Great Lakes Community Resilience:

A No Adverse Impact Approach

Workshop Report

August 19, 2014

Prepared by: Bridget Faust, Project Research Specialist,
Association of State Floodplain Managers

Table of Contents

Introduction

Questions and concerns related to the legality of zoning ordinances, land acquisition, and the implementation of new permitting requirements in the floodplain have historically been some of the most frequently posed to Association of State Floodplain Managers' (ASFPM) Executive Office staff. As a result, ASFPM designed a workshop series that provided critical guidance on these legal issues based on the ASFPM-produced *No Adverse Impact* (NAI) approach to floodplain management. Recognizing that each state would likely have different concerns, these workshops were designed to provide ample time to discuss unique regional issues. Although many of these workshops have been administered to oceanic coastal states, never before has this programming been delivered in the Great Lakes Region.

In the last five years, the Great Lakes have been subject to unprecedented attention. Federal initiatives like the Great Lakes Restoration Initiative, have provided a critical funding for the research community, non-profit organizations, local units of government, and state and federal agencies allowing them to focus their attention on the region's unique needs. In response to this shift in national focus, ASFPM became a partner of NOAA's Digital Coast initiative ASFPM also worked to develop products that would assist the coastal floodplain managers and other practitioners in the region to plan for a more resilient future. The development of the *Great Lakes Community Resilience: A No Adverse Impact Approach* workshop is just one of the activities that has resulted from this effort. On August 19th, 2014 this, first of its kind workshop, was held in Milwaukee Wisconsin.

Planning for the *Great lakes Community Resilience* workshop began in the spring of 2014 when staff at the Association of State Floodplain Managers (ASFPM) began brainstorming how information on takings, liability, and application of the Public Trust Doctrine, could be shared with the Great Lakes managerial community. With funding from the Federal Emergency Management Agency (FEMA), ASFPM partnered with Milwaukee Metropolitan Sewerage District (MMSD) to develop a target audience and objectives for this day-long event.

Specifically this workshop was designed to provide participants with an opportunity to:

1. Learn about the legal and policy frameworks that underlie and guide ASFPM's No Adverse Impact approach to coastal resource management and its relationship with Great Lakes coastal watersheds and climate impacts.
2. Learn from regionally-renowned experts and boots-on-the ground managers about legal and policy approaches to current issues in Great Lakes coastal watersheds, including current real-life discussion on the public trust, ordinary high water marks and setback ordinances.
3. Build relationships with individuals and organizations at all levels across the Great Lakes region including but not limited to: floodplain, stormwater, and coastal resource

managers, land use and hazard mitigation planners, attorneys, insurance providers, business/industry representatives, consultants, and port authorities.

To supplement the foundational material presented by ASFPM in every *No Adverse Impact* workshop (objective 1), members of the previously mentioned Digital Coast Partnership initiative were invited to present on the issues faced by planners, counties, states, and municipalities in the region (objective 2).

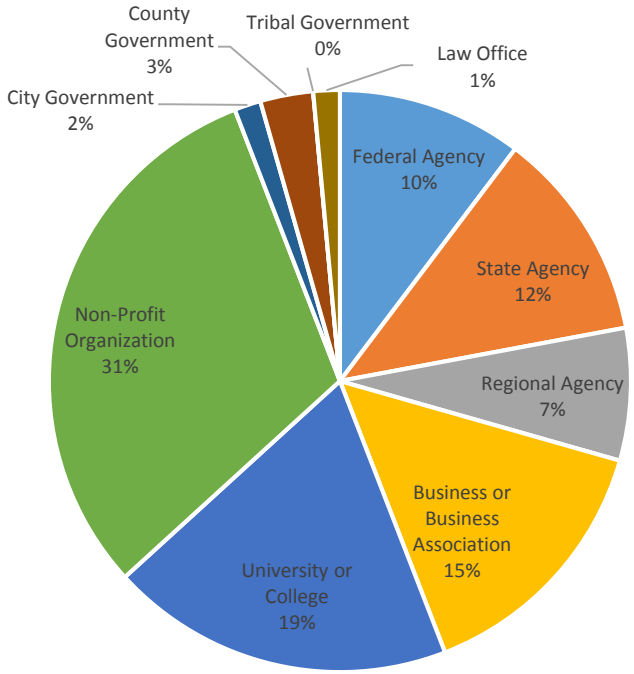
The Digital Coast partners gathered in Milwaukee, WI. Photo Courtesy of: Alyssum Pohl, National Association of Counties & National States Geographic Information Council.

After workshop objectives and an agenda had been formulated. Wisconsin Association for Floodplain, Stormwater, and Coastal Management (WAFSCM), was involved to help ASFPM to create an invitation list. WAFSCM also played a key role in the distribution and socialization of workshop materials including the Save the Date and Formal Invitation. By forwarding these items to their members, WAFSCM helped to ensure that the majority of the workshop's target audience was reached.

Participant Demographics

In total, 70 people participated in the workshop (Appendix D). Attendees represented a variety of organizations, agencies, and companies that manage resources, plan development, and educate on, or research issues affecting the great lakes coastal zone (Figure 1). Overall, the majority workshop of participants worked for non-profit organizations in the area.

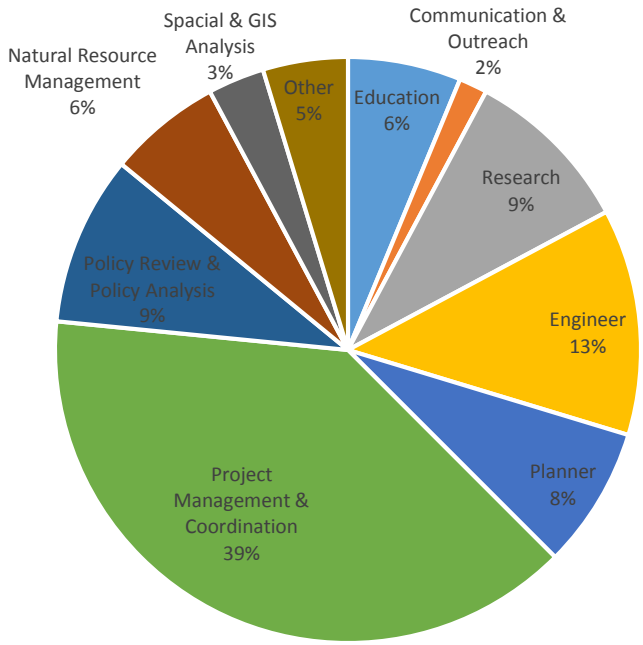
Figure 1. Workshop Participants by Affliation



It should be noted that attendance rates for federal agency staff as well as members of the research community were disproportionately high at this workshop due to external factors. In the days following this workshop, ASFPM also hosted a NOAA Digital Coast partner meeting in Milwaukee, Wisconsin. Planning these events sequentially allowed the Digital Coast Partners, many of which come from federal agencies, to present at or attend the Great Lakes Community Resilience workshop. In addition, during the workshop planning process staff from Wisconsin Sea Grant expressed interest in partnering with ASFPM to continue offering these workshop in each of the Great Lakes states. To encourage other Sea Grant offices to engage in this potential partnership, Sea Grant provided funding to other program leaders to travel to the event.

