. Further, this relationship and rough proportionality applies to requests for monetary

contributions from landowners seeking land use permits (it is common for localities to seek contributions from developers to pay fees for schools or road maintenance because new development often increases the use of such public resources). In other words, the government must prove that any payment sought in exchange for approving a land use permit is designated to offset the actual harm or impact caused by the development.

The case appears to limit government discretion in making land use decisions: it shifts the burden to the government to prove that all decisions limiting the rights of individuals to use and develop their land are valid. Before this case, courts generally deferred to local government decisions to place conditions upon permitting. This will likely increase the number of takings cases brought against local governments after unfavorable permit decisions. The threat of litigation could either encourage localities to deny permits outright or to allow developers to build without forcing them to offset the extra burden their venture places upon public resources. See *Koontz v. St. Johns River Water Management District*, 570 U.S. ____ (2013). In the context of recurrent flooding, this decision may limit the ability of local governments to require new developments to employ, or offset the cost of, adaptation measures.

In its *Arkansas* decision, the Court held that government action that causes repeated flooding, even if of finite duration, can constitute a compensable taking. The Court decided that instances of repeated flooding caused by government action are subject to the analysis used in regulatory takings cases -- temporary flooding is not categorically excluded from being labeled a taking. Thus, if a local government is responsible for the temporary flooding of private property, it may have takings liability for its actions. See *Arkansas Game & Fish Commission v. United States*, 568 U.S. ____ (2012).

In light of these cases, local governments seeking to regulate land use while limiting takings liability should, as opposed to a ban on coastal development:

- Consider rolling development restrictions on the coast;
- Offer economic incentives to stop development; and/or
- Remove public subsidies to coastal landowners.

Understanding Lucas and Related "Takings" Law: Would Rebuilding Restrictions After a Storm Event Result in a "Total Economic Wipeout" and Constitute a "Taking"?

❖ **Sharon Pandak, Greehan, Taves, Pandak & Stoner, PLLC**

Summary: In *Lucas*, the Supreme Court decided that any property regulation that causes a complete destruction of all beneficial economic use of a parcel amounts to a compensable

taking. Some localities may wish to forbid coastal property owners from rebuilding after a loss due to flooding, and such a restriction may not be a total economic wipeout in all instances. As long as the property retains some use, it will not be a total wipeout. Localities should be willing to regulate and face litigation to test their restrictions: there will be no resolution on this point unless a locality acts.

In order to regulate coastal land use with less risk of takings liability, localities should:

- Frame land use regulations as needed for public safety, health, and welfare (as opposed to regulating to limit damage to property); and
- Avoid regulations that prevent any type of use of the property.

Issues and Concerns: A Locality Perspective

❖ Jim Redick, CEM Director, Norfolk Emergency Preparedness and Response

Summary: Sea level rise and recurrent flooding should be treated as any other sort of disaster -- including hurricanes and terrorist attacks. Localities should share resources and coordinate with one another in order to most efficiently deal with flooding threats.

Information is critical for responding to recurrent flooding. All home buyers should be informed if their intended purchase is located in a flood zone.

❖ Joseph DuRant, Deputy City Attorney, City of Newport News

Summary: Localities are facing a barrage of costs due to risks from recurrent flooding, new stormwater regulations, Chesapeake Bay TMDL, and consent decrees for sewage treatment. As such, they are put in a difficult situation of having to allocate scarce resources: it is unclear which of these causes will receive funding.

❖ Dave Hansen, Deputy City Manager, City of Virginia Beach

Summary: Localities need to function -- it is their job to attend to the needs of their citizens in the most efficient way possible. In responding to the threat of recurrent flooding, localities will need to balance political, environmental, and economic considerations.

Local authorities need to be enabled to act to meet the threat of recurrent flooding. Also, localities need to know the extent of potential liability for damage caused by failed flood-control infrastructure -- no feat of engineering is fail-safe.

❖ **Lewie Lawrence, Executive Director, Middle Peninsula Planning District Commission**

Summary: Although studies have shown that sea level is rising, it is doing so in imperceptible increments. As such, constituencies are not engaging with the problem. Education is needed, for constituents as well as local government leaders, in order to provide the scientific background that will enable those groups to acknowledge the problem and begin to produce solutions.

