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NWWN
National Working Waterfront Network

SENSE *of the* Conference

Working Waterfronts: Adapting to Change

NATIONAL WORKING WATERFRONT NETWORK CONFERENCE

FEBRUARY 4-6, 2025 | SAN DIEGO, CALIFORNIA

nationalworkingwaterfronts.com

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BACKGROUND AND OVERVIEW

In February 2025, more than 200 people gathered at the 7th National Working Waterfront Network (NWWN) Conference in San Diego, California to share ideas and information about working waterfronts. Hosted in partnership with California Sea Grant, participants came from all coastal areas of the United States and represented a variety of waterfront sectors and interests. The theme of the event was "Working Waterfronts: Adapting to Change." This conference built upon the successes and recommendations from the previous five symposiums in Virginia (2007), Maine (2010), Washington (2013), Florida (2015), Michigan (2018), and Massachusetts (2022). It was the first conference held in California and took place along the San Diego waterfront at the Marina Village Conference Center in Mission Bay.

The NWWN is a nationwide network of businesses, industry associations, nonprofits, local governments and communities, state and federal agencies, universities, Sea Grant programs, and individuals dedicated to supporting, preserving, and enhancing our nation's working waterfronts and waterways. Participation in the NWWN is open to all individuals and organizations involved in working waterfront issues at the federal, state, and local level. Our mission is to increase the capacity of coastal communities and key players to make informed decisions, balance diverse uses, ensure access, and plan for the future of their working waterfronts and waterways.

The following report provides an overview of the conference including major themes and the challenges and opportunities highlighted during plenary and concurrent sessions. It also provides a synopsis of participant demographics, plenary sessions, and conference field trips.

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*Committee Chairs

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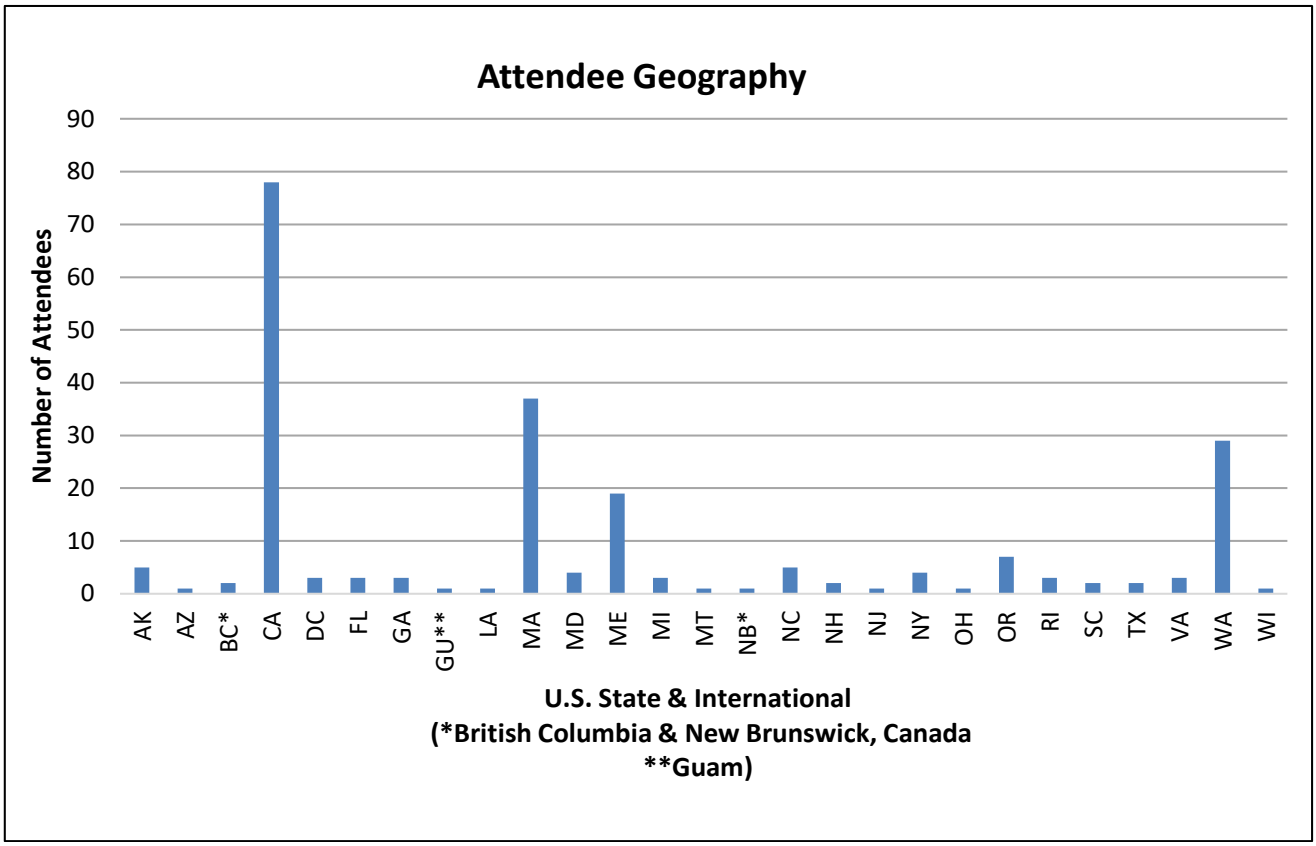
CONFERENCE AT A GLANCE