These results are also reflected in the job titles of workshop participants. Here it becomes evident that the vast majority of attendees were either project managers or played some kind of coordination role for their employer (Figure 2) with very few individuals actually working as practitioner.

Figure 2. Percent Participants by Job Title



Although the workshop planning team had originally envisioned an audience dominated by city and county staff, it was noted by many that the workload placed on these individuals likely limited their ability to travel to events of this nature. Additionally, only 4% of participants cited WAFSCM as the source through which they found out about the workshop. WAFSCM members represented a core subset of the identified target audience because of the fields they frequently work in (floodplain, stormwater, and coastal management). Failure to effectively reach these members was likely another factor contributing to overall low attendance from practitioners.

On the day of the workshop, 87.5% of individuals who registered for the event attended. This high attendance rate evidentiates the necessity for the event. Having the ability to hold the workshop free of charge to all individuals who attended was critical to the success of this event. Providing free Continuing Education Credits to floodplain managers and Continuing Legal Education credits to practicing attorneys were also noted incentives for attendance. ASFPM should continue to offer credits for attendance and make these workshop available for free in order to encourage participation in the future.

Workshop Presentations Overview and Feedback

Presenter Jim Schwab compares planning approaches in Ozaukee County, WI and Berrien County, MI. Photo courtesy of: Bridget Faust, ASFPM.

Over the course of the day, seven 30-45 minute presentations were given. These presentations were placed in order based on topic. In general, presentations became more specific as the day went on. Presentations were ordered in this way to ensure attendees had a strong foundation of knowledge on the legal concepts and challenges faced by practitioners in the Great Lakes region, before examining how one coastal community addressed them. ASFPM's Executive Director, Chad Berginnis, gave the first presentation of the day and focused on some of the common legal issues and questions that arise when working in floodplain or coastal resource management. Berginnis was followed by ASFPM's Senior Project Manager, Alan Lulloff who presented on the *No Adverse Impact* approach and also discussed the actions of a few communities who have adopted this approach. The following presentations covered topics related to building coastal resilience including: a comparative analysis of coastal planning approaches, an overview of state programs like the Coastal Zone Management Program, case studies featuring county-level programs, and the applications of Ordinary High Water Mark and the Public Trust Doctrine in the Great Lakes Region. Presentations concluded with a local example that encompassed many of the topics that had been touched on throughout the day, highlighting how a no-build zoning ordinance was passed in St. Joseph, Michigan (Appendix C).

To encourage participation throughout the day, workshop presenters were asked to include two or three closed-ended, multiple choice questions in their presentations. Prior to the event, ASFPM staff used a program called TurningPoint to convert each presenter's questions into open polling slides that attendees could respond to at the workshop. On the day of the workshop, answers to these polling questions were collected using clickers. These clickers are small remotes that allow users to simply push a button and anonymously answer multiple choice questions in real time. At the workshop, each participant was given a clicker to record

their answers. Out of the seven presentations that were given, five used clickers. Overall, these clickers were very well received by presenters and attendees alike. Presenters noted that the clicker questions allowed them to gather data about their audience and adapt their presentations in response to the answers they received. Participants appreciated being actively engaged by each presenter.

Workshop participants discuss and map future land use in the Mullet River watershed. Photo courtesy of: Jeff Stone, ASFPM.

In addition to the previously mentioned presentations, a one hour and fifteen minute mapping exercise was conducted just before lunch. For this mapping exercise participants were given a set of instructions and two maps of the critical facilities and infrastructure in the Mullet River watershed, one showing potentially restorable and existing wetlands as well as current land use patterns in the area, and another showing existing flood hazard areas and planned future land use (Appendix E). After comparing these maps, participants were asked to identify and map key geographic areas to conserve, restore or maintain, and areas suitable for future residential and/or commercial growth on a piece of Mylar. Through this mapping exercise participants were given the opportunity to learn about one another's perspectives on conservation and development, as well as the different challenges that are faced when planning future land use. Approximately half of all attendees felt that the mapping exercise was on target with the objectives of the workshop overall. That said, another quarter of participants noted that more than one activity was needed to meet their expectations.

Workshop Evaluation

Upon arriving at the workshop, all participants and presenters were given a 1-page evaluation to complete after presentations had ended (Appendix F). The response rate for this brief evaluation was 67%. Overall, 93% of participants noted that the workshop on the whole was excellent or good. The same percentage noted that they felt the content that was presented was relevant to the workshop topic. Another 91% felt that the workshop did an excellent or

good job covering topics as expected/advertised. Another 89% of participants felt that they could apply the knowledge gained in the workshop to their current jobs. These are all very encouraging statistics that speak highly of the event on the whole.

In the future there are opportunities for development, for example, just 77% of respondents felt that they were given the tools to implement the information shared at the workshop. During the workshop many participants noted that they had very little knowledge on many of the resources shared by presenters including: NOAA Digital Coast, the Community Rating System (CRS), and the Systems Approach to Coastal Engineering (SAGE) initiative. This critique is also reflected in many of the responses gathered from the evaluation's open-ended questions. One common suggestion from participants was to provide links to and background information on the tools and programs presented on during the day.

Another opportunity for development in the future relates to the alignment of workshop objectives and the presentations given. Just 38% of respondents felt the workshop's learning objectives were excellently outlined and achieved. Early on in the planning process workshop objectives were established, and it was from these objectives that the agenda for the day was designed. Although individual meetings between the workshop planning team and each presenter were held to discuss these workshop objectives and the target audience, little coordination was done after those initial meetings. Holding additional follow-up meetings in the months leading up to the workshop and implementing a review process for all presenters' slides in advance of the event could help to ensure that presentations given clearly align with the objectives outlined.