Driving change at the local level will likely require a financial impact upon individuals. As lending and insurance costs begin to reflect the risk of living on the coast, individuals reluctant to act proactively to address the problem will be forced to consider the full cost of their behavior (for example, living in a flood-prone area).

Next Steps: Where Do We Go From Here?

❖ **Senator John Watkins, 10th Senatorial District**

Summary: The state government needs to engage the issue in a deliberate and proactive manner. Regional coordination is a must, and the state is in the best position to provide such structure as well as seek federal funding for flood control measures.

❖ **Joe Lerch, Virginia Municipal League**

Summary: Localities need some certainty with regard to funding in order to proceed effectively. Local governments may be hampered in their ability to limit flooding damage if the Federal Government eliminates tax-exemptions for municipal bonds. Further, localities would greatly benefit from funding for state primary roads within urban borders. They could have greater leeway to implement adaptation measures if the state shares the cost.

VII. Appendix

The following presentations are available on VCPC's website at www.law.wm.edu/vacoastal:

- Mayor Fraim Presentation (.pdf)
- Mayor Fraim Presentation Remarks (.pdf)
- Mayor Sessoms Presentation (.pdf)
- Mayor Sessoms Presentation Remarks (.pdf)
- Speaker Pollard Legal Strategies Presentation (.pdf)
- Speaker Pollard Legal Strategies Presentation Outline (.pdf)
- Ronald Rosenberg Dillon's Rule Presentation (.pdf)
- Shana Jones & Chris Olcott Legal Issues for Local Governments Presentation (.pdf)
- Lynda Butler Takings Presentation (.pdf)
- Sharon Pandak Lucas & Takings Presentation (.pdf)
- Jim Redick Sub-Panel Organization Chart (.pdf)

Adaptive Planning for Flooding and Coastal Change in Virginia: Legal and Policy Issues for Local Government

September 13, 2013

Speaker Bios in Order of Appearance

Delegate Chris Stolle is a member of the Virginia House of Delegates representing the 83rd district, which includes portions of the cities of Virginia Beach and Norfolk. Del. Stolle is an OB/GYN and Vice President of Medical Affairs at Riverside Regional Medical Center. A U.S. Naval Academy graduate, Del. Stolle served in the U.S. Navy from 1981 to 2005. He received his M.D. in 1988 from the Uniformed Services University of the Health Sciences in Maryland. In 2004, he received his M.B.A. from the College of William & Mary.

The Honorable Doug Domenech, Secretary of Natural Resources. Mr. Domenech was appointed Virginia's Secretary of Natural Resources on January 17, 2010. Prior to his appointment, Mr. Domenech was the Senior Vice President of Artemis Strategies; a Washington, DC based bipartisan government relations and strategic communications firm. Mr. Domenech served in the George W. Bush Administration at the U.S. Department of Interior from 2001 to 2009. While there he held positions as Deputy Director of External and Intergovernmental Affairs, White House Liaison, and in 2005 he was appointed Deputy Chief of Staff to the Secretary of the Interior, the number two staff position in the Office of the Secretary. In this position he worked with senior managers for all nine Interior Bureaus, had senior oversight of the US/UNESCO World Heritage Program administered by the United Nations, and oversaw the Interior Crisis Action Team. Mr. Domenech also served as the Acting Deputy Assistant Secretary of Insular Affairs where he managed U.S. relations with seven insular areas including US Territories of the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands and US Freely Associated States of Palau, Federated States of Micronesia, and the Marshall Islands. Policy issues addressed in this role included energy, security, economic development and health.

Prior to serving at the U.S. Department of the Interior, Mr. Domenech had a long career in natural resource management. Upon graduating from college in 1978 he served as the Acting Director of the Timber Harvesting Management Program at Alabama A&M University where he conducted field research funded by the USDA Forest Service and Tennessee Valley Authority. In 1981 he went to work for the Forest Resources Association, a national technical trade association which represents producers and consumers of raw wood material. He began as the Southwestern Division Forester in Jackson, MS, and then moved to become the Southeastern Division Forester in Charleston, SC. He later became the Director of Forestry Programs at the FRA's headquarters in Washington, DC from 1990-1993. Mr. Domenech was appointed by Governor George Allen to the Goose Creek Scenic River Advisory Board and the Commonwealth Competition Council. Under Governor Jim Gilmore he was appointed to the Virginia Board of Forestry. He also formerly served on the Advisory Council of the Conservation Trust of Puerto

Rico. He received his Bachelors of Science in Forestry and Wildlife Management from Virginia Tech in 1978.