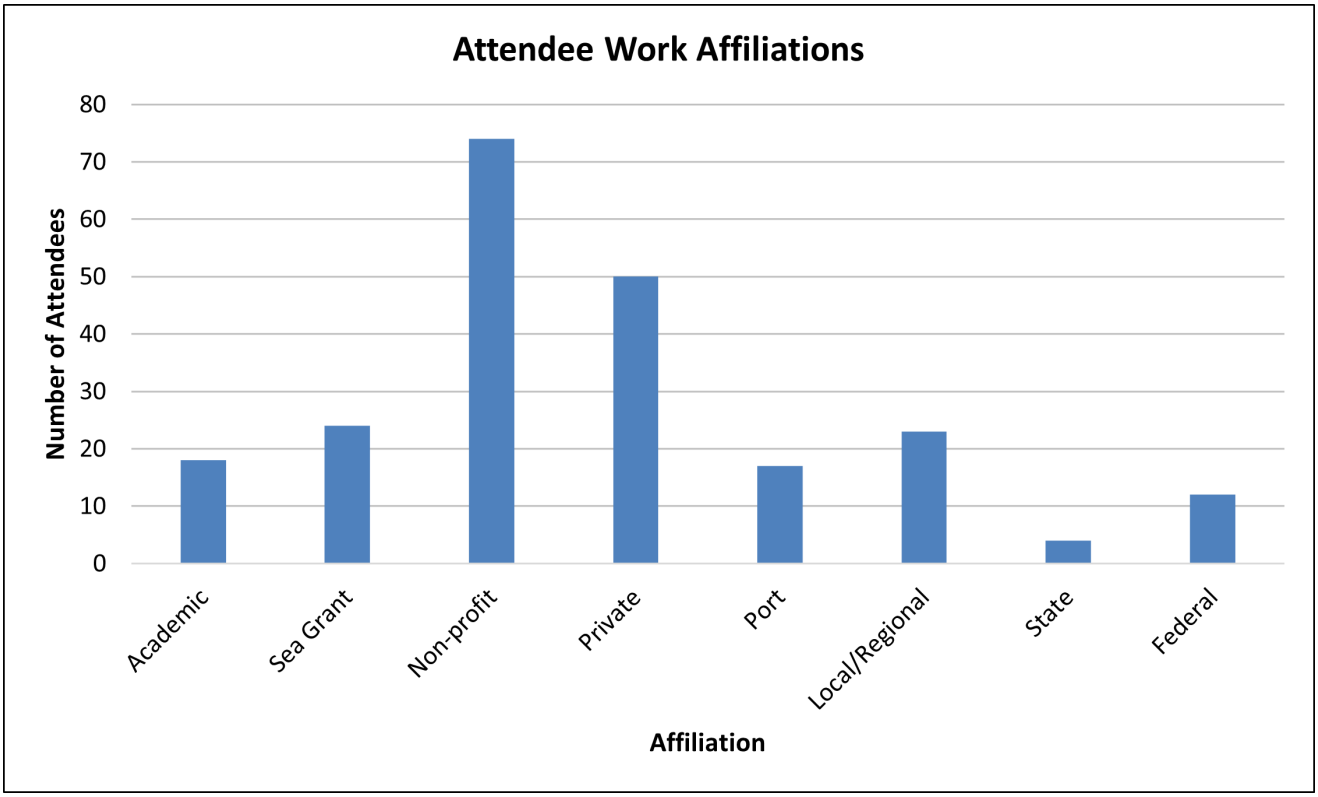
The conference took place over three full days from February 4th, 2025 to February 6th, 2025. Prior to the official start of the conference, on February 3rd, 2025 there was a free NOAA training "Estimating the Local Marine Economy" and two field trips. These included trips to the Port of San Diego's commercial fishing facilities at Tuna Harbor/Driscoll Harbor, and a tour of the Port's electrification initiatives including their electric tugboat (eWolf by Crowley).

The first day of the conference itself began with a plenary on climate change impacts and responses along working waterfronts in the United States and an evening welcome reception at the Marina Village Conference Center. The second day plenary included representatives from diverse waterfront industries to discuss emerging uses at the waterfront and was followed by an afternoon on-water tour of the Port of San Diego. The final day began with a panel focused on reducing emissions at working waterfronts and robust breakout discussions of key working waterfront topics, and finished with concurrent sessions.

PARTICIPATION

Approximately 220 participants gathered for the 2025 conference. Participants came from 24 different states, in addition to attendees from Canada and Guam.