One final opportunity for development in the future relates to the scope of presentations. In general, the presentations given were very well received with many participants noting that they appreciated the breadth of topics and perspectives shared on building coastal community resilience in the great lakes region. Despite this general acclaim, many participants noted that they would have liked more time for questions and answers. Due to the large amount of speakers and topics covered, keeping workshop presentations within the allotted time-length was a significant challenge from an administrative perspective. Moreover, it hindered workshop participant's ability to freely ask questions throughout the day. Case studies touched on during presentations that were not from within the great lakes region were also problematic for audience members in that they often addressed issues or covered programs that were not applicable to the Great Lakes. By narrowing the scope of the workshop both topically and geographically, both of these problems could likely be resolved.

Conclusions, Recommendations, and Next Steps

Conclusions and Next Steps

The Great Lakes Community Resilience: A No Adverse Impact Approach workshop provided participants with the opportunity to learn about the core tenants of ASFPM's *No Adverse Impact* approach to floodplain management, common legal issues faced by natural resource practitioners and planners in the region, and how different programs, tools, and resources have been implemented to achieve coastal resilience goals in communities, counties, and states across the nation. Through this workshop, the planning team was also presented with the invaluable opportunity to learn from participants about the local challenges and concerns that they encounter regularly.

This workshop was just the first of what will likely become a series of workshop throughout the Great Lakes region. ASFPM will work to adapt future workshops based on the comments received during and after this workshop. This is done in an effort to ensure that each iteration of this workshop improves upon the last, further meeting the needs and expectations of participants. Next steps for developing this workshop series include: identifying potential local hosts and partners for future workshops, selecting a location for the next workshop, convening the workshop planning team to discuss opportunities for future development, further refining workshop outreach strategies, and developing additional activities to engage participants during the workshop.

Recommendations

Based on the feedback aggregated from workshop planners, presenters, and, participants the following recommendations are being made for future iterations of this event:

1. Partner with local organizations who are knowledgeable on the interests and time-constraints of target audience members, to plan and recruit for future workshops.
2. Work with presenters prior to the workshop to set clear expectations in relation to the scope and length of presentations.
3. Provide information on the tools, programs, and other resources available to implement strategies highlighted in presentations.
4. Develop and include additional interactive exercises to further participant engagement and provide additional opportunities for relationship building.

Appendices

Appendix A. Workshop Planning Team

First Name	Last Name	Position	Organization	Email
Jeff	Stone	Project Manager	Association of State Floodplain Managers	jeff@floods.org
Chad	Berginnis	Executive Director	Association of State Floodplain Managers	cberginnis@floods.org
Alan	Lulloff	Senior Project Manager	Association of State Floodplain Managers	alan@floods.org
David	Fowler	Senior Project Manager	Milwaukee Metropolitan Sewerage District	dfowler@mmsd.com
Bridget	Faust	Project Research Specialist	Association of State Floodplain Managers	bridget@floods.org

Appendix B. Workshop Agenda

Great Lakes Community Resilience: A No Adverse Impact Approach

Application of No Adverse Impact for Coastal Communities

Location & Objectives

Zelazo Center for the Performing Arts
2419 E Kenwood Blvd. Room #250.
University of Wisconsin-Milwaukee
Milwaukee, WI 53211

Join us as we introduce tools and approaches that reduce flood risk and implement natural and beneficial functions of the floodplain by planning and managing for future conditions in the Great Lakes. This workshop will provide participants with an opportunity to:

- Learn from regionally-renowned experts and boots-on-the ground managers about legal and policy approaches to current issues in Great Lakes coastal watersheds, including current real-life discussion on the public trust, ordinary high water marks and setback ordinances.
- Learn about the legal and policy frameworks that underlie and guide ASFPM's No Adverse Impact approach to coastal resource management and its relationship with Great Lakes coastal watersheds and climate impacts.
- Build relationships with individuals and organizations across the Great Lakes region including but not limited to: floodplain, stormwater, and coastal resource managers, land use and hazard mitigation planners, attorneys, insurance providers, business/industry representatives, consultants, and port authorities.

Partners

MMSD

FEMA

NAI No Adverse Impact

AFSCM

For more information please contact:
Bridget Faust, bridget@floods.org,
(651) 983 - 0235

Agenda

8:00 AM	**Registration**
9:00 AM	**Welcome and Introductions** David Fowler, CFM. - Milwaukee Metropolitan Sewerage District
9:15 AM	**Floodplain Management Legal Issues** Chad Berginnis, CFM. Executive Director - Association of State Floodplain Managers
9:45 AM	**No Adverse Impact - Overview** Alan Lulloff, P.E., CFM. - Association of State Floodplain Managers
10:30 AM	**Break**
10:45 AM	**Resilient Coastal Communities for the Great Lakes** Jim Schwab, AICP. - American Planning Association
11:15 AM	**Interactive Exercise - Wetland Restoration and Land Use Planning in the Mullet Creek Watershed, Sheboygan County, WI** Laura Flessner - NOAA Coastal Fellow; ASFPM & The Nature Conservancy Katherine Kahl, Ph.D. - The Nature Conservancy John Nelson - The Nature Conservancy
12:30 PM	**Lunch On-Site (Free)**
1:15 PM	**The Diverse Range of Legal and Policy Issues for State Coastal Zone Managers** Bradley Watson, J.D. - Coastal States Organization Mike Friis - Wisconsin Coastal Management Program
2:00 PM	**Planning and Policymaking for Coastal Resilience: the County Perspective** Jen Horton - National Association of Counties
2:30 PM	**Break**
2:45 PM	**Drawing Lines in Law Books and on Sandy Beaches** Richard Norton, Ph.D., J.D. - University of Michigan - Urban and Regional Planning Program
3:15 PM	**Developing a No-Build Zoning Ordinance in St. Joseph, MI** John Hodgson, CFM. - City of St. Joseph, Michigan Michael Morphey, P.E., LEED AP. - Edgewater Resources, LLC.
3:45 PM	**Closing Remarks, Additional Resources, and Course Evaluation**
4:30 PM	**Adjourn**

Appendix C. Speaker and Facilitator Biographies

Master of Ceremonies:
David Fowler, CFM. Milwaukee Metropolitan Sewerage District.

David is a Senior Project Manager for Milwaukee Metropolitan Sewerage District. With a Master of Science in Stream Ecology, Dave has worked as a Fisheries Biologist with the Michigan Department of Natural Resources and later as an Aquatic Biologist for the MMSD where he has been for the past 24 years. He has been active in the District's ongoing efforts toward water quality improvement, watershed management, urban stream rehabilitation and flood management.