Mayor Paul D. Fraim. Mayor Fraim was born in Norfolk, Virginia, graduated from Norfolk Catholic High School, completed undergraduate studies at Virginia Military Institute, received his Master of Education from the University of Virginia and his law degree from the University of Richmond. A member of Norfolk City Council since 1986, he was appointed Mayor on July 1, 1994, and was reappointed every two years until May 2006 when he became first popularly elected mayor since 1916. He was re-elected to a new four-year term beginning July 2010. He began private practice in May 1977, and is presently president of the law firm Fraim and Fiorella, PC. He is chairman of the Towne Bank Norfolk Board of Directors. He is a trustee of the Eastern Virginia Medical School Foundation, president of the VMI Board of Visitors, and President of the Slover Library Foundation Board.

Mayor Will Sessoms. Will Sessoms is a Virginia Beach native and President/CEO of Towne Financial Services Group. He began his political career in 1988 as an at-large member of the City Council. In 1992, his fellow council members selected him to be Vice Mayor, a position he held for 10 years. He was elected Mayor in 2008, and re-elected in 2012. In 2012, Mayor Sessoms was recognized as Elected Official of the Year by the Association of Defense Communities "for critical role he played in leading and gathering support for Virginia Beach's effort to turn back encroachment" threatening Naval Air Station Oceana.

Mayor Sessoms is past chairman of the Hampton Roads Transportation Planning Organization, the Hampton Roads Military & Federal Facilities Alliance, and the Oceana Land Use Conformity Committee. He is on the executive committee and board of directors of the Hampton Roads Economic Development Alliance and the Hampton Roads Partnership. As chairman of the HRTPO, Mayor Sessoms effectively led the region to prioritize its major road projects, resulting in significant state funding. He also led negotiations for Virginia Beach to buy the Norfolk Southern right-of-way through the city. He created the Mayor's Alternative Energy Task Force to explore new energy sources for the city, region and commonwealth.

In 2010, he launched the Mayor's Action Challenge for Children and Families, a community-wide approach to providing youth and families with accessible, affordable and sustainable opportunities to improve their quality of life. In 2011, Mayor Sessoms established Envision Virginia Beach 2040, a group of bright, passionate and dedicated community activists charged with providing a thoughtful vision for Virginia Beach to achieve by 2040.

Mayor Molly Ward. Mayor Ward was first elected in 2008 and reelected to a second term in 2012. She received her J.D. from the College of William and Mary, Marshall-Wythe School of Law in 1987. She received her B.A. in English from the University of Virginia in 1983. Prior to becoming mayor, she served as Treasurer for the City of Hampton from 2002-2008. She is of counsel at McDermottWard, P.C.

Mayor Ward has served on numerous boards and committees, including the American Red Cross – Hampton Roads Chapter, board member (past); City of Hampton 2010 Celebration Committee, member (past); Fort Monroe Authority, board member (past); Hampton Roads Military and Federal Facilities Alliance (HRMFFA) (past chair); Hampton Roads Planning District Commission, executive committee member; (past); Hampton Roads Transportation Planning Organization, Chair; NAACP – Hampton Branch, life member; Old Point Kiwanis, member; and Peninsula Food Bank, board member (past president).

Dr. Carl Hershner. Dr. Hershner is the Director of the Center for Coastal Resources Management at the Virginia Institute of Marine Science. Dr. Hershner's primary research areas include tidal and nontidal wetlands ecology, landscape ecology and policy issues related to resource management/policy issues. Dr. Hershner has extensive experience with interdisciplinary collaboration, especially in the area of coastal watershed management. Dr. Hershner has published extensively in numerous scientific journals. He also serves on the Science and Technical Advisory Committee (STAC) for the Chesapeake Bay Program and has served as a Committee Member for National Research Council projects convened by the National Academies of Science. Dr. Hershner received his Ph.D. from the University of Virginia.