PLENARY SESSIONS

FEBRUARY 4, 2025

"Navigating a Changing Climate: Planning for Resilience at Working Waterfronts"

Panelists:
Monique Coombs, Director of Marine Programs, Maine Coast Fishermen's Association;
Theresa Peterson, Fisheries Policy Director, Alaska Marine Conservation Council;
John Schmidt, Program Manager, Great Lakes St. Lawrence Governors and Premiers;
Bryan Fleuch, Associate Director, University of Georgia Marine Extension and Georgia Sea Grant;
Jennifer Dopkowski, Program Manager, Climate and Fisheries Adaptation Program, National Oceanic and Atmospheric Administration (Moderator)

The morning plenary was an opportunity to discuss how working waterfronts are impacted by and responding to climate change. To begin, panelists described their working waterfronts, using images to help tell their stories. Photos captured the people engaged—both currently and historically—in working waterfront activities, the economic significance of working waterfronts, and the ways in which industries and people are embracing innovation, adaptation, problem solving, and hard work as they try to address the impacts of climate change. Further discussion focused on the impacts climate change is already having, the roles of partnerships and communities in addressing those impacts, and where they see their waterfronts in ten years.

Highlights:

- "Climate change makes everything worse" was a common theme. Members of the fishing industry often demonstrate resilience in

the face of adversity, but the compounded impacts of gentrification, aging workforces, storms, warming waters, shifting species, changing regulations, and other factors makes it difficult for some in the industry to adapt or bounce back.

- Innovation and diversification may help communities succeed in the face of climate change. Partnerships and collaborations can support these approaches—through efforts such as education, sharing of tools and resources, and advocating—but partnerships and collaborations may be difficult to establish and maintain.

- Looking forward, panelists highlighted the need to train the next generation of the workforce and create pathways to jobs, improve infrastructure, transition to low-emissions technology, encourage people to support coastal industries, and diversify within and across industries.

FEBRUARY 5, 2025

"Exploring New and Emerging Uses of Working Waterfronts"

Panelists:
Matt Classen, Executive Director, TMA BlueTech;
Jennifer McCann, Director of Extension and National Offshore Wind Energy Liaison, Rhode Island Sea Grant College Program;
Margaret Pilaro, Executive Director, Pacific Coast Shellfish Growers Association;
Tyler Soleau, Assistant Director, Massachusetts Office of Coastal Zone Management (Moderator)

Working waterfronts are a place of transition in many ways. Infrastructure needs, workforce development, advancements in technology, new policies and regulations, and diversifying markets are among the drivers of these transitions. Panelists addressed these factors in the context of blue technology, offshore renewable energy, and shellfish aquaculture.

Highlights:

- Emerging uses require a trained workforce. Traditional workforce needs remain critical, but as industries advance, there is greater demand for skilled engineers, ocean scientists, social scientists, data specialists, legal experts, entrepreneurs, and others.

- Working waterfront activity can benefit from international partnerships. Global markets for shellfish and technologies, lessons learned from European offshore wind, and foreign policies driving decarbonization and defense were all noted as examples of the influence of international activity on working waterfront innovation.

- Domestic policies, laws, and regulations can be both beneficial and detrimental to innovation. As industries navigate the ever-changing political landscape, they are mindful of how their industries are perceived by elected officials and how those perceptions impact funding, regulations, political will, public perception, and other factors.

FEBRUARY 6, 2025

"Reducing Emissions at Working Waterfronts"

Panelists:
Lucia Ayala, Environmental Specialist, The Port of Hueneme, Port Hueneme, CA;
Peter Eicher, AICP, Program Manager of Climate and Sustainability, Port of San Diego, San Diego, CA;
Sam Belknap, Director of Center for Marine Economy, Island Institute, Rockland, ME (Moderator)

As efforts to reduce emissions at ports continue to grow, many are realizing how complex this process can be. Panelists in this plenary shared best practices and lessons learned, to date, from programs underway at the Port of Hueneme (CA) and the Port of San Diego (CA).

Highlights:

- Port emissions, *e.g.*, nitrogen oxides, diesel particulate matter, and carbon, come from a wide range of sources including harbor crafts and ocean-going vessels, railways, cargo handling equipment, and trucks. The pollution can have negative health impacts on surrounding communities.

- Despite the fact that trucks are not typically the largest source of pollution, their visibility in the community makes them a priority concern. Both ports discussed how they are addressing trucks, with the Port of Hueneme focused on community education and the Port of San Diego working to route trucks quickly to highways without passing through neighborhoods.

- Transitioning to electric-power requires a reliable supply of electricity. The capacity of utility companies can be a limiting factor, along with space available to generate power on-site. Micro-grids, batteries, and implementing fees associated with use of shore power were some ways that the ports are trying to address this.

- The ports are part of a larger effort to reduce emissions at working waterfronts. Shipping companies, port operators, governments, and communities are among those involved. Education, outreach, and coordination can help make this an inclusive, transparent, and effective process.