1. Floodplain Management and Legal Issues:
Chad Berginnis, CFM. Association of State Floodplain Managers

Mr. Berginnis became Executive Director of ASFPM in July of 2012, after joining the Association staff as Associate Director in 2011. Since 2000, he served the Association as Insurance Committee Chair, Mitigation Policy Committees' Coordinator, Vice Chair, and Chair. He has a Bachelor of Science in natural resources from Ohio State University. Since 1993, his work has focused on floodplain management, hazard mitigation, and land use planning at the state, local and private sector level. As a state official, Mr. Berginnis worked in the Ohio Floodplain Management Program and was Ohio's State Hazard Mitigation Officer. As a local official, Mr. Berginnis administered planning, economic development and floodplain management programs in Perry County, Ohio. In the private Sector, Mr. Berginnis was the national Practice Leader in hazard mitigation for Michael Baker Jr. Inc.

2. No Adverse Impact Overview:
Alan Lulloff, P.E., CFM. Association of State Floodplain Managers.

Alan Lulloff is Science Services Program Manager for the Association of State Floodplain Managers (ASFPM) managing research andoutreach projects for the association since 2005. In addition to ASFPM's published reports, ASFPM's Science Services program also has developed training materials for one-day workshops on Coastal No Adverse Impact and has conducted ten Coastal No Adverse Workshops over the past three years on the Atlantic Coast and the Gulf of Mexico. Mr. Lulloff previously spent 32 years with the Wisconsin Department of Natural Resources (WDNR) in floodplain and water quality management. Early in his career, he worked in wastewater, water supply and groundwater management with the last 15 years in floodplain management, coastal engineering and dam safety. Mostly recently he was the Floodplain Mapping Coordinator and Coastal Engineer for the WDNR. Mr. Lulloff holds an Environmental Engineering degree from the University of Wisconsin - Milwaukee, is a registered professional

engineer in Wisconsin and a Certified Floodplain Manager. Graduate studies have included remote sensing and Geographic Information Systems - Certified ARC/INFO Instructor - ESRI (expired).

3. Resilient Coastal Communities for the Great Lakes:
Jim Schwab, AICP. American Planning Association.

Mr. Schwab joined the American Planning Association in November 1985. Originally the assistant editor of *Planning*, APA's monthly magazine, he joined APA's research department in August 1990. He serves as the co-editor of a monthly publication, *Zoning Practice*. He is the Manager of APA's Hazards Planning Research Center in the Chicago office.

Mr. Schwab is the project manager for "Planning for Post-Disaster Recovery: Next Generation," an ambitious effort funded by the Federal Emergency Management Agency (FEMA) to completely rewrite *Planning for Post-Disaster Recovery and Redevelopment* (1998), which APA produced under a cooperative agreement with FEMA. This new effort includes substantial multimedia web tools including the Recovery News blog. Mr. Schwab was also project manager and general editor for the FEMA-funded APA Planning Advisory Report, *Hazard Mitigation: Integrating Best Practices into Planning*, released in May 2010. He was the general editor and project manager for *Planning for Drought*, a PAS Report released in January 2014 and produced under a subcontract with the University of Nebraska's National Drought Mitigation Center. Under an APA subcontract with the Association of State Floodplain Managers, he has also been involved in a project providing training and online resources to communities affected by Great Lakes coastal hazards.

Mr. Schwab was the sole author of two PAS Reports in the 1990s, *Industrial Performance Standards for a New Century* and *Planning and Zoning for Concentrated Animal Feeding Operations*. He served as the project manager for a FEMA-supported project in which APA has developed training for planners on the planning provisions of the Disaster Mitigation Act of 2000, and for the Firewise Communities Post-Workshop Assessment. With Stuart Meck, he co-authored the 2005 PAS Report, *Planning for Wildfires.* He was also the principal investigator and primary author of *Tribal Transportation Programs*, produced for the Transportation Research Board. He was the project manager and general editor for the PAS Report, *Planning the Urban Forest: Ecology, Economy, and Community Development*, released in January 2009, and led the subsequent development of a training workshop based on that report, with a matching grant from the U.S. Forest Service. Finally, Mr. Schwab is APA's lead representative for its partnership with NOAA's Digital Coast.

Mr. Schwab has worked overseas several times on hazard-related planning: in the Dominican Republic overseeing site planning training in 2001, in Sri Lanka following the Indian Ocean

tsunami, speaking at a disaster recovery conference in Taiwan in 2006, as a Visiting Fellow of the Centre for Advanced Engineering in New Zealand in 2008, and speaking in May 2013 at a European Union conference on cities and climate change in Venice, Italy.

Mr. Schwab is also the author of two books. The first, *Raising Less Corn and More Hell: Midwestern Farmers Speak Out*, was published in 1988 by the University of Illinois Press. It is an oral history of the farm crisis that affected the Midwest during the 1980s. The second, *Deeper Shades of Green: The Rise of Blue-Collar and Minority Environmentalism in America*, was released by Sierra Club Books in the fall of 1994. He is presently developing plans for a new book about the 1993 and 2008 Midwest floods.

4. Wetland Restoration and Land Use Planning in the Mullet Creek Watershed, Sheboygan County, WI.
Laura Flessner, The Nature Conservancy & Association of State Floodplain Managers.

Laura Flessner received her undergraduate degree from Virginia Tech and a Master's Degree in Coastal Management and GIS certification from the University of North Carolina Wilmington. She is currently a NOAA Digital Coast Fellow funded by a partnership between the Association of State Floodplain Managers and The Nature Conservancy. She is based in TNC's Seattle office and her work focuses on integrating floodplain and coastal strategies that support disaster risk reduction and adaptation, emphasizing the important role of nature-based and hybrid solutions.

John Nelson, The Nature Conservancy.

John Nelson is employed by The Nature Conservancy, acting as the Project Manager on the Sheboygan River Buffer Initiative. He began working for The Conservancy in June 2011 after retiring from the Wisconsin Department of Natural Resources. There he served for 30 years as a Senior Fisheries Biologist and Regional Fisheries Operation Supervisor.

As Project Manager with The Conservancy, John is testing the strategy of "targeting" specific fields in a small HUC 12 watershed with the greatest potential for phosphorus and soil loss. The SNAP-Plus model, developed by the UW Soil Sciences Department, was used to identify those fields. John and partner agency staff then worked with farmers to incorporate farming practice changes which were expected to control those losses.

John expanded the project to an adjacent HUC 12 watershed in an effort to measure the potential for a local sewage treatment plant to purchase phosphorus credits in that watershed. SNAP-Plus is the tool being used to measure that potential.

