



CAW

New Hampshire
Coastal Adaptation
Workgroup

RESOURCEFUL • READY • RESILIENT



2022 CLIMATE SUMMIT RESOURCES PACKET

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2022 NH Climate Summit

AGENDA

DAY 1 – WEDNESDAY, SEPTEMBER 28 (PM)	
VIRTUAL PRESENTATIONS	
1:00pm	Welcome and Program Introduction <i>Nathalie DiGeronimo, CAW Co-Chair, NHDES Coastal Program</i>
1:15pm	Keynote Address <i>Kristin Marcell, Climigration Network</i>
2:00pm	NETWORKING BREAKOUT GROUPS
LATEST SCIENCE AND RESEARCH	
2:15pm	2021 New Hampshire Climate Assessment <i>Cameron Wake and Mary Stampone, University of New Hampshire</i>
2:30pm	FEMA Region 1 Coastal Erosion Hazard Study <i>Brian Caufield, CDM Smith, and Kerry Bogdan, FEMA</i>
2:45pm	Frequency of High Tide Flooding in Hampton, NH <i>Kirsten Howard, NHDES Coastal Program</i>
3:00pm	Transportation Agencies and Municipalities: A Necessary Collaboration to Achieve Climate Resilience <i>Jeff Malloy, HNTB Corporation</i>
3:15pm	BREAK
COMMUNITY ENGAGEMENT AND MUNICIPAL COORDINATION	
3:25pm	CAW Community Champion Award Presentation
3:35pm	All-Boards Climate Forums and Coastal Flood Risk Guidance Workshops <i>Lisa Wise, NH Sea Grant Extension</i>
3:40pm	Hampton Coastal Hazards and Adaptation Team <i>Jay Diener, Seabrook-Hamptons Estuary Alliance</i>
3:55pm	Dover Ad Hoc Committee to Study Stormwater and Resilience Funding <i>Gretchen Young, City of Dover</i>
4:10pm	Building Resilience by Building Equity in Dover <i>Autumn Scott, Strafford Regional Planning Commission</i>
4:25pm	Wrap Up <i>Nathalie DiGeronimo, CAW Co-Chair, NHDES Coastal Program</i>
4:30pm	ADJOURN

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AGENDA

DAY 2 – THURSDAY, SEPTEMBER 29 (AM) VIRTUAL PRESENTATIONS	
9:00am	Welcome and Program Introduction <i>Abigail Lyon, CAW Co-Chair, Piscataqua Region Estuaries Partnership</i>
9:15am	Updates on the Federal Landscape – Thoughts and Contributions from our Federal Delegation
DESIGNING FOR CONNECTIVITY AND RESILIENCE	
9:30am	Seacoast Transportation Corridor Vulnerability Assessment <i>Dave Walker, Rockingham Planning Commission, and Jo Sias, University of New Hampshire</i>
9:45am	Comprehensive Plan for Resilient Salt Marshes <i>Cory Riley, Great Bay National Estuarine Research Reserve</i>
10:00am	Alternative Analyses and Preliminary Designs for Priority Tidal Culvert Replacements <i>Kevin Lucey, NHDES Coastal Program</i>
10:15am	Conceptual Designs to Improve Resilience of the Route 1A Coastal Revetment <i>Michael Gardner, GZA Engineers</i>
10:30am	NETWORKING BREAKOUT GROUPS
10:45am	BREAK
PLANNING FOR RESILIENT NATURAL RESOURCES AND COMMUNITIES	
10:55am	Lessons Learned from the Great Bay Living Shorelines Project <i>Lynn Vaccaro, Great Bay National Estuarine Research Reserve</i>
11:10am	Durham Groundwater Rise Vulnerability and Planning Study <i>Kyle Pimental, Strafford Regional Planning Commission</i>
11:25am	Central Business District Street Tree Plan for Dover, NH <i>Liz Durfee, EF Design & Planning, LLC</i>
11:40am	Integrating Climate and Coastal Resilience into Municipal Planning <i>Jenn Rowden, Rockingham Planning Commission</i>
11:55pm	Wrap Up <i>Abigail Lyon, CAW Co-Chair, Piscataqua Region Estuaries Partnership</i>
12:00pm	ADJOURN; RECONVENE AT 1:30pm FOR IN-PERSON SESSION



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AGENDA

DAY 2 – THURSDAY, SEPTEMBER 29 (PM)

