



Reports from the Frontier III - Pathways to Change: Policy and Action for Resilience iCAR Phase V

October 29-30, 2019

Location: University of South Florida, St. Petersburg
Room: University Student Center (USC) Ballroom
200 6th Ave South, St. Petersburg, FL 33701



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Dr. Rebecca Johns (Director of Community Outreach and Education)
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iCAR 2019 Workshop Advisory Panel

Kelli Hammer-Levi (Pinellas County)
Jamie Serino (TSIC of Manatee County)
Benjamin Smet (OPEN)
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Introduction:

This 2-day workshop, hosted by the Initiative on Coastal Adaptation and Resilience (iCAR), University of South Florida St. Petersburg (USF Saint Petersburg), Gamma Theta Upsilon (GTU), and the Tampa Bay Regional Planning (TBRPC), will engage participants in discussion about societal responses to climate change and the role of policy-makers, scholars and citizens to translate science and policy into action. We will discuss how our innate engineering such as myopia, amnesia, optimism, inertia, simplification and herding impacts our ability to prepare and respond to potential risks and hazards including climate change related risks. We will discuss opportunities and barriers to translating science into policy, how change can be organized and social mobilization can happen in the context of climate change and coastal resilience. We will also discuss the role of participatory decision-making, stakeholder analysis and consensus building in instituting changes in policy and practices related to coastal resiliency.

Through a series of presentations and followed by facilitated discussions and breakout sessions between experts from the national level, state level and Tampa Bay regions, participants will explore potential regional solutions and approaches for addressing the resilience and adaptations of coastal cities to climate change.

Workshop Objectives:

- ✓ The conference will build-on previously identified research, data, and policy gaps and find strategies to link research agendas to public policy formulation that emphasizes solution-oriented approaches for coastal cities, with a particular focus on how change happens
- ✓ Explore how science can be applied to create actionable policies (national, state and local levels)
- ✓ Explore how policies to build community resilience and adaptation to the effects of climate change are being translated into action here in the Tampa Bay region and around the country
- ✓ Explore how diverse communities build consensus and implement changes for resilience
- ✓ Explore how local and national officials are working toward a climate resilient economy
- ✓ Explore the implementation of resilience policies in marginalized communities here in Pinellas

Workshop Topics:

1. Review of Ostrich Paradox – innate engineering
2. Opportunities and barriers for translating science into policy and policy into action
3. Urban development and Coastal High Hazard Zones
4. Strategies for creation of a resilient economy

5. Role of public participation and effective strategies for coastal resiliency through consensus building
6. Building inclusive communities for climate resilience, equity and health
7. Understanding how social and policy change happens
8. Protecting cultural heritage sites from Sea Level Rise
9. Updates from the State Office of Climate Resiliency and the Tampa Bay Regional Planning Council
10. Using crowd-sourced data for better decision-making for climate resilience

Who Should Attend:

- ✓ Citizens, and Representatives from Homeowners Associations, Neighborhood Civic organizations
- ✓ Businesses including but not limited to: Insurance industry, Real Estate, Consulting Firms, Energy providers
- ✓ NGOs (including those interested in environmental and social justice) and social service providers (religious organizations, affinity organizations)
- ✓ Students, Faculty & Researchers
- ✓ Elected Officials & Government Administrators
- ✓ Professionals involved in coastal resilience: Transportation and Urban Planners, Floodplain Managers, Emergency Managers, Public Works, Health Professionals, Natural Resource Managers, Engineers & Scientists.

Benefits:

- ✓ Learn from speakers chosen based on their academic and professional credentials and proven expertise in their fields
- ✓ Learn about cutting edge information (opportunities and barriers) regarding pathways to change : viz. science into policy and policy into actions
- ✓ Network and share information with other individuals engaged in coastal resilience planning throughout Florida
- ✓ Shape research agendas and future climate adaptation efforts in the Tampa Bay region and beyond and for iCAR's community-driven research agenda.