Katherine Kahl, PhD. The Nature Conservancy.

Katie works with staff in Michigan and the Great Lakes to build partnerships and design strategies that implement long term conservation and policy objectives and on-the-ground conservation action. Her current work focuses on managing the Western Lake Erie Coastal Conservation Vision project, engaging conservation, business and community interests from the US and Canada along a 150-mile stretch of Lake Erie coast (through Ontario, Michigan and Ohio) to map places in which local conservation efforts could optimize regional benefits for people and nature.

Prior to joining The Nature Conservancy in 2011, Katie was the Director of Conservation and Policy Research at Heart of the Lakes Center for Land Conservation Policy, a statewide policy advocate for Michigan's 30 regional land conservancies. She has also managed a 7-county green infrastructure project for West Michigan Strategic Alliance, connecting local units of government, business and conservation interests who share common, regional land use priorities. Katie earned her doctorate and master's degrees from Michigan State University's Department of Fisheries & Wildlife, with an emphasis in landscape ecology. She is based in Lansing, Michigan.

5. The Diverse Range of Legal and Policy Issues for State Coastal Zone Managers: Bradley Watson, J.D. Coastal States Organizations.

Bradley Watson is CSO's Legal Counsel and Director of Coastal Resilience and also staffs the Beach and Inlet Management Work Group, the Coastal NPS Work Group, and the Adaptation Work Group. Spanning parts or all of four Congresses, Bradley worked for the Committee on Transportation and Infrastructure under the late Chairman James L. Oberstar, as a member of the investigations team for the Senate Armed Services Committee under Senator Carl Levin, and as a senior legislative staffer for Congresswoman Eddie Bernice Johnson. Bradley is a graduate Tulane University in New Orleans, LA, and the evening program at the Columbus School of Law at the Catholic University of America.

Michael Friis, Wisconsin Coastal Management Program.

Mike Friis serves as the Program Manager for the Wisconsin Coastal Management Program, at Wisconsin's Department of Administration. Mr. Friis earned his BS in landscape architecture from the University of Wisconsin Madison in 1989. Before joining the Wisconsin Coastal Management Program, Mike spent time in the Peace Corps, and in various positions within Wisconsin State and Local Government Agencies.

6. Planning and Policy Making for Coastal Resilience: the County Perspective: Jen Horton, National Association of Counties.

Jen serves as Program Manager for community and economic development at NACo. Before joining NACo, Jen served as a Planning and Policy Fellow at EPA's Office of Sustainable Communities, where she managed technical assistance programs for local governments and communities related to land use, smart growth and economic development. Prior to joining EPA, Jen worked for the Washtenaw County Economic Development and Energy Office supporting the countywide brownfield redevelopment program. Jen earned a Master of Urban and Regional Planning and a Master of Science in Natural Resources and Environment from the University of Michigan.

7. Drawing Lines in Law Books and on Sandy Beaches:
Richard Norton, Ph.D., J.D. University of Michigan.

Richard K. Norton is Associate Professor and Program Chair of the Urban and Regional Planning Program at the University of Michigan. He teaches and conducts research in the areas of planning law, land use and environmental planning, coastal area management, and sustainable development. He also contributes actively to the Michigan Association of Planning (MAP) by serving on its planning law committee. Through those efforts he has taken the lead in preparing draft legislation for the Michigan Legislature to reform the state's planning and zoning enabling laws, including reforms adopted by the Legislature in 2006 and 2008. He has also written amicus curiae appellate briefs to the Michigan Court of Appeals and the Michigan Supreme Court on behalf of the American Planning Association and MAP regarding planning and zoning disputes in the state. He earned his Ph.D. in city and regional planning and his J.D. at the University of North Carolina at Chapel Hill. He also holds master degrees in public policy studies and environmental management from Duke University. Prior to completing his graduate studies, he worked in professional practice as a consulting environmental policy analyst and planner in Washington, D.C., and San Francisco, California.

8. Developing a No Build Zoning Ordinance, St. Joseph, MI:
John Hodgson, the City of St. Joseph, Michigan.

John Hodgson is the Community Development Director for the City of St. Joseph, Michigan. In 1989 he earned his degree from Harvard University. John has more than 20 years of experience in his current position, where he provides critical oversight and guidance to the development of the city of St. Joseph.

Michael Morphey, P.E., LEED AP. Edgewater Resources, LLC.

Mike Morphey is a Project Manager at Edgewater Resources, LLC, in St. Joseph, Michigan, where he manages marine and coastal projects. Mike earned a B.A. in Civil Engineering from Michigan State University in 2002 and spent eight years at an engineering consulting firm in Chicago before beginning his current role in 2010. He is responsible for the planning,

permitting, design, and construction of waterfront projects throughout the Midwest, Great Lakes, and abroad.

Appendix D. Workshop Attendance List

Total Attendees: 70 individuals

First	Last	Position	Organization	Email
Kathleen	Angel	Coastal Hazards Coordinator	Wisconsin Coastal Management Program/State of Wisconsin	kathleen.angel@wisconsin.gov
Ashley	Bartlein	Water Resource Engineer	AECOM	Ashley.Bartlein@aecom.com
Marquette	Baylor	Deputy Director	Office of Senator Tammy Baldwin	Marquette_Baylor@baldwin.senate.gov
Megan	Bender	Water Resources Engineer	Southeastern Wisconsin Regional Planning Commission	mbender@sewrpc.org
Chad	Berginnis	Executive Director	Association of State floodplain Managers	cberginnis@floods.org
Kristina	Betzold	Environmental Analysis and Review Specialist	Wisconsin DNR	kristina.betzold@wisconsin.gov
Nadia	Bogue	Environmental Projects Coordinator	Sixteenth Street Community Health Centers	nadia.bogue@sschc.org
Mark	Breederland	Educator	MI Sea Grant Extension	breederl@msu.edu
Bill	Burgess	Washington Liaison	Nation States Geographic Information Council (NSGIC)	william.burgess@comcast.net
Lori	Cary-Kothera	Operations Manager	NOAA Coastal Services Center	lori.cary-kothera@noaa.gov
Gene	Clark	Coastal Engineering Specialist	University of Wisconsin Sea Grant Institute	gclark1@uwsuper.edu
JoEllen	Donovan	Senior Engineer	Stantec	joellen.donovan@stantec.com
Gail	Epping Overholt	Natural Resources Educator	University of Wisconsin-Extension	gail.overholt@ces.uwex.edu
Bridget	Faust	Project Research Specialist	Association of State floodplain Managers	bridget@floods.org