IN-PERSON SESSION

Hugh Gregg Coastal Conservation Center, Great Bay National Estuarine Research Reserve
91 Depot Road, Greenland, NH
[\[directions\]](#)

1:30pm	Arrival, Welcome, Refreshments, and Introductions
1:45pm	Transformational Resilience Workshop <i>Semra Aytur, University of New Hampshire, and Tye Thompson, UNH Northeast Passage</i> <ul style="list-style-type: none">• “Presencing” strategies for building personal resilience• Break• “Purposing” strategies for fostering collective action and belonging
4:15pm	Networking and Refreshments
4:30pm	ADJOURN

SPEAKERS



Kristin Marcell – *Climigration Network at the Consensus Building Institute*

Email: kmarcell@cbi.org | Website: www.climigration.org

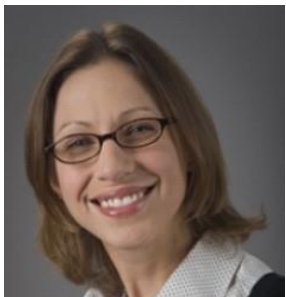
Kristin is the Director of the Climigration Network, a network that brings lived and learned experience experts together to generate equitable, just, community-led approaches to relocation for people most affected by the worsening impacts of climate change – those who are now finding it impossible to live safely in place. Prior to joining CBI, Kristin led the Climate Resilience Program for the NYS Department of Environmental Conservation’s Hudson River Estuary Program, coordinating agencies, non-profits and communities on regional and statewide climate adaptation research, policy and design. She lives with her family in Moses Lake, WA.



Cameron Wake – *University of New Hampshire*

Email: cameron.wake@unh.edu | Website: eos.unh.edu/person/cameron-wake

Dr. Cameron Wake is a Research Professor at the Institute for the Study of Earth, Oceans and Space at the University of New Hampshire and is the Josephine A. Lamprey Professor in Climate and Sustainability at the UNH Sustainability Institute. Dr. Wake leads a climate change research program, lectures widely on climate change, serves as the program chair for the UNH Sustainability Dual Major, supports regional collaborative efforts to build resilient, low-carbon communities. He is also a member of the leadership team for UNH Arctic and serves as Chair of the Kittery Maine Climate Adaptation Committee.

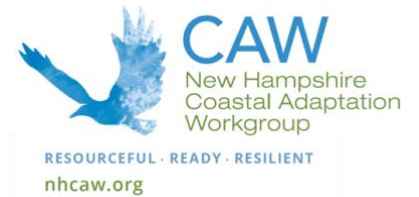


Mary Stampone – *University of New Hampshire*

Email: mary.stampone@unh.edu | Website: cola.unh.edu/person/mary-stampone

Dr. Mary Stampone is an Associate Professor of Geography at the University of New Hampshire where she teaches undergraduate courses on weather, climate, and natural hazards and conducts research on variability and change in regional-scale climate with an emphasis on hydroclimatic hazards (i.e., drought, flooding, severe weather). She also serves as the State Climatologist for New Hampshire, providing students, citizens, educators, and government agencies with weather and climate information in support of environmental management and adaptation activities.

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Brian Caufield – CDM Smith, a member of Compass PTS JV

Email: caufieldba@cdmsmith.com | Website: www.cdmsmith.com

Brian Caufield is the Task Order Manager for Compass' Region 1 Task Orders and is the Project Manager for the Coastal Erosion Hazard Areas studies.

Kerry Bogdan – FEMA Region 1

Email: kerry.bogdan@fema.dhs.gov | Website: www.fema.gov

Kerry is the Risk Analysis Branch Chief for FEMA Region 1.



Kirsten Howard – NHDES Coastal Program

Email: kirsten.b.howard@des.nh.gov | Website: www.des.nh.gov/water/coastal-waters

Kirsten Howard is the Resilience Program Coordinator for the New Hampshire Department of Environmental Services Coastal Program. Kirsten assists New Hampshire's 17 coastal communities to plan and prepare for coastal hazards such as sea-level rise and storm flooding by providing technical assistance and grant support. Kirsten is a Certified Floodplain Manager and received a B.A. from Brown University and a M.S. from the University of Michigan. Kirsten lives in Portsmouth with her husband, baby girl, and dog.