To learn more about iCAR and past workshops please Visit our website at www.usfsp.edu/icar

iCAR PHASE V

REPORTS FROM THE FRONTIER III
PATHWAYS TO CHANGE:
POLICY AND ACTION FOR RESILIENCE

October 29 – 30, 2019
USF St. Petersburg
University Student Center (USC Ballroom)



Day 1: October 29	Tentative Agenda: Translating Science into Policy
12:00 noon	Registration
1:00 pm	WELCOME by Peter Stiling, Assistant Vice Provost – Strategic Initiatives, USF
1:05 pm	WELCOME & INTRODUCTION by Mark Rains, Director of School of Geosciences, USF
1:10 pm	OVERVIEW of iCAR by Barnali Dixon, Executive Director of iCAR
1:20 pm	INAUGURATION by Mayor Rick Kriseman, St. Petersburg
1:30 pm	OPEN KEYNOTE ADDRESS 1 - ARESTY SPEAKER: The Ostrich Paradox by Robert Meyer (Wharton College, University of Pennsylvania)
2:20 pm	Q & A Open dialogue with Dr. Meyer
2:30 pm	MAYOR'S PANEL: How St. Petersburg and American Cities are setting Policy Agendas for a Resilient Future with Q&A Mayor Kriseman , Leading policy efforts on the U.S. Conference of Mayors Environment Committee Ann Livingston , Supporting St. Pete's Bloomberg Philanthropies American Cities Climate Challenge (ACCC) initiatives Moderator: Benjamin Smet
3:15 pm	Whitney Gray , Office of Resilience & Coastal Protection, FDEP, Achieving Coastal Resilience Together with Q & A
3:45 pm	Panel Discussion I: Climate Science, Urban Redevelopment, Preservation and Health Inequity Libby Carnahan , UF/ IFAS, "Updated Regional Sea Level Rise Projections" Liz Abernethy , City of St. Petersburg, "Coastal High Hazard Zones and Urban Planning" Nicolette Louissaint , Ph.D., Healthcare Ready, "Best Practices for Health Justice" Cara Serra , Tampa Bay Regional Planning Council, "Regional Resilience Efforts" Moderator: Rebecca Johns, USF
4:45 pm	Q & A with Panel I
5:00 pm	Reports from the iCAR project: Resiliency from the ground up by Barnali Dixon and Rebecca Johns with Q&A 5 of 58.
5:20 pm	Adjournment

iCAR PHASE V

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Day 2: October 30

Translating Policy into Action

8:30 – 9:15 am	Registration and Coffee	3:00 pm	Q & A
9:15 am	OVERVIEW of the Conference Schedule by Rebecca Johns, iCAR	3:15 pm	Break (coffee, water, soda)
9:20 am	Keynote Address II: Heather Booth, Midwest Academy “Organizational principles and strategies toward change”	3:30 pm	Breakout session: What does sustainability mean to you? Session Leader: Alexandria Hancock, Sustainability Coordinator, City of St. Petersburg
9:50 am	Interactive strategy session with Heather Booth. : Strategies to promote change	4:00 pm	Panel Discussion IV: Building Consensus through Inclusive Communities Ife Kilimanjaro, Ph.D. , US Climate Action Network “Creating Inclusive Communities” David Brain, Ph.D. , New College, “Community Building and Sustainable Development” Sara Green, Ph.D. , USF, “Creating Disability Friendly Disaster Plans: Insights from Collaborative Research in Dunedin, FL” Moderator: Heather O’Leary, USF
10:10 am	Q & A		
10:20 am	Break (coffee)		
10:40 am	Panel Discussion II: Strategies for Transformative Change Michael Anthony Mendez, Ph.D. , University of California - Irvine, “Climate Change from the Streets: Conflict and Collaboration” Alan Bush, Ph.D. , USF, “Leadership & Governance for Resilience: lessons from the high Andean Quechua” David Zeller, Ph.D. , USF Tampa, “Environmental Movements” Jamie Sommer, Ph.D. , USF Tampa, “Constituting Environmental Citizenship through Governance for Climate Adaptation.” Moderator: Heather Booth, Midwest Academy	4:45 pm	Q & A
11:30 am	Q & A	5:00 pm	Breakout Session: How do you define community? Session Leader: Barbara Stalbird, City of St. Petersburg
11:45 am	Breakout session: How does change happen in your community? Session Leader: Heather O’Leary, Ph.D.	5:30 pm	Closing Remarks: Barnali Dixon, Executive Director, iCAR
12:15 pm	Lunch Provided	5:45 pm	Adjournment
1:30 pm	Report from Commissioner Long and CJ Reynolds		
2:00 pm	Panel Discussion III: Creating a Resilient Economy Kathrin Winkler , GreenBiz, “Corporate Sustainability and Climate Realities” Anne Pollack , Fletcher & Fischer, P.L., “Developing Informal Strategies for Small Businesses” Nikki-Gaskin-Capehart , Urban Affairs, St. Petersburg, “City Policies for Resilient Communities” Moderator: Alison Barlow, St. Petersburg Innovation District		