TEARFUL SAILOR
Washington

NWWN WORKING SESSION (FEBRUARY 6, 2025):

The diversity of interests represented by NWWN members at the conference created an opportunity to have cross-sector discussions about topics common to nearly everyone involved in working waterfronts. This plenary session on the final day of the conference began with breakout sessions on common themes surrounding working waterfronts, including workforce needs, research and data needs, waterfront ownership, permitting and regulations, economic challenges, partnerships, and climate change. Following breakout discussions, key takeaways identified from each breakout session were shared with the whole audience.

Workforce Needs

The future of the working waterfront workforce and the need for resources and opportunities to promote careers in maritime activities was a prominent theme at the 2025 conference. Important topics brought up during this breakout discussion included:

- The need to ensure that individuals are aware of maritime jobs and workforce training programs that are available to them. Outreach for available jobs and educational and training programs should be shared in various formats and to diverse populations. This is important for increasing access to training and job opportunities to underserved communities.
- Mapping workforce pathways is a helpful approach for interested individuals to see what exists in the maritime industries, and stepping stones to get there.
- Coastal regions and working waterfronts may have a specific range of workforce needs, and there isn't a one-size fits all approach to training. Instead, training needs to be tailored to the community and individuals in the community.
- It is critical and beneficial to have the voices of the maritime industry in workforce development programs. Incentives can assist with supporting collaboration between working waterfront businesses and local organizations to develop resources and training programs.
- Affordable housing and affordable and reliable transportation are major barriers for individuals who work on the waterfront and need to be there physically.
- Sharing workforce training resources between working waterfronts can help areas looking to develop a new program or improve current opportunities.

Research and Data Needs

Collecting and sharing data is a useful tool in understanding the economic and social benefits of working waterfronts along with the potential environmental issues that may impact them. Important topics brought up during this breakout discussion included:

- Accessibility of data is a challenge. People in the breakout identified the following questions as important to consider, Who has access? How is that access maintained long-term? Where is the information held? What are the impacts of funding changes?
- Data must be stored in a location with long-term access and must be able to withstand issues such as blackouts.

- Transparency of data is important. At times, private entities do not want certain data to be made public. Opportunities exist to create incentives for anonymous data to be supplied from private industries.

- It is important to work with a data management team. Data management teams work to make sure data are organized and can be added to larger-scale datasets.

- For some efforts, it is important to determine how to connect local data and larger-scale data, and how to use the best available data on a larger scale. There are many tools available to incorporate data into larger-scale datasets.

- Opportunities exist to facilitate more collaborative projects and to coordinate discrete efforts across states and regions. Networks can help facilitate partnerships and can act as a mediator with private institutions that do not want data to be publicly shared.

Waterfront Ownership and Conversion

Working waterfronts face pressures from competing uses, changing regulations, aging infrastructure, and coastal hazards. When land for water-dependent uses is transitioned to uses that do not require access to the water, it can cause unexpected cumulative effects to the rest of the community. Important topics during this breakout discussion included:

- Natural disasters create many issues for waterfront property owners. Owners may face pressure to sell following disasters where they have sustained damage and struggle to fund repairs. As part of disaster preparedness, rapid response grants and programs can help keep waterfront property under consistent ownership. This type of support ensures that local businesses, fisheries, and maritime industries can sustain operations, secure critical spaces, and rebuild stronger, preventing displacement and strengthening community resilience.

- Gentrification and rising property values have gradually pushed out traditional working waterfront uses. New strategies should ensure productive land use and job creation while preserving maritime industries.

- In many working waterfront regions, regulations such as zoning are inadequate for protecting waterfronts from overdevelopment. Regulations should be adapted to meet local needs.

- Expanding nonprofit and land trust involvement offers a balanced approach to protecting waterfronts from overdevelopment.

- Political and community support is crucial to prevent displacement and maintain local economies. Example strategies include (1) accessing data to understand the economic impact of maritime uses to approach elected officials, and (2) focusing on bridging communication between municipalities and waterfront owners to have discussions about responsible and inclusive development.

Permitting, Laws, and Regulations

Working waterfronts are often subject to a wide variety of laws and regulations pertaining to their land uses and operations. Among the issues discussed in the breakout were:

- Regulations and zoning can protect working waterfronts by preventing their conversion to non-water-related uses. Zoning for waterfront industry can also protect working waterfronts against nuisance complaints (*e.g.*, related to noise, light, smell).

- Lengthy permitting timelines were discussed as a common challenge; long permitting timelines are known to delay projects and increase project costs.

- There is a need for permitting agencies to provide more guidance upfront to help applicants understand the permitting process. Ideally this guidance and improved pre-application preparation will reduce delays once the permitting process starts.

- To reduce permitting burdens and reduce unnecessary delays, permitting agencies at the local, state, and federal levels should explore permit streamlining. Waterfront entities should familiarize themselves with existing programs for permit streamlining. One attendee raised the example of how the Port of San Diego obtained a Regional General Permit from the US Army Corps of Engineers for maintenance work, which has significantly reduced maintenance project costs and timelines.