Jeffrey Malloy – HNTB Corporation

Email: jmalloy@hntb.com | Website: www.hntb.com/

Dr. Jeffrey Malloy is a climate resiliency expert with specialized academic and professional experience in environmental science, urban climate change governance, public policy implementation, and social justice. He has collaborated with transportation agencies, as well as communities throughout the Commonwealth of Massachusetts, to promote strategies for enhancing climate resilience and social equity. As HNTB's Director of Climate Resilience, Jeff routinely engages in internal and external coordination with staff and industry clients to incorporate climate resilient solutions into project planning and design.

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Lisa Wise – NH Sea Grant and UNH Extension

Email: lisa.wise@unh.edu | Website: seagrants.unh.edu/ and extension.unh.edu/

Lisa is the Climate Adaptation Program Manager with NH Sea Grant and UNH Extension, working with New Hampshire communities to build awareness of and resilience to the impacts of a changing climate. She is an active member of the [NH Coastal Adaptation Workgroup](#) and co-leads the Sea Grant Climate Network. Prior to joining Extension in 2017, Lisa completed both her bachelor's and master's degrees at the University of New Hampshire.



Jay Diener – Seabrook-Hamptons Estuary Alliance

Email: jdiener@shea4nh.org | Website: www.shea4nh.org

Jay is the current President of the Seabrook-Hamptons Estuary Alliance and Vice Chair of the Hampton Conservation, as well as a member of the Coastal Adaptation Workgroup, the Hampton-Seabrook Estuary Collaborative, a board member of the NH Association of Conservation Commissions, and the organizer of the Seacoast Conservation Commissions Roundtable.



Gretchen Young – City of Dover

Email: g.young@dover.nh.gov

Gretchen Young, PE is the Environmental Projects Manager for the City of Dover. She has 19 years of experience working throughout New England specializing in civil/environmental engineering with a particular focus on stormwater compliance, and utility and infrastructure improvements. She is Chair of both the Seacoast Stormwater Coalition and the Municipal Alliance for Adaptive Management, working with municipalities and stakeholders to collaboratively take steps towards improving the water quality and ensuring compliance with the EPA NPDES permits. She received her BS in Civil Engineering from the University of New Hampshire and a master's degree in Environmental Engineering from Norwich University.



Autumn Scott – Strafford Regional Planning Commission

Email: ascott@strafford.org | Website: www.strafford.org

Autumn received a bachelor's degree from the University of New Hampshire in Environmental and Resource Economics with a dual major in Sustainability. She is a full-time graduate student pursuing a master's degree in Natural Resources & the Environment, focused on inland flooding guidance through local regulation. 1+ year experience as a Regional Planner developing skills in climate adaptation, natural resource management, land use planning, equity and engagement resilience, collaboration, facilitation, contract planning, grant writing, and project management.



David Walker – Rockingham Planning Commission

Email: dwalker@therpc.org | Website: www.therpc.org

Dave Walker is the Assistant Director and Transportation Program Manager for the Rockingham Planning Commission (RPC). He has over 25 years of experience leading short and long-range transportation planning efforts with most of that at RPC. Dave participated as a subject matter expert in a USDOT effort to develop guidance on integrating resilience into transportation planning, was the project lead and transportation planner for the Seacoast Transportation Corridors Vulnerability Assessment and is currently working with New Hampshire DOT on the development of their Coastal Flood Risk Tolerance Framework.



Jo Sias – University of New Hampshire

Email: jo.sias@unh.edu | Website: www.unh.edu

Dr. Jo Sias is a Professor in the Department of Civil and Environmental Engineering at UNH. Her research focuses on asphalt materials and pavements, and on the impacts of climate change on infrastructure. She directs the UNH Center for Infrastructure Resilience to Climate (UCIRC) and co-directs the Infrastructure and Climate Network (ICNet). Dr. Sias is the current president for the Association of Asphalt Paving and is an associate editor for the International Journal of Road Materials and Pavement Design. She was a Fulbright Fellow at the University of Nottingham, UK, and is involved in several international organizations and collaborative activities.



Cory Riley – New Hampshire Fish and Game, Great Bay National Estuarine Research Reserve

Email: cory.riley@wildlife.nh.gov | Website: www.greatbay.org

Cory has spent the last ten years as the Manager of the Great Bay National Estuarine Research Reserve (GBNERR). She oversees and enables the research, education, land stewardship and community outreach aspects of the reserve. GBNERR is a place-based state and federal partnership between NH Fish and Game and the National Oceanic and Atmospheric Administration (NOAA) that aims to protect and promote the Great Bay estuary. Before coming to NHFG, Cory spent ten years with NOAA. She holds a bachelor's from the College of William and Mary and a master's degree from the University of Massachusetts, Boston.