Major Workshop Recommendations (based on large workgroup facilitated discussions)

Summary of Key Takeaways/Findings and Recommendations:

2019 iCAR workshop hosted 3 breakout sessions:

Breakout Session I: How Does Change Happen in Your Community?

Session Leaders, Heather O’Leary, USF

- ✓ What is the process of change in your experience?
- ✓ How do people’s behaviors change – what motivates them?
- ✓ How do policies get changed in your city or county?
- ✓ How can individuals be involved in the process of change at all levels?

Discussion Summary

Create a system to engage the community. Government needs to play a vital role along with media to promote change. Media can help communicate and educate while government can provide a policy framework and structure and incentive to promote change. For example, county leaders realizing the importance of resiliency and sustainability, creating an office of Innovation & Resiliency and incentivizing departments to collaborate. Departments are beginning to collaborate to create programs and develop policies that facilitate management and mitigation of climate change effects. However, this can’t be done without consideration toward equity. Often poverty impacts adopting proactive approaches that foster sustainability and resilience. A holistic approach where connections among people, planet and profits are harmonized will lead to sustainability. Instituting change is a complex process and has a personal aspect as well as an institutional aspect (Figure 1).

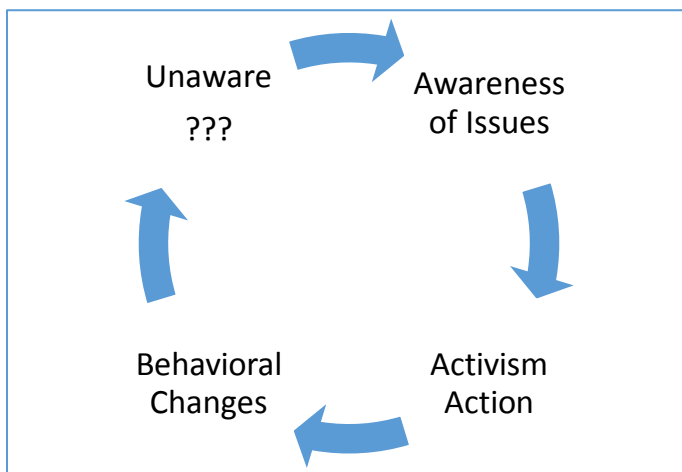


Figure 1. Pathways to change as envisioned by participants

Breakout Session: What does sustainability mean to you?

Session Leaders: Alexandria Hancock, City of Saint Petersburg

- ✓ How do you define sustainability across the three common spheres – economic, social and environmental?
- ✓ What specific policies or mechanisms would you like to see in place to promote sustainability in your community in each of these areas?