Molly Mitchell. Molly Mitchell is a graduate of the College of William and Mary twice over, with a B.S. in Biology and Environmental Science and a M.S. in Marine Science. She has worked at the Virginia Institute of Marine Science since 2005, conducting research on wetland and shallow water ecosystems and serving in an advisory role to state agencies and localities on marine issues. She has published multiple works on the impacts of changes in shoreline and climatic characteristics on macrofaunal communities. Recently she was lead author on the study "Recurrent Flooding Study for Tidewater Virginia", called for by a joint resolution of Virginia's House and Senate in 2012 and delivered during the General Assembly's 2013 session. She has been actively engaged in the ongoing sea level rise discussions and planning efforts in Tidewater Virginia.

Shana Jones. Shana Jones, J.D., directs the Virginia Coastal Policy Clinic at William & Mary Law School. She comes to the VCPC from serving as the Executive Director of Center for Progressive Reform (CPR), a "think tank" of environmental law professors from across the country. Ms. Jones also worked as a policy analyst for CPR, focusing on Chesapeake Bay and Clean Water Act issues. Prior to joining CPR, Ms. Jones worked as an associate attorney in the Norfolk office of McGuire Woods, LLP, previously serving as a law clerk to U.S. District Judge Robert G. Doumar and Judge Lynne Battaglia, Maryland Court of Appeals. She received her law degree from the University of Maryland School of Law, where she attended as the school's first Constellation Scholar, graduated Order of the Coif, concentrated in environmental law, and served as Manuscripts Editor of the *Maryland Law Review*.

Joseph Maroon. Joseph Maroon became the Executive Director of the Virginia Environmental Endowment (VEE) in 2013. Prior to joining VEE, he was the Principal/Owner of Maroon Consulting which assists business, government, conservation organizations and individual clients on environmental policies and regulations, land conservation, facilitation and

government relations. Mr. Maroon's experience includes a 30-plus year career in senior leadership positions with legislative and executive branch agencies of Virginia state government and with a leading private non-profit conservation organization. His previous positions include serving for eight years as agency director of the Virginia Department of Conservation and Recreation (DCR), serving for over 16 years as Virginia Executive Director of the Chesapeake Bay Foundation (CBF) and serving in several senior project management positions with the Virginia Joint Legislative Audit and Review Commission (JLARC).

David Bailey. David Bailey has 35 years experience in managing energy related issues around the world. He has worked at literally every level of the coal and oil and gas industries, from the UK National Coal Board during the economic and labor upheavals under the Thatcher government to responsibility for ExxonMobil's climate policy. Mr. Bailey's career in the oil industry began in 1989, where he became Human Resources Director for Mobil's UK businesses before moving into government relations. He subsequently worked on the creation of a Europe-wide joint venture with BP, oversaw Mobil's EU Relations activity in Brussels and managed community and economic challenges and business expansion projects in Norway, Saudi Arabia and Nigeria.

Moving to the US in 1998, he worked first on the Exxon-Mobil merger and then in a series of assignments in every part of the merged companies energy businesses, at Corporate HQ and finally in the company's DC office. He managed the full range of energy policy and climate issues both domestically and internationally, as well as multiple organizational redesign and crisis response projects. He has been involved in worldwide policy debates and advocacy on climate issues since 1998. He retired from ExxonMobil as Climate Policy Manager at the end of 2012. Mr. Bailey is a graduate of Oxford University and in addition to his consulting work, teaches a course on the global oil and gas industry for the Master's program at Georgetown University's Walsh School of Foreign Service.

David Bookbinder. Mr. Bookbinder began practicing law at Paul, Weiss, Rifkind, Wharton & Garrison, where for many years he handled securities, mergers and acquisitions, product liability, white-collar criminal, intellectual property and other matters. In the public interest sphere, Mr. Bookbinder has litigated cases under all of the major environmental statutes including, as Sierra Club's Chief Climate Counsel, managing the Massachusetts v. EPA case. He then represented environmental groups in both stationary- and mobile-source carbon matters, including the thicket of litigation over California's greenhouse gas vehicle standards. Since leaving Sierra Club in 2010, he has represented natural gas interests in a variety of federal regulatory matters, including several challenges to EPA rules.