Kevin Lucey – NHDES Coastal Program

Email: kevin.p.lucey@des.nh.gov | Website: www.des.nh.gov/water/coastal-waters

Kevin Lucey, Habitat Coordinator for the NHDES Coastal Program (NHCP), manages projects for the restoration, conservation, and evaluation of jurisdictional coastal ecosystems in NH. Kevin has worked for NHCP for 16 years and has focused on: salt marsh monitoring, invasive plant management, dam removal, and culvert assessment and prioritization. His work plays a vital role in supporting coastal communities in their identification of high priority restoration and conservation opportunities.



Michael Gardner – GZA GeoEnvironmental

Email: michael.gardner@gza.com | Website: <https://www.gza.com/>

Mr. Gardner has experience in coastal processes, metocean data analysis and wave modeling. He currently operates out of GZA's Metro-Boston Waterfront and Coastal group, as a Coastal Engineer. Mike's focus is on the integration of numerical modeling and analytical solutions with waterfront and coastal project design. With both undergraduate and graduate degrees in Ocean Engineering, Mike has been analyzing coastal environments for the past 10 years. His wave and metocean data analysis experience ranges from wave storm statistics and wave propagation analyses to projects involving offshore and coastal wave processes, modeling, flood and sea level rise analysis, and site-specific evaluation.



Lynn Vaccaro – Great Bay National Estuarine Research Reserve

Email: lynn.e.vaccaro@wildlife.nh.gov | Website: www.greatbay.org

Lynn joined the team at the Great Bay National Estuarine Research Reserve in the summer of 2021 as the Coastal Training Program Coordinator. In this role, she facilitates workshops and supports collaborative projects that advance stewardship of Great Bay's water and lands. Soon after taking this new job, Lynn jumped into the Great Bay Living Shoreline Project, planning the training workshops, coordinating one of the professional design teams, and learning from a fantastic group of partners. Lynn was trained as an educator and scientist and has experience facilitating collaborative research and multi-agency restoration efforts.



Kyle Pimental – Strafford Regional Planning Commission

Email: kpimental@strafford.org | Website: www.strafford.org

Kyle is a Principal Regional Planner with 14 years of experience providing technical planning assistance to address important environmental issues in municipalities across southeastern New Hampshire. He possesses a solid understanding of natural resource management, GIS, climate adaptation, hazard mitigation planning, and local land use practices. Kyle is a skilled grant writer and project manager having secured funding to support the development of local land use policies, regulatory amendments, master plan updates, and other regional efforts. He recently got married in St. John, USVI surrounded by close friends and family. In his spare time, he enjoys fishing, hiking, live music, and traveling.



Liz Durfee – EF | Design & Planning, LLC

Email: efd.planning@gmail.com | Website: www.efdesignplanning.com

Liz Durfee is the owner and principal of EF | Design & Planning, LLC, a community and environmental planning and design consulting business in New Hampshire. The foundation of her practice is building resiliency and improving quality of life. Liz has experience in the fields of planning, natural resources, and sustainability in the public, non-profit, and private sectors. She aspires to increase the use of visual communication to enhance projects, public outreach, and community spaces. Liz is a certified planner and was awarded Planner of the Year by the NH Planners Association in 2020.



Jennifer Rowden – Rockingham Planning Commission

Email: jrowden@therpc.org | Website: www.therpc.org

Jenn has worked at RPC since 2013 and currently serves as the circuit rider planner for North Hampton and Newton, and is involved in multiple land use projects, including regional and municipal master planning, hazard mitigation plans, coastal resiliency efforts, and land use regulation development. Previously, Jenn worked at NHDES for five years on a variety of watershed and drinking water protection efforts. She completed her undergraduate work in Political Science and graduate work in Natural Resources at the University of New Hampshire.