Elizabeth	Felter	NOAA Digital Coast Fellow	American Planning Association & Coastal States Organization	efelter@planning.org
Laura	Flessner	NOAA Digital Coast Fellow	The Nature Conservancy & Association of State Floodplain Managers	laura.flessner@tnc.org
David	Fowler	Senior Project Manager	David Fowler	dfowler@mmsd.com
Susan	Fox	Project Manager and Training Specialist	NOAA Coastal Services Center	Susan.Fox@noaa.gov
Mike	Friis	Program Manager	Wisconsin Coastal Management Program	michael.friis@wisconsin.gov
Dennis	Grzezinski	Attorney	Law Office of Dennis Grzezinski	dennisglaw@gmail.com
David	Hart	Senior Scientist	Wisconsin Sea Grant Institute	dhart@aqua.wisc.edu
Mike	Hastreiter	Intern	University of Wisconsin Sea Grant Institute	hastmd20@uwgb.edu
Gary	Heinrichs	National Flood Insurance Program Coordinator	Wisconsin DNR	gary.heinrichs@wi.gov
Matt	Heyroth	Assistant Zoning Administrator	Brown County	heyroth_mr@co.brown.wi.us

Tim	Hillier	Vice President	CDM Smith	hillierts@cdmsmith.com
Jason	Hochschild	GIS Analyst and Applications Specialist	Association of State Floodplain Managers	gisjason@floods.org
John	Hodgson	Community Development Director	City of St. Joseph, MI	jhodgson@sjcity.com
Jen	Horton	Program Manager	National Association of Counties	jhorton@naco.org
Thomas	Hunt	Senior Scientist	Applied Ecological Services	tom.hunt@appliedeco.com
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Appendix E. Mapping Exercise Materials

1. Mapping Exercise Instructions:

Applying Tools and Strategies for Planning and Conservation

Identifying Watershed Lands to Conserve and Develop

As a planner you must deal with issues related to growth, conservation and restoration. You need to assess the various natural resources, natural hazards, areas of development and areas that need to be protected. Watersheds in the Great Lakes take on additional complexities due to sediment runoff that can impact the lakes. From this assessment you make recommendations identifying priority conservation and growth areas for the regional comprehensive plan.

The City of Plymouth, a Sheboygan River watershed community, is interested in maintaining their agricultural base and the integrity of their natural resources, to support local farmers while still being able to support growth and attract new residents and businesses. Specific community goals include:

- Protect or restore freshwater wetlands, natural areas and green infrastructure to better manage sediment runoff for water quality and phosphorous reduction and to mitigate flooding due heavy precipitation and storms.
- Direct new development toward existing developed lands and infrastructure.

Assignment:

Identify possible areas for conservation and growth, set priorities, and explain reasons for selecting them. Specifically, identify:

- **Key geographic areas to conserve, restore or maintain**
- **Areas suitable for future residential and/or commercial growth**
- **Are there other risk or vulnerability factors that should be considered?**

Process Steps:

1. First identify currently **Protected Land:** start by placing the clear worksheet (Mylar) over the "Natural Resources" map showing wetlands, landcover, etc. **Draw** in the currently protected lands or parks that have been designated as conservation management lands. If you're familiar with the area, add any additional protected land that may not be on the map.

2. Next identify the currently **Developed Land** by using the same map and showing where the cities and towns are located. Developed areas are usually indicated with high local street density. **Draw** these areas on the Mylar.

3. On the "Hazards" map, reference the FEMA Flood Zone, Forested or Ag lands, and Flood Hazard Areas map layers to identify **Land to be Conserved**. Remember that establishing forested stream buffers, limiting impervious surfaces and protecting forest cover within the watershed are very important to maintaining the health of streams and wetlands. Add any additional land, such as areas that can be used for stormwater conveyance or storage. **Draw** these areas on the Mylar - and indicate their importance.

4. Next, identify the **Land to be Developed** by referring to the *current* landuse on the "Natural Resources" map and the *future* development projected over the next 20 years on the "Hazards" map. Compare the two maps and use the "Natural Resources" map to identify ways in which you could adjust future development plans to reduce socio-economic risk. Think about directing growth to locations near existing development infrastructure, protection of critical drainage areas and wetlands and any other factors, which will help maintain the character of the area and protect critical resources. **Draw** these areas on the Mylar.

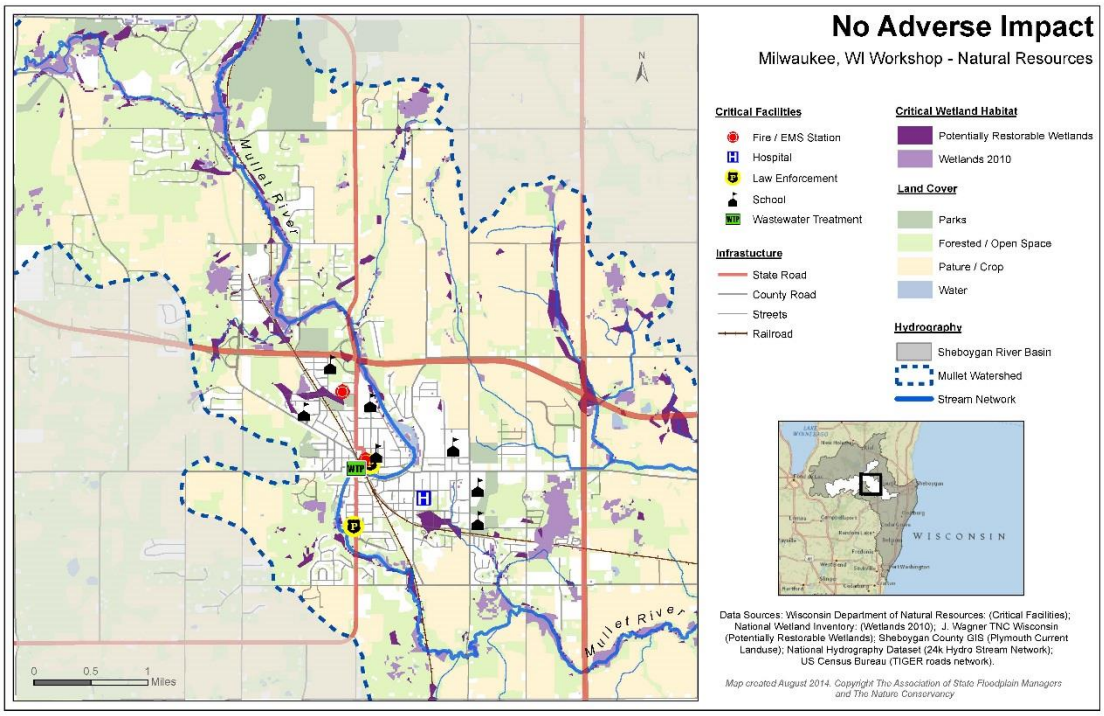
5. Finally, consider **Lands to be Restored or Revitalized** - these areas could currently be developed lands, that could ease pressure on open spaces, or areas flood hazard areas that are too wet to farm or develop and have enabling conditions for wetland restoration.