- Inter-agency partnerships and efforts to break down silos are important when addressing complex permitting environments like those faced by working waterfronts.

Economic Challenges

Working waterfronts can face economic challenges for a variety of reasons such as land-use changes, cost associated with trade, increasing tax burdens, new technology, and pressures from climate change. Important issues brought up during this breakout session included:

- Along certain shorelines, there seems to be a shift from primarily working waterfront uses to waterfront residential properties, recreational uses, and tourist activities. This type of change can lead to increases in housing and cost of living.

- The shipping industry faces challenges with shifts in taxation, tariffs, and global policy.

- There are costs associated with transition to new equipment and technology. The transition to green and zero-emission initiatives for port equipment and vehicles can be expensive, and additional costs may be required for associated infrastructure and training on maintenance/operation of new equipment.

- There is a lack of financing options for new technology and equipment, which increases the risk of investing in these options.

- Changing regulations in the commercial fishing industry can require new equipment that comes at an additional cost, and there is not always robust data to show reliability of equipment.

- Fisheries are facing multiple challenges including depleted fish stocks from overfishing, and climate change impacts of habitat alteration and shift in species distribution. These factors can impact the costs and economic predictability of fishing activities, including revenue from catch.

- There are many costs associated with manufacturing materials for working waterfront industries outside of the United States including supply chain issues, high shipping costs, and potential tariffs.

Partnerships and Engagement

Partnerships and engagement opportunities between and with working waterfront communities is important for transferring knowledge and increasing diversity along working waterfronts. Needs and opportunities discussed in this breakout session included:

- There is a need to expand engagement with early career professionals to draw them into the maritime field and maritime trades.
- Engagement with indigenous communities is important and requires a long-term commitment based in relationship and trust building.
- Increasing engagement depends upon lowering barriers to participation.
- There is an opportunity to learn from good models of partnerships in the working waterfront space such as those involving the arts and creative economy, and regional planning commissions. Arts and creative economy partnerships can attract people to working waterfronts through activities such as mural painting, sharing art collections, and collaborating with chefs. Regional planning commissions have local knowledge and existing relationships to act as conveners between diverse groups.

Climate Change

Working waterfronts face local, interconnected challenges stemming from climate change impacts on infrastructure and marine species. Sharing best practices and implementation resources for resilience measures across communities is a significant need. Highlights from this breakout group include:

- More information is needed to understand the impacts to marine species, especially those significant to coastal communities.
- Resources on how resilience measures are implemented are needed. Working waterfronts need to learn from each other, with a focus on best practices, how resilience initiatives are funded and permitted, and how activities differ from one community to another.
- Reframing climate resilience discussions and projects as economic opportunities, especially in smaller working waterfronts that have less access to funding, can help build momentum for change.
- Working waterfronts are rebuilding the same way rather than accessing new ideas and solutions. There are technological solutions to rebuilding that are cost saving, but these solutions are not widely known.
- A major need is decision making support, especially for smaller businesses.
- Identifying the role of clean energy in meeting working waterfront needs can be difficult. There are innovative technologies to encourage waterfronts to be clean. However, this comes with economic challenges. For example, new technology can be an expensive investment and converting/redeveloping former industrial sites along working waterfronts is a long process.
- Permitting timelines for waterfront protection projects are lengthy, and it can be difficult to get clear guidance from permitting agencies. There is an opportunity to connect with other groups that have shared objectives to communicate at state the level.
- Efforts can be enhanced by fostering engagement and partnerships and working with regional planning/development agencies on resilience measures.

Future of the NWWN and Other

This session identified other working waterfront topics of concern (in addition to those listed above) and ways for the NWWN to expand its resources and impact. Important opportunities

discussed in this session included:

- There are opportunities to broaden the reach of the NWWN internationally, and highlight transnational collaboration. This includes expanding awareness of NWWN, and collaborating with communities of practice in other countries. For instance, an attendee from Canada mentioned the lack of a nationwide community of practice similar to the NWWN.

- Expand opportunities and engagement specific to young professionals, early career individuals, and undergraduate and graduate students. The NWWN could be doing more in education and contributing to ideas to expand access/programs for k-12.

- Increase diversity of engagement with the Network by creating future opportunities to engage with more diverse populations and expanding voices of the NWWN including indigenous and first nations, and fishers. Find the nonprofessionals who are the key to implementation and who have to live with decisions on a day-to-day basis.

- The NOAA Training offered at conferences was noted as being very valuable, and there was discussion of implementing similar workshops at future conferences.

- State legislatures are always looking for sample legislation and work to facilitate working groups and conversations. This would be a good opportunity to enhance working waterfront policy initiatives.

DAN TUCKER
Washington

FIELD TRIPS

Participants took part in field trips at San Diego's working waterfront prior to the start of the conference, and on the second day of the conference.