Semra Aytur – University of New Hampshire Department of Health Management and Policy

Email: semra.aytur@unh.edu | Website: www.ceps.unh.edu

Semra Aytur is an epidemiologist and professor whose research focuses on the relationships between environmental, social, and policy factors in preventing disease and keeping people well. Dr. Aytur contributed to the 'Building Resilience Against Climate Effects' (BRACE) framework in New Hampshire, the first Health Impact Assessment focusing on anticipating climate impacts, assessing vulnerabilities, and projecting the disease burden, and to starting New Hampshire Healthcare Workers for Climate Action (NH HWCA), a non-profit consisting of bipartisan healthcare workers who are concerned about the impacts of climate change on health in both urban and rural communities.



Tye Thompson – Northeast Passage

Email: tye.thompson@unh.edu | Website: <https://www.nepassage.org/>

Tye Thompson, MS, CTRS/L (they/them) has over 28 years of experience in direct service provision and program development for Recreational Therapy (RT) in both inpatient and community-based settings. They have long history of serving individuals with complex and chronic health conditions, including physical disability, chronic health conditions, and behavioral health needs and have extensive experience in facilitation of RT interventions that support health and well-being. Tye began work at Northeast Passage in 2007 as one of the primary therapists for the Northeast Passage community-based recreational therapy program (C-BRT™) and in 2012 moved into the position of Program Director.

PRESENTATION SUMMARIES & LINKS TO ADDITIONAL RESOURCES

KEYNOTE ADDRESS, *Kristin Marcell, Climigration Network at the Consensus Building Institute*

The Network serves community-based organizations in the US who are experiencing repetitive flooding and are beginning to explore relocation as a response for their community by 1) connecting them with others exploring relocation, for peer support and learning, and 2) supporting a community-driven process to explore adaptation and relocation options. The Network also connects practitioners, researchers and technical experts who are interested in sharing their skills to support and build community-led relocation practice. Kristin will share insights from Lead with Listening: A Guidebook for Community Conversations on Climate Migration.

Additional Information:

- The Climigration Network's Website - www.climigration.org

2021 NEW HAMPSHIRE CLIMATE ASSESSMENT, *Cameron Wake and Mary Stampone, University of New Hampshire*

This presentation will introduce the 2021 New Hampshire climate assessment report and highlight possible future impacts on the state's coast of interest to local stakeholders and decision makers.

Additional Information:

- New Hampshire Climate Assessment 2021 - <https://scholars.unh.edu/sustainability/71/>

FEMA REGION 1 COASTAL EROSION HAZARD STUDY, *Brian Caufield, CDM Smith, and Kerry Bogdan, FEMA*

Coastal erosion hazard areas consider multiple SLR scenarios and future timeframes to provide stakeholders with information to plan mitigation actions and build resilience in the face of a changing climate. The data are recommended as non-regulatory products to be used by communities as a tool to identify areas where coastal erosion is a hazard, plan future mitigation actions and ultimately facilitate the reduction of future erosion risk.

Additional Information:

- FEMA Region 1 Coastal Erosion Hazard Map Data Viewer - <https://arcg.is/0nmm4S>
- FEMA Region 1 Coastal Erosion Hazard Areas Study - Rockingham County Town Hall Webinar Oct 19 Registration Link - https://teams.microsoft.com/registration/jlsKM7pmXEi93Tvut_Vf6A,T1tpOkDRk63jY5e5NqkBw,ITBG0TA6IEO8Z6Dq9LK23g,Uk81_IH7406RcG096TtGyg,jdkMpmDdb067pkTrmeW5mw,botTR5HKqEOhiDazb7U2Bw?mode=read&tenantId=330a8b8c-66ba-485c-bddd-3beeb7f55fe8

FREQUENCY OF HIGH TIDE FLOODING IN HAMPTON, NH, *Kirsten Howard, NHDES Coastal Program*

Between 2013 and 2020, high tide flooding occurred on average 134 days per year in Hampton. High tide flooding occurred three times more often than predicted in NOAA's Hampton Harbor annual tide tables, which do not factor in weather or sea level rise. A report published by the NHDES Coastal Program and partners summarized data from the Hampton, NH tide gauge. The findings highlight the need for residents and decision-makers to use real time water level data to inform emergency management and climate adaptation planning decisions.