Discussion summary:

Sustainability has many different meanings to many people, however, most people agreed that at a personal level sustainability means minimizing use and waste of limited resources (Figure 2). At a community level, sustainability related to equal access and opportunity for homeownership, improvements and preparations before extreme weather events and ability to obtain support after a disaster. For example, homeowners and renters have different rights and opportunities in terms of insurance and financial incentives and sometimes these incentives are conflicting (landlords vs renters). Flooding related issues including identification of flood prone areas and planning to manage the flood impacts and access to flood insurance for renters can help resilience. Also connect people from evacuation zones with people living in non-evacuation zones so people can evacuate locally. At a regional level sustainability relates to energy conservation, transportation and compact community development that minimizes distance between work and home. Environmental and ecological sustainability includes protection of ecological assets and promoting living shorelines and the creation of an environmental incident command section (Figure 3). It also implies the need for building codes that promotes sustainability and resilience. Urban sustainability is interconnected with the resilience of the most vulnerable urban population. Specific actions toward sustainability should include reduction of poverty, as the underprivileged pay more for (in term of % of their net income) for food, transportation, health care and utilities. It is important not to only look to tax incentives, as it impacts different ‘earning groups’ differently.

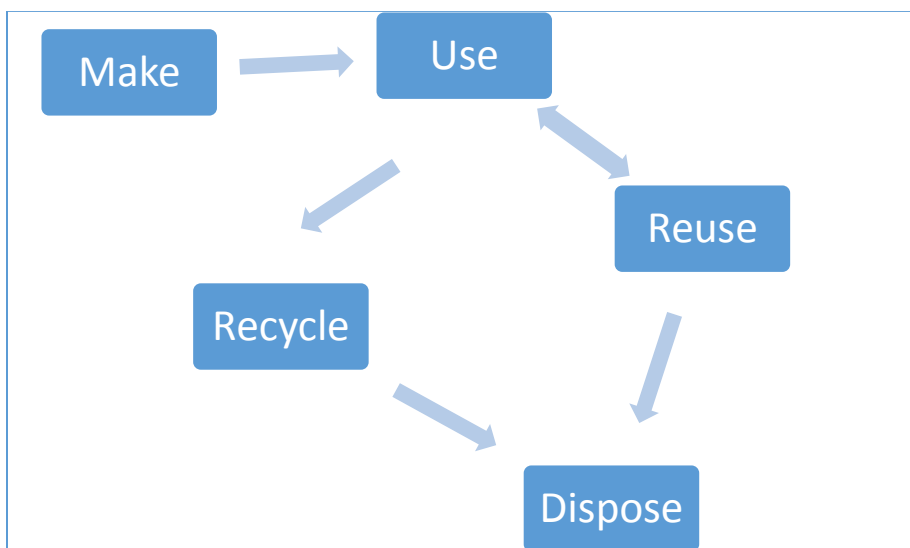


Figure 2. Sustainability as envisioned by participants

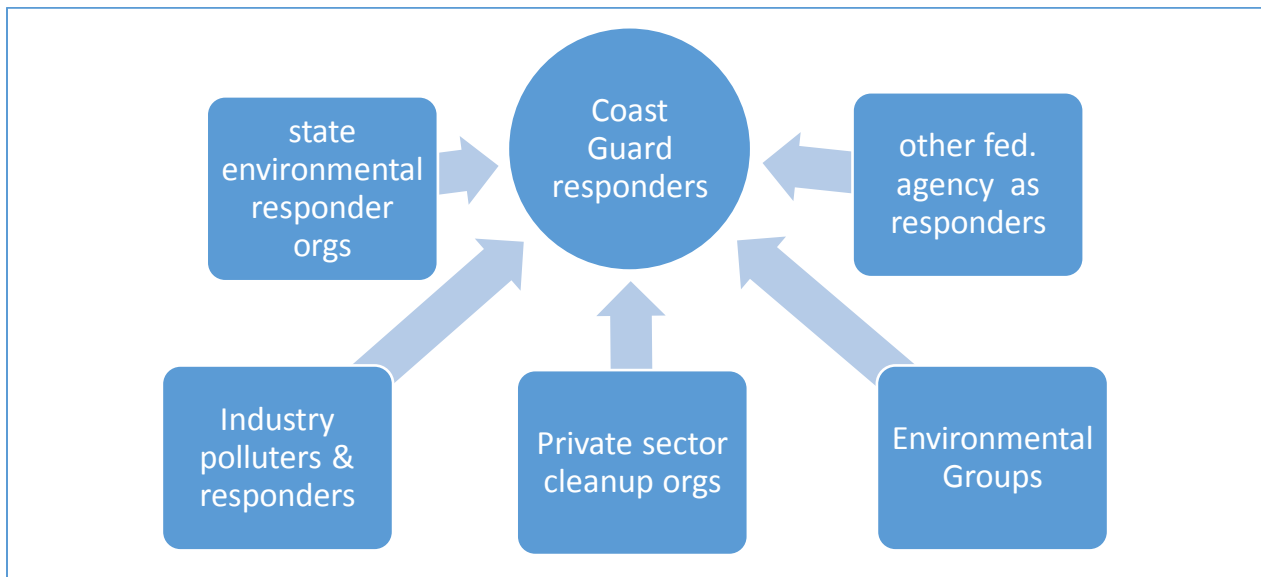


Figure 3. Environmental Incident Command as envisioned by participants

Break out Session and Report back: How do you define community?