Port of San Diego Tuna Harbor and Driscoll's Wharf

Tuna Harbor is known as the home of San Diego's fishing fleet and is the location of the Port's open-air seafood market, Tuna Harbor Dockside Market. Driscoll's Wharf was once a privately-owned, commercial fishing facility, but is now owned and managed by the Port of San Diego, and is an interesting contrast to Tuna Harbor. Guided by the San Diego Fishermen's Working Group (SDFWG), participants toured each facility learning about the history, challenges, and future opportunities for San Diego's commercial fishing fleet at each location.

Crowley eWolf and Port of San Diego Electrification Initiatives

Initiatives to reduce greenhouse gas emissions at the Port of San Diego include the installation of a renewable solar-powered microgrid at one of their marine cargo terminals, retrofitting lighting to LED technology, and expanding workforce training opportunities. Additionally, in the spring of 2024, the first all-American electric tugboat, the eWolf, began operating at the Port of San Diego. The boat was built by Boat Builders with electrical equipment designed by ABB. Participants got to go aboard the eWolf for a guided tour by Crowley, and also stopped at the marine terminal to see the new microgrid.

Port of San Diego Harbor Cruise by Flagship Cruises and Events

Participants enjoyed a private two-hour narrated cruise of the North and South Harbors of San Diego Bay, which included sightseeing of Harbor Island, Shelter Island, Tenth Avenue Marine Terminal, Coast Guard Station, Naval Training Center, Scripps Pier, Bait Barges, Seaport Village and much more.

ANDREW WILLNER
New Jersey

KEY THEMES

The theme of the 2025 conference was "Working Waterfronts: Adapting to Change." Through plenaries, presentations and panel discussions, participants shared the challenges and solutions facing their communities and industries. They discussed their latest research findings and their hopes for the coming generations of waterfront users. This following section pulls together the major takeaways from the concurrent sessions and plenaries gathered into four categories. Each category includes a distillation of current challenges facing working waterfronts and communities, along with opportunities for growth and solution-seeking.

IMPACTS AND ADAPTATIONS TO CLIMATE CHANGE

Working waterfronts are increasingly threatened by climate change and associated impacts. Coastal communities depend on the ocean and thus understand the need for action to mitigate and adapt to the challenges, however, many lack the essential capacity and financing to proactively plan and implement preventive measures. Furthermore, recovery after a natural disaster is often slow and can be blocked by significant financial hurdles. The opportunities for improving climate resilience center on enhanced collaboration, sharing of best practices, and diversification of maritime industries.

CURRENT CHALLENGES

- **Changing Weather Patterns:** Working waterfronts are threatened by shifting storm directions. For example, in Maine, a major storm in January 2024 brought to light how unprepared the region was to deal with storms coming from the southeast.

- **Disaster Planning and Preparedness:** Small communities especially lack the capacity to conduct climate change planning. Additionally, climate change impacts are felt disproportionately by underserved communities. There is a lack of technical assistance and adaptation planning tools. There is a need for group support for climate change planning and implementation of planning recommendations.

- **Post-disaster Assistance and Misinformation:** After a natural disaster, there can be misinformation regarding what type and how much support the federal government provides. For example, there is a lack of understanding about FEMA and what types of properties they are able to provide funding for which can lead to assumptions that people are unqualified for their support.

- **Barriers to Rebuilding Infrastructure:** Resilience improvements on infrastructure increase cost and time to rebuild after a natural disaster. There is a need to help operators make improvements and to reduce the interruptions to day-to-day operations. Additionally, the lack of access to capital to make proactive improvements is challenging, so oftentimes improvements are reactive rather than proactive. Those impacted can also be hesitant to take out a loan for rebuilding. There is a need for better permitting around emergency response efforts.

OPPORTUNITIES

- **Leverage Cross-Sector Collaboration:** Collaboration is important to helping all stakeholders in a community find the best solutions. Increasing collaboration and conversations between emergency response, social services, climate resilience groups, and working waterfront communities can be advantageous for both preparing and recovering. Additionally, applying to grants as a region can be more successful than applying as a single, local community.

- **Share Resources through Networks:** Communities are interested in getting resources for funding and rebuilding. This includes identifying and sharing information on local, state, and federal funding programs that provide post-disaster support. The NWWN can also play a role by hosting a webinar to share resources, and adding resources to the NWWN website.

- **Working Waterfront Succession Planning:** Expand diversity of maritime industries along working waterfronts to reduce reliance on single industries vulnerable to climate change.

WORKFORCE DEVELOPMENT

In many communities, the maritime industry is grappling with workforce shortages and engagement from younger generations. The sector currently suffers from minimal diversity, failing to intentionally engage students from varied backgrounds to build its future labor pool. Working waterfronts are vital community assets, and there is a need to increase awareness and access to current programs, as well as develop programs that provide a clear career path into marine trades. To strengthen the future maritime workforce, the focus must be on reducing barriers to accessing programs, enhancing transferability and sharing of curriculum, coordination across working waterfronts, and targeted outreach to increase awareness of opportunities.