Additional Information:

- Hampton, NH Tide Gauge Summary - <https://www.nhcaw.org/project/36462/>
- Hampton, NH Tide Gauge Fact Sheet: <https://www.nhcaw.org/wp-content/uploads/2022/08/Hampton-Tide-Gauge-factsheet.pdf>
- Summary Report of High Tide Flooding Recorded by the Hampton, NH Tide Gauge: 2013-2020: <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-21-15.pdf>

TRANSPORTATION AGENCIES AND MUNICIPALITIES: A NECESSARY COLLABORATION TO ACHIEVE CLIMATE RESILIENCE,

Jeffrey Malloy, HNTB Corporation

Elevating the role of transportation agencies to prepare for the effects of climate change can serve as a catalyst to address climate vulnerability and provide broad ranging societal benefit. Municipalities and transportation agencies must work collaboratively to take advantage of varying degrees of capability and expertise. An explicit focus on inclusive planning, a commitment to addressing determinants of social vulnerability, and strategic investments across a range of policy issues, are needed.

Additional Information:

- Research Article - A Framework for Implementing Socially Just Climate Adaptation - <https://link.springer.com/article/10.1007/s10584-020-02705-6>

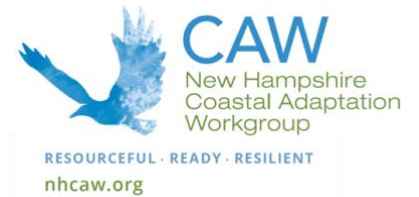
ALL-BOARDS CLIMATE FORUMS AND COASTAL FLOOD RISK GUIDANCE WORKSHOPS, *Lisa Wise, NH Sea Grant & UNH Extension*

Several coastal NH communities have hosted workshops for municipal staff and board members to increase awareness of available climate resources and discuss ways they can be used. There are a variety of climate-related resources available for NH communities to use but oftentimes they are not located in one place. Additionally, there are generally not a lot of opportunities for interaction across municipal staff departments and between different volunteer boards/committees. These workshop programs were developed in an effort to help address these challenges and encourage greater use of available climate information. This presentation will describe these efforts and ways this approach can be used by other communities.

Additional Information:

- Exeter Climate Resources Webpage - <https://www.exeternh.gov/cc/climate-related-documents>
- Dover Climate Resources Webpage - www.dover.nh.gov/government/city-operations/planning/resilient-dover/climate-resources/
- NH Coastal Flood Risk Summary Videos - https://www.youtube.com/playlist?list=PLzaaFQKgZ-Fg9fMH0x_dQvUda3x1YJ0J4

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HAMPTON COASTAL HAZARDS AND ADAPTATION TEAM, *Jay Diener, Seabrook-Hamptons Estuary Alliance*

Shea and the NH DES Coastal Program, with support from EF Design & Planning, formed the Coastal Hazards Adaptation Team (CHAT) in Hampton in 2019 to explore address various current and future impacts of sea level rise and coastal flooding. CHAT is comprised of members from all town boards, along with select town staff and residents. CHAT's research and investigations have resulted in a suite of 19 recommendations for consideration and potential implementation by the Town. CHAT's work continues to involve all branches of local government, increased awareness of vulnerabilities to sea level rise, and spur action to help make the town more resilient.

Additional Information:

- Coastal Hazards Adaptation Team Website – shea4nh.org/coastal-hazards-adaptation-team-chat/

DOVER AD HOC COMMITTEE TO STUDY STORMWATER AND RESILIENCE FUNDING, *Gretchen Young, City of Dover*

In 2020-21 the City of Dover appointed a Stormwater and Flood Resilience ad hoc committee charged with exploring dedicated funding to support stormwater management and resilience efforts. The committee unanimously recommended the City pursue a stormwater and flood resiliency utility and efforts are underway to work through the remaining technical details and to conduct extensive public outreach and engagement. A proposed zoning ordinance for adopting a stormwater utility will be presented to the City Council in late 2023.

Additional Information:

- Ordinance Committee and Utilities Commission To Begin Planning Stormwater Utility Announcement - www.dover.nh.gov/services/online-services/news-events/news-2022/ordinance-committee-and-utilities-commission-to-begin-planning-stormwater-utility.html

BUILDING RESILIENCE BY BUILDING EQUITY IN DOVER, *Autumn Scott, Strafford Regional Planning Commission*

The goal of this project was to engage Dover's historically underserved communities (HUCs) in climate change conversations. HUCs are often disproportionately vulnerable to climate change impacts such as sea level rise, coastal flooding, freshwater availability, and urban heat island effects. By using their input and lived experiences to inform recommendations to the City, we could promote strategies that would actively build trust and work to include their history, perspectives, and voices, in climate adaptation measures and planning processes. By planning for HUCs, we're simultaneously planning for the wider community and building true resilience.