Mr. Bookbinder was trained at Princeton University (summa cum laude) and the University of Chicago Law School. He has designed and taught courses on "Environmental Litigation" at Georgetown University Law Center and "Environmental Law and Science" at the William and Mary Law School/Virginia Institute of Marine Science, and has served on the boards of several nonprofit groups.

Speaker Pollard. Henry R. (Speaker) Pollard V is a partner at Christian & Barton, LLP, in Richmond. Mr. Pollard assists governmental, business, development, trade group and individual clients with issues such as water quality, wastewater, sewage, stormwater management, wetlands, water rights, solid and hazardous waste, Superfund, petroleum and chemical storage, air pollution, cultural resources, and species protection at federal, state and local levels. Mr. Pollard's practice includes compliance and permitting assistance, enforcement defense, water supply planning and contracts, property and business transactions, land use proceedings, and legislative and regulatory affairs. Mr. Pollard received his M.B.A. from University of Richmond School of Business in 1993, and his J.D. from University of Richmond School of Law in 1992, where he was a member of the *University of Richmond Law Review*. He received his B.S. in Chemistry from Hampden-Sydney College in 1988.

Professor Ron Rosenberg. Professor Rosenberg is the Associate Dean for Academic Affairs, Chancellor Professor of Law and Director, American Legal System Graduate Program and Foreign Exchanges at William & Mary Law School. Chancellor Professor Ron Rosenberg specializes in Environmental Law, Land Use and Zoning, Local Government Law, and Property Law. He holds both a J.D. and a Master's degree in Regional Planning from the University of North Carolina at Chapel Hill, and a B.A. from Columbia University. Professor Rosenberg joined the faculty of William & Mary Law School in 1982. He has served as a member of the Executive Board, Historic Rivers Land Conservancy, Inc. and the Planning Commission, York County. Rosenberg also has served as a member of the Chesapeake Bay Local Assistance Board and on the Editorial Board for the *Washington Lawyer*.

Professor Lynda Butler. Professor Butler is the Chancellor Professor of Law and Director, William and Mary Property Rights Project at William & Mary Law School. Professor Butler specializes in property rights and property law, land and water use, and environmental policy. She received her J.D. from the University of Virginia and her B.S. from The College of William & Mary. Prior to joining the William & Mary faculty, she practiced law at Wilmer, Cutler & Pickering in Washington, D.C. From 2000-2008 she served as Vice Dean and from 2008-2009 as Interim Dean of the Law School. A leading expert on Virginia coastal law, Professor Butler is a co-author of *Virginia Tidal and Coastal Law* and has authored many articles, including ones in *Southern California*, *Illinois*, *Brigham Young University*, and *William and Mary Law Review*. For many years, she was the faculty advisor to the *William and Mary Environmental Law and Policy Review*.

Sharon Pandak. Sharon Pandak is partner at Greehan, Taves, Pandak & Stoner, PLLC, which serves as legal consultants and litigation counsel for Virginia local governments, primarily in the fields of zoning and land use, property valuation, personnel and public safety law. She focuses on diverse legal issues facing localities, other public entities, and associations interested in public policy, including land use, public safety, taxation and economic development issues. She litigates in State and Federal court, and handles appeals in the Virginia Supreme Court, Federal Courts of Appeal, and U.S. Supreme Court. Ms. Pandak has worked with regional entities, appeared before the General Assembly and regulatory bodies, and worked on congressional legislation. She also presents seminars on local government issues. Ms. Pandak served as

County Attorney for Prince William County for 15 years and prior to that as Deputy and Assistant County Attorney.

Lewie Lawrence. Lewie Lawrence was born and raised in Gloucester County, Virginia. He worked for seven years for the Virginia Institute of Marine Science on the Research Vessels Langley and Bay Eagle. Presently he serves as the Director of Regional Planning for the Middle Peninsula Planning District Commission.

Jim Redick is the Director of Emergency Preparedness and Response for the City of Norfolk, Virginia. A Certified Emergency Manager with the International Association of Emergency Managers (IAEM) and the 2012 Virginia Emergency Management Professional of the Year, Mr. Redick was appointed to Governor McDonnell's Secure Commonwealth Panel in 2010 where he is Co-Chairing a newly established Sub-Panel focused on Recurrent Flooding.