Results and Report

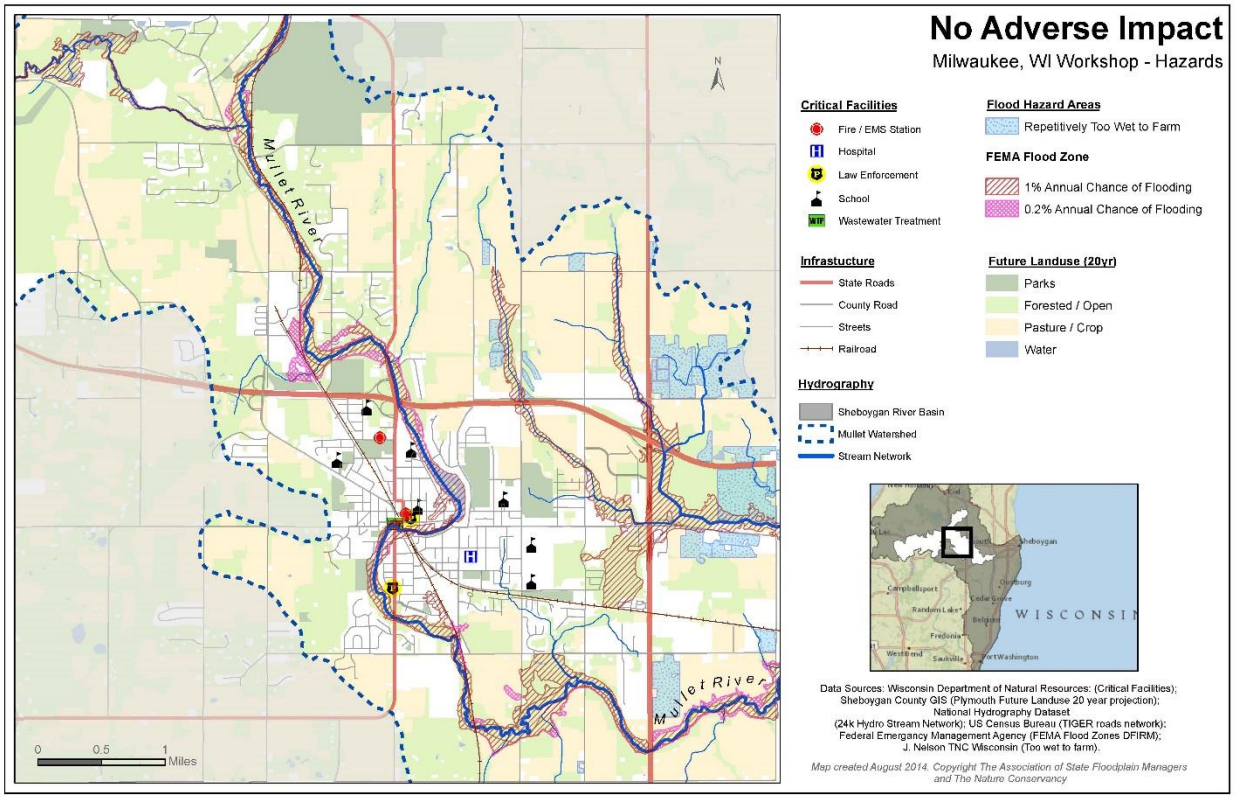
Identify your top three geographic areas for conservation and/or development. Circle them on your Mylar overlay and label them.

1. **Start** by placing your Mylar over the Natural Resources map. Determine your top three priority areas by considering such factors as:
    - Importance in meeting your goals
    - Size (larger is better for conservation lands)
    - Linkage (contiguous) to other protected lands (for hydrological, wildlife and recreation functions)
    - Risk - from flooding, storm surge, imminent development, etc.
    - Attainability - willing landowners, financial resources, etc.
2. **List other data** that would be helpful and/or needed to guide your analysis
3. **Record the reasons** for selecting each.
4. **Select a spokesperson** to present your plan.

2. Mullet River Watershed, Natural Resources Map:



3. Mullet River Watershed, Hazards Map:



Appendix F. Evaluation Results

Evaluation Response Rate: 47/70 = 67%

Attendee's Name/Agency (*Optional*):	
How did you hear about this workshop? ☐ From ASFPM **49%** ☐ From MMSD **2%** ☐ Other: **13%** ☐ From WAFSCM **4%** ☐ From FEMA **0%** ☐ Word of Mouth **11%** ☐ Email Notice **19%**	Please select all that apply: ☐ ASFPM Member **17%** ☐ CFM Certified **11%** ☐ Other: **45%** ☐ WAFSCM Member **11%** ☐ AICP Certified **2%** ☐ APA Member **11%** ☐ Attorney **4%**

Do you feel you can apply this information to your job? • Absolutely	☐ YES **89%** ☐ NO **0%**
Have we given you the tools to implement this information in your job?	☐ YES **77%** ☐ NO **4%**
Have we given you information that is useful?	☐ YES **87%** ☐ NO **0%**
Would you recommend this workshop for others to attend?	☐ YES **87%** ☐ NO **2%**

Please Evaluate the Workshop:

Workshop Content & Delivery	**Excellent**	**Good**	**Fair**	**Poor**	**N/A**
Learning Objectives were Outlined and Achieved	**38%**	**45%**	**11%**		
Content was Relevant to Topic	**53%**	**40%**			
Course Covered Topics as Expected / Advertised	**55%**	**36%**	**2%**		
Workshop Agenda was well organized	**57%**	**36%**	**2%**		
Workshop Facilities	**32%**	**53%**	**4%**		

Overall Rating	**53%**	**40%**			

Workshop Materials & Information	**On Target**	**Too Much**	**Needs Other**	**Too Few**	**Not on Target**	**N/A**
Activities / Exercises	**49%**	**4%**	**11%**	**4%**	**4%**	
Handout Materials	**77%**		**2%**	**15%**		
Visual Aids	**83%**		**6%**	**2%**		
Amount of Information	**87%**	**2%**	**2%**	**2%**		
Level of Information	**89%**	**2%**	**2%**	**2%**		

- Good job engaging the audience with clicker questions, loved the overlay activity, and awesome that materials are already on a zip drive! So easy!