Additional Information:

- Dover Building Coastal Resilience By Building Equity Project Website - <http://straftord.org/projects/dover-building-coastal-resilience-by-building-equity/>

SEACOAST TRANSPORTATION CORRIDOR VULNERABILITY ASSESSMENT,

David Walker, Rockingham Planning Commission, and Jo Sias, University of New Hampshire

The Seacoast Transportation Corridor Vulnerability Assessment (STCVA) examined the impacts of sea-level rise (SLR) on the roadway network to incorporate coastal flood risk resilience into transportation planning. A network analysis assessed how road closures might disrupt current traffic patterns and identified those roadways expected to carry additional volume. Roadway segments directly impacted by SLR were identified under multiple scenarios and adaptation measures were assessed for priority locations. Guidance from the NH Coastal Flood Risk Summary helped establish timeframes for inundation allowing communities, RPC, and NHDOT to better understand when adaptation measures would need to be implemented.

Additional Information:

- Seacoast Transportation Corridor Vulnerability Assessment & Plan Project Website - <http://www.therpc.org/stcva>

COMPREHENSIVE PLAN FOR RESILIENT SALT MARSH, *Cory Riley, Great Bay National Estuarine Research Reserve*

The Great Bay NERR has been working with the NH Department of Environmental Services Coastal Program and several local partners to develop a geospatial planning tool that assesses marsh resiliency and screens potential management options for all of NH's marshes. This presentation will dig into two case studies of how this tool can be applied to inform real world decisions that can help sustain our marshes in a changing climate.

Additional Information:

- Great Bay National Estuarine Research Reserve Website - <https://greatbay.org>

ALTERNATIVE ANALYSES AND PRELIMINARY DESIGNS FOR PRIORITY TIDAL CULVERT REPLACEMENTS - PHASE 3 OF THE NH RESILIENT TIDAL CROSSINGS PROJECT, *Kevin Lucey, NHDES Coastal Program*

This presentation will provide an overview of seven years of strategic planning and analyses spearheaded by NHDES Coastal Program and The Nature Conservancy to assess and prioritize the replacement of all tidal road-stream crossings in New Hampshire based on ecosystem, flood resilience, and infrastructure condition criteria. The presentation will also describe the investments in alternative analysis, engineering designs, and permitting at multiple municipal and state-owned tidal crossing sites to deliver a pipeline of shovel-ready coastal resilience and habitat restoration projects.

Additional Information:

- NHDES Tidal Stream Crossings Website – <https://www.des.nh.gov/water/coastal-waters/tidal-stream-crossings>

CONCEPTUAL DESIGNS TO IMPROVE RESILIENCE OF THE ROUTE 1A COASTAL REVETMENT, *Michael Gardner, GZA Engineers*

The presentation will consist of a brief overview and description of take-aways from GZA's work on the NHDOT North Hampton to Rye Coastal Revetment Resilience/Conceptual Design project. This work stems from increasing storm damage to the NH RT 1A coastal revetment and covers storm topology and coastal resiliency along the NH coastline. The proposed work will have a direct effect on community members and emergency response teams and public works that utilize and maintain NH RT 1A.

Additional Information:

- NH DOT Project Website - <https://www.nh.gov/dot/projects/northhamptonrye42312/index.htm>

LESSONS LEARNED FROM THE GREAT BAY LIVING SHORELINES PROJECT, *Lynn Vaccaro, Great Bay National Estuarine Research Reserve*

Sea level rise is exacerbating shoreline erosion, prompting some landowners to armor their shorelines in ways that are harmful to ecosystems and, in some cases, are more prone to failure than natural shorelines. The Great Bay Living Shoreline Project advanced the use of nature-based shoreline stabilization techniques through an innovative approach. The project team recruited engineering and landscape professionals to participate in an eight-month design and training program that generated conceptual designs for four case study sites. The designs illustrate how living shoreline approaches can be applied in different settings and address different goals. By collaborating with consultants and landowners we increased skills to plan shoreline projects and identified opportunities and barriers to using these techniques in NH.