Jim holds a Bachelor's degree in Organizational Leadership and Management from Regent University and a Master's Degree in Public Administration from Old Dominion University and is an adjunct instructor for American Military University teaching courses in Disaster Planning, Response and Incident Command. His passion in the field includes cross-sector collaboration, use of technology and critical infrastructure protection.

Joseph DuRant. Joe DuRant is a Deputy City Attorney for the City of Newport News, and his practice concentrates in the areas of environmental law, eminent domain, bankruptcy and utilities. He has been with the City since 2006. Prior to that, Mr. DuRant was an Assistant City Attorney for the City of Chesapeake from 1999 to 2006, and concentrated in the same general areas. Mr. DuRant is a graduate of the University of Virginia, both undergraduate (B.A. English 1974) and also of the Law School (J.D. 1985). He has been a practicing attorney in Virginia since 1985, and prior to working with the City of Chesapeake he was in private practice in Newport News and Hampton, Virginia.

Mr. DuRant is a member of the Local Government Attorneys of Virginia, and he currently chairs its AD Hoc Committee on Chesapeake Bay Regulation and serves as the Vice Chair of its Eminent Domain Committee. Since 2009, he was a speaker at seminars for that organization on the topics of stormwater regulation, eminent domain, and utility connections.

David Hansen. Dave Hansen, as Deputy City Manager for the City of Virginia Beach, assists City Manager James K. Spore by leading the development of the City's annual budget, its Capital Improvements Program and all financial forecasting, analysis and management through his oversight of the Departments of Finance and Management Services.

Mr. Hansen's career in financial, technology, infrastructure, and capital improvement management has spanned over three decades. He joined the Virginia Beach government team in April 2006 following his assignment as the Deputy Chief of Staff for Resource Management for the U.S. Army's Training and Doctrine Command headquartered at Fort Monroe. An officer in the U.S. Army, he also held positions as commanding officer and district engineer of the Army Corps of Engineers Norfolk district; director of public works for Fort Eustis and Fort Story; senior

combat engineer trainer at the Army's National Training Center in Fort Irwin, Calif.; engineer battalion commander in the 1st Cavalry Division; and executive officer to the Director of the Army budget at the Pentagon.

Mr. Hansen holds a Master of Science degree in Strategic Studies and Logistics from the Industrial College of the Armed Forces, a Master's in Business Administration and Contracting from the Florida Institute of Technology, and a Bachelor of Science degree in Business Administration and Accounting from the University of Central Florida.

Senator John Watkins. Senator John C. Watkins represents Virginia's 10th Senatorial District which includes Powhatan County, and parts of Chesterfield County and Richmond City. He has served in the Senate since 1998 and prior to that served in the House for 16 years. He serves on five committees in the Senate: Agriculture, Conservation and Natural Resources, Commerce and Labor (Chairman), Finance, Rules and Transportation.

In the private sector, Senator Watkins is the Chairman of the Board of Watkins Nurseries and sits on the Board of Trustees of CJW Medical Center; and chairs the Board of Directors of Essex Bank and Community Bankers Trust.

He is a 1969 graduate of Virginia Tech and lives in Midlothian with his wife, Kathy. Senator Watkins also serves on a number of committees and boards: Medicaid Innovation and Reform Commission, the Commission on Unemployment Compensation, the Virginia-North Carolina High-Speed Rail Compact Commission, the Joint Legislative Audit and Review Committee, and the Virginia Geographic Information Network Advisory Board.

Joe Lerch. Joe Lerch is the Director of Environmental Policy for the Virginia Municipal League. Joe is a former local government planner who also has worked for the Chesapeake Bay Foundation. Before joining the league staff in 2009, he worked most recently as principal planner for the City of Richmond. Joe also has worked as a planner in the City of Fairfax and in Spotsylvania County. He worked as senior land planner for the bay foundation for seven years beginning in 2001. In addition, he served as a planning commissioner for the City of Fredericksburg in 2004-2006. As director of environmental policy, Lerch represents the interests of member local governments in the General Assembly, staffs the Environmental Quality Policy Committee and oversees the Go Green Virginia environmental initiative. He graduated from The College of William & Mary in 1988 with a bachelor's degree in Geology and holds a master's degree in urban and regional planning from Virginia Tech.