CURRENT CHALLENGES

- **Maritime Labor Shortages:** Future generations lack awareness about marine trades as a career option. There is also minimal diversity in the maritime industry, and more is needed to intentionally engage students from diverse backgrounds.

- **Career Pathways for Community Needs:** There is a lack of educational programs in working waterfront areas that provide a career path to the maritime workforce. Additionally, training and education programs should address community needs.

- **Program Accessibility:** There is a need to provide access to the programs that are currently available. Lack of affordable housing is a barrier to people being able to access maritime industry careers and educational and training programs along the waterfront.

- **Maritime Workforce Wellbeing:** Resources are needed to provide services and to ensure a future maritime workforce that is not burnt out. There are various stressors outside of the maritime and commercial fishing industries' control, such as storms, water quality, foreign imports, and waterfront development for non-water-dependent uses. These cumulative pressures can increase stress and take a toll on mental health.

OPPORTUNITIES

- **Transferability:** Create transferable training and educational programs. Current

programs can share curricula with other working waterfronts who are lacking in these resources.

- **Fostering New Partnerships:** Provide opportunities to build new relationships and partnerships with maritime industry businesses and organizations that can support training programs through teaching, internships, and curriculum development Developing faculty professional development opportunities is also needed.

- **Outreach and Recruitment:** Conduct outreach in the community to increase knowledge of available education and training programs. Showing young people a pathway, including mapping out who the employers are, what the jobs are, and how to access those opportunities, can attract new people to the marine trades. Using outreach that resonates with youth, and working with youth to develop this outreach can help younger people engage.

WATERFRONT INFRASTRUCTURE, INDUSTRIES, AND INNOVATIONS

The dynamics between infrastructure, industry, and innovation along working waterfronts are tightly interwoven. The specific needs of maritime and waterfront-based industries directly shape the design, scale, and function of infrastructure, including docks, storage facilities, transportation links, and utilities. At the same time, the presence or absence of such infrastructure plays a critical role in determining which industries can operate effectively on or are attracted to a particular site. Innovation in these areas emerges from this interplay: it is influenced not only by the industries and infrastructure currently in place, but also by the flexibility and capacity of the waterfront to support new technologies, sustainable practices, and emerging sectors in the future. Other factors, such as policies and regulations, climate impacts, and market forces, are also driving innovation along working waterfronts.

KEY CHALLENGES

- **Workforce Development and Retention:** Working waterfront industries—such as commercial fishing, marine transportation, and offshore renewable energy—require a highly trained and specialized workforce. However, attracting and retaining talent can be difficult, particularly in regions where high costs of living, limited population sizes, and negative perceptions of waterfront-related occupations limit prospective workers.

- **Environmental Impacts and Public Perception:** Activities associated with working waterfronts can have adverse environmental consequences, including emissions from vessels and cargo-handling equipment, noise pollution affecting marine life, and degradation of water quality. These impacts contribute to public skepticism and negative perceptions of the industry, complicating efforts to build community support.

- **Investment Uncertainty:** Political volatility, fluctuating market conditions, evolving regulatory landscapes, limited funding opportunities, and growing concerns about climate change create significant uncertainty. These factors may hinder long-term planning and investment in waterfront infrastructure and operations.

- **Community Awareness and Engagement**: Effective public engagement is essential for generating ideas, fostering community support, and building meaningful participation in waterfront-related decisions; however, garnering attention and interest from local residents—particularly those unfamiliar with the purpose and benefits of working waterfronts—can be challenging.

- **Land Use Conflicts and Displacement:** Working waterfronts often face development pressures that place incompatible land uses in close proximity. This can create tensions between industrial operations and residential or recreational development and impact municipalities seeking to increase property tax revenues. Such conflicts can lead to the displacement of traditional maritime industries and the erosion of working waterfront functions.

OPPORTUNITIES

- **Environmental Stewardship through Partnership:** Collaborative efforts among industry stakeholders, government agencies, and non-profit organizations can mitigate environmental impacts and promote sustainable practices. Initiatives such as reducing vessel speeds to minimize noise pollution affecting marine species, investing in cleaner technologies, and incorporating environmental requirements into operational contracts are examples of how partnerships can drive progress. Systematic data collection on these initiatives helps quantify their economic, environmental, and social benefits.

- **Workforce Development through Public Engagement:** Targeted public engagement strategies can inform and inspire the next generation of workers, foster innovation, and reduce potential conflicts among stakeholders. By increasing awareness of career opportunities and the economic importance of maritime industries, communities can build stronger support for both existing operations and future development.

- **Proactive Planning for Economic and Industrial Transition:** Strategic planning for declining or underutilized working waterfronts presents an opportunity to guide industrial transitions in alignment with community goals. By anticipating changes in market demand or environmental conditions, communities can attract desired industries, ensure continuity of waterfront functions, and strengthen relationships between residents and waterfront enterprises.