Additional Information:

- The Great Bay Living Shoreline Project Website - <https://www.nhcaw.org/greatbaylivingshorelineproject/>

DURHAM GROUNDWATER RISE VULNERABILITY AND PLANNING STUDY, *Kyle Pimental, Strafford Regional Planning Commission*

Strafford Regional Planning Commission, in partnership with the Town of Durham, University of New Hampshire, and JFK Environmental Services LLC, conducted a vulnerability assessment that used results from a groundwater model to produce maps and statistical data about the potential impacts to public and private drinking water supplies, private septic systems, contaminated sites, stormwater infrastructure, utilities, roads, and critical municipal facilities in low-lying areas to groundwater rise and saltwater intrusion. Recommendations identified in the plan will enable Durham decision-makers to better plan for future conditions and improve their resilience to groundwater rise impacts.

Additional Information:

- Durham Groundwater Modeling Project Final Non-Technical Report - http://strafford.org/uploads/documents/plans/rpc/durhamgroundwaterreport_20220225.pdf
- Durham Groundwater Modeling Project Maps - <http://strafford.org/maps/durham-groundwater-modeling-maps/>

CENTRAL BUSINESS DISTRICT STREET PLAN FOR DOVER, NH, *Liz Durfee, EF | Design & Planning, LLC*

Key elements of Dover's Central Business District Street Tree Plan include: (1) Identify guiding principles and objectives for the plan, (2) Develop a street tree inventory data form and online data collection platform, (3) Recruit and train volunteers to conduct the inventory, (4) Conduct a city-wide GIS-based canopy cover and socio-economic data assessment, (5) Prepare a street tree management plan, (5) Develop an implementation schedule to increase resiliency. The replicable effort compiled information and highlighted ways for Dover to increase canopy cover, which plays a role in mitigating the urban heat island effect and high temperatures.

Additional Information:

- Central Business District Street Tree Plan Dover, NH – https://www.dover.nh.gov/Assets/government/city-operations/planning/New-Folder/Street-Tree-Plan/CBD%20Street%20Tree%20Plan_Feb2021.pdf

INTEGRATING CLIMATE AND COASTAL RESILIENCE INTO MUNICIPAL PLANNING, *Jennifer Rowden, Rockingham Planning Commission*

New Hampshire's coastal municipalities are increasingly taking the lead on climate change resiliency efforts by incorporating the best available science and knowledge into their local planning efforts. Through existing planning processes, such as master plans, hazard mitigation plans, and capital improvement plans (CIPs), municipalities are using the opportunity to educate residents, staff and officials while developing adaptation and mitigation strategies that fit the community's needs. RPC will review examples of the process and planning efforts taken by a range on NH communities to increase their resiliency efforts.

Additional Information:

- North Hampton Coastal Hazards & Adaptation Master Plan Chapter - https://www.northhampton-nh.gov/sites/g/files/vyhlf996/f/uploads/mpcoastalhazardsandadaptationchapter_adopted20220517.pdf
- Little Boar's Head Coastal Hazards & Adaptation Master Plan Chapter - https://www.northhampton-nh.gov/sites/g/files/vyhlf996/f/uploads/lbh_coastalhazardsandadaptationmpchapter_adopted20220517.pdf
- City of Dover Climate Adaptation Master Plan Chapter - https://www.dover.nh.gov/Assets/government/city-operations/2document/planning/master-plan/Climate/Climate_Adaptation_Chapter_Certified.pdf

TRANSFORMATIONAL RESILIENCE WORKSHOP, Semra Aytur, University of New Hampshire, and Tye Thompson, Northeast Passage

Part I: **"Presencing"** strategies for building personal resilience

1. Introduce components of personal resilience, psychological flexibility and well-being.
2. Engage participants in active exploration of well-being and personal values.
3. Support participants in identifying/practicing personal strategies that support personal wellbeing amidst ongoing stressful conditions.
 - Mindfulness and emotional granularity
 - Committed action that aligns with personal values
 - Connection within community

Part II: **"Purposing"** strategies for fostering collective action and belonging

1. Introduce concept of transformational resilience and adversities as catalysts to finding purpose, meaning, and hope in work and life.
2. Engage participants in exploring "photo-voice" as powerful strategy for identifying common concerns and strengths within communities as part of as catalyst for change.
3. Support participants in identifying/practicing techniques that build group identity and foster continued engagement in constructive and collaborative climate change initiatives.

Additional Information:

- Project Echo: <https://chhs.unh.edu/institute-health-policy-practice/delivery-system-payment-reform/project-echo>