What about this workshop is relevant to your work?

- Ordinary high water mark vs. elevation based high water mark
- Considerations for working with clients – public and private
- Useful case studies and very specific information on regulatory solutions
- Regulatory and planning issues
- Land use policy, specific Great Lakes issues, natural processes in the Great Lakes
- Zoning, shoreland, and floodplain standards
- General knowledge that planning for adverse impacts is better than avoiding it for takings purposes
- Real case studies, technical background information
- Natural resource restoration, and a number of coastal flood management issues
- Attendees, legal perspective views
- Working with codes and ordinances and municipal processes
- Discussion of great lakes specific issues
- Case studies, educational efforts on technical and legal topics
- Legal considerations, case studies, design comments
- case studies, contact with others doing this work

- Pretty much all of the subject matter
- Understanding the convergence of urban planning, law, and environmental/social ramifications. Better understanding best management practices
- Coastal management, tying flood attenuation with wetlands and water quality
- case studies, current and emerging issues
- All
- Understand the socioeconomic issues that can come along with application of flood-related law
- Bluff regulations, legal issues
- Legal information
- Anything oriented towards planning, so all
- Case studies, policy applications, information for local decision-makers
- Case studies, implementation, and data analysis
- Legal discussion, Ordinary High Water Mark information, and resiliency
- NAI in adoption research in coastal resiliency
- Zoning areas, bluff erosion techniques, wave run-up
- Information about legal issues and informational needs
- Learning about what local governments and organizations are doing to address coastal policies
- Information on the Public Trust Doctrine and green infrastructure
- Coastal flooding issues
- Permitting of coastal structures and development
- Better understanding the coastal management issues facing Great Lakes coastal communities
- Infrastructure, levels variation, Ordinary High Water Mark discussion
- National Association of Counties case studies
- Planning liability issues with floodplain management and coastal resiliency planning
- All coastal discussions

- Networks present at workshop were strengthened. New information to me.
- Coastal, Great Lakes, environmental
- Almost everything – standards, education, information
- I work with marinas to encourage voluntary adoption of environmental best practices; this workshop will help the recommendations I provide and in training marinas to better prepare for coastal hazards

What are the most important legal issues you face as a Coastal Resource Manager, Floodplain Manager, Planner, Attorney, etc.?

- Impacts on adjacent property
- Takings cases
- N/A
- N/A
- Appeals to bad decisions by local governments
- Other energy, water quality issues – this information is not very relevant to my work, more for planners
- N/A
- Municipalities putting priority on revisions and updates
- Takings and restrictions to property use
- Shoreline delineation, Public trust Doctrine
- Permitting issues
- N/A
- Setback ordinances; flooding mitigation; conflicts between property owners and state/local government
- Public Trust Doctrine, takings
- Public Trust areas
- Limitations that the “use value assessment” create in Wisconsin
- I don’t directly face legal issues. I work with counties and municipalities, but not on legal issues.
- Understanding when it is justified for development to be limited based on a floodplain

- Setback regulations
- Regulations governing permitting authority
- floodplain zoning and regulations
- N/A
- Flood protection, freeboard
- coastal resiliency and community feedback
- Variance review
- N/A
- N/A
- Impacts on adjacent properties from permitted projects
- Political support
- Coastal Zone Management Act – Federal consistency
- Explaining Natural Ordinary High Water Mark vs. state standards vs. US Army Corps of Engineers standards
- Safe and sustainable coastal development
- Planning for future conditions with climate change
- Public access issues on Lake Michigan
- N/A
- Flooding at the coast and permit jurisdiction
- Ensuring structures are built in permissible locations
- N/A

How would you change the workshop to make it more useful to you in your job?

- Not sure
- Incorporate some developers
- Great as is!
- Longer! Actually, it was an amazing 1-day workshop but I imagine a 2-day workshop would have twice the benefit ☺
- Focus more on tools used

- Understanding how federal and state partners interpret legislative challenges
- Forecasting regulatory requirements
- Integrating the social/community ramifications of these planning processes
- Perhaps a longer question and answer session at the end or a session for more direct questions and answers.
- Opportunity to share contact information from central location
- More information on water quality, wetlands
- Connecting dots to projects – boots on the ground
- Provide Powerpoints with links to tools and mapping products
- Maybe a little more organization so there is less overlap of presented topics
- Nothing
- Good, no changes
- Would have liked more case study activities to focus talk to local programs/communities
- More decision support tool driven
- Nothing
- Add more costal wave information
- More examples of GIS data and tools
- Techniques for education, coastal NAI
- Would have licked current climate data/projections included
- Less on Coastal States Organization programs
- Apply on a smaller scale (region or state specific)
- What are the most successful education programs/examples that have data to back up success
- N/A
- Have more examples of Great Lakes specific information – but hopefully our input will help with this!

What else do you think we should know or would you like to share with us about this workshop?

- GIS tool sections\Open up to developers, real estate agents, and local governments
- I also really enjoyed meeting other practitioners from a multitude of backgrounds, locations, and practice areas
- Very well done
- Well done!
- Excellent program. Good breadth of topics and multiple points of view, I also very much appreciated the CLE credits. Nice MC-ing by Dave.
- Good facilitation by Dave, great job keeping on schedule and managing to balance with questions
- More specifically how NOAA Coastal tools could be used when developing hazard mitigation plans. Please share agency and presenter's twitter handles
- N/A
- Really enjoyed the workshop; thank you providing the presentations in the USB; provide more information about learning objectives prior to the workshop
- More open discussion
- GIS mapping work was interesting
- Great and well-organized workshop
- Historical data on past damages from flooding in coastal areas
- Liked the use of clickers and interactive exercise/activity, would have liked one more
- Room needed better ventilation; ability to have remote presenters
- More DNR water resources staff, more county staff
- Bring in Wisconsin Wetlands Association to share resources. Have resource exhibits, sharing table. Please share contact information of participants. Economic impact studies of potential savings – include non-economic statistics too (ex: lives saved, etc.). Examples of situations where NAI approach was not taken and also where NAI was used and ID mitigated impacts.
- Ohio Sea Grant received a Coastal Storms grant to develop a "Coastal Storms Adaptation, Preparation, and Response Tool for Great Lakes Marinas" – at the end of

the grant, we will be have 2-3 workshops throughout the Great Lakes and would be very interested in incorporating some of this information into those workshops!