MARITIME COMMUNITY, CULTURE, AND HERITAGE

Coastal communities face significant hurdles in planning and economic stability due to a lack of accurate, local-level data, which hinders effective municipal efforts. Many small maritime municipalities suffer from an over-reliance on a single industry, such as a specific fishery, making economic diversification a necessity but one that is difficult to achieve given their limited capacity and resources for comprehensive planning. Furthermore, academic research is often not tailored to address the needs of these smaller communities. To improve local planning, there is a clear demand for more fine-scale data, especially concerning the loss of access to traditional maritime uses due to changing land use and storms. Community engagement and conversations offer valuable context that can

serve as local data.

KEY CHALLENGES

- **Gaps and Limitations in Socioeconomic Data**: Most economic information is not available at the local level and data can be inaccurate. For instance, the American Community Survey data profiles containing popular social, economic, housing, and demographic data for a particular geographic area only tracks primary employment. In many commercial fishing communities, members have multiple jobs. In the working waterfront communities of Jonesport and Beals in the state of Maine, community members identified significant weaknesses in the socioeconomic data available. In particular these communities noted that the range of locally-made products is not accurately represented by existing North American Industry Classification System codes.

- **Single Industry Reliance:** Coastal communities can be too dependent on one industry such as a single fishery, and need diversifying. For example, on Tangier Island (Virginia), the soft shell crab is a culturally important fishery with only eight members working in the fishery. Major challenges from storms, flooding, and sea level rise, and changes in political influence can also put pressure on small fishing communities. Sea level rise has implications for changing jurisdictional boundaries. Thus, it is important to have a balance of different industries along the waterfront to withstand new challenges.

- **Limited Resources Constrain Planning:** Small maritime communities do not have the capacity or resources to do comprehensive planning. Additionally, research is not always geared toward small communities with limited resources. Municipalities need fine-scale data to inform local planning efforts. Identification of a fishing community at the federal level is place-based but within the southeastern United States, fishing communities are connected by social and economic bonds.

- **Industry Shifts and Operational Uncertainty:** Changes in the commercial fishing industry are impacting coastal communities. Examples include:

    1. Size of boats, and reduced size of fleet

    2. Decreasing catch and profit

    3. Daily resource unpredictability

    4. Income affecting crew availability

    5. Vessel age and fisher age increasing

    6. Decreased income and prioritization of family affecting crew availability

- **Loss of Access to Traditional Maritime Uses:** Coastal communities small and large can experience competing interests. Redevelopment of working waterfront spaces to non-water-dependent uses can bring significant investment but it often competes with the need to maintain an accessible waterfront for traditional maritime industries such as commercial fishing. For example, in Maine, access to intertidal mudflat for shellfish industry is being lost to gentrification, and the Port of San Diego has experienced loss of access for the commercial fishing fleet due to redevelopment.

OPPORTUNITIES

- **Employ Community Decision-Making:** Conducting community-based work and having conversations with coastal community members will help determine their needs and priorities. There is an opportunity to create a guide for community conversations to ensure purposeful and successful engagement and outcomes.

- **Storytelling for Information Sharing:** Storytelling in coastal communities may allow researchers to pull together information that can become qualitative data for science which informs policy. Sharing ensures that the coastal community members are a part of the science and policies that affect them.

- **Increase Data on Coastal Access:** There is a need to develop data on coastal sites used for access, and to provide evidence of their significance to the maritime community to assist with obtaining disaster relief funding.

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FINAL THOUGHTS

The National Working Waterfront Network (NWWN) Conference has long been central to the Network's mission, providing a vital opportunity for members to gather in person and engage in meaningful dialogue. Working waterfronts are essential to our nation's economies, communities, and cultural heritage, yet they face mounting challenges from climate change, waterfront land-use and ownership conversion, shifts within maritime industries, and evolving financing and regulatory environments. Since the last conference in 2022, working waterfronts across the country have continued to evolve, responding to challenges and adapting to change through collaboration, new methods, and the sharing of best practices.

During the 2025 conference, attendees explored key topics including disaster response and recovery funding, reducing carbon emissions at the waterfront, emerging waterfront uses and technology, workforce development, and strategies to preserve water-dependent uses and infrastructure. From the concurrent sessions and ongoing discussions that weaved throughout the conference, participants identified a range of needs and opportunities for the future of working waterfronts. With the support of dedicated volunteers, we captured extensive notes from the conference sessions and these insights will guide our efforts to translate needs and opportunities into meaningful action.

To be effective, though, we encourage you to stay engaged! The best way to do that is to join the NWWN listserv by sending a blank email to sympa@vims.edu. In the subject line of that email, type in "subscribe NWWN Firstname Lastname" (insert your own first and last name). You can use the listserv to share updates, ask questions, and stay up to date on NWWN webinars and other offerings—including the next conference. We hope to see you there!

Be sure to check out the National Working Waterfront Network website to stay up-to-date on current research and events www. nationalworkingwaterfronts.com.

– Kristin Uiterwyk, Conference Chair


NWWN


JORDYN KASTLUNGER

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