Session Leaders: Barbara Stalbird, City of Saint Petersburg

- ✓ How do you define the community or communities you belong to?
- ✓ How does your community incorporate new members and encourage inclusivity?
- ✓ How does your community come together around resilience?

Although all people and all places are affected by climate change, each region of interconnected communities need to define common priorities for sustainability and resilience. A multitude of necessary actions are needed, with some more immediate than others and some requiring more resources than others. In this context, defining the community is a necessary first step – i.e people who participate in the decision making process and people who will be impacted by the decision. In the context of climate change, people that are subject to a common set of risks and problems can be considered part of a community. Community includes neighborhoods, cities, regions, schools, and churches, businesses (large, medium and small). Given the fact that climate resiliency and sustainability are so vital to protecting our community, the issues should be included as part of all planning discussions even if they appear seemingly unrelated. So the issue becomes more front and center in people’s lives, they are more educated, or at least aware of the importance and how it can affect them personally. Climate change and its effects impacts everyone and every aspects of our lives (Figure 4).

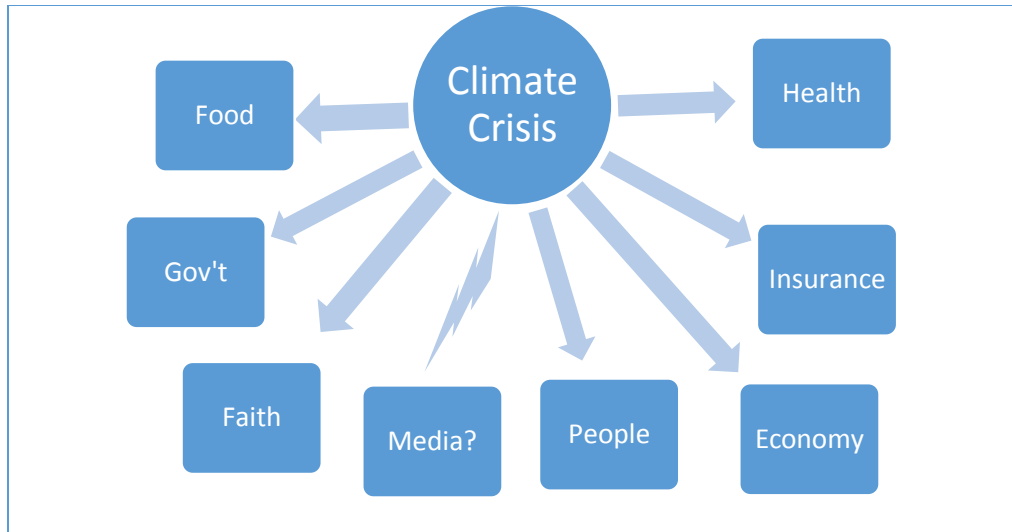


Figure 4. Climate crisis impacts everyone and every aspects of our lives as envisioned by participants

Below we have summarized key information from these sessions followed by a recommendations for the future workshop

1) Key Takeaways (General Audience Comments and Thoughts)

- ✓ Policies should be based on data and they should be inclusive
- ✓ Local government helping make it easier for homeowners and businesses to prepare by giving them options to opt out rather than opt in.
- ✓ Pathways to change are complex but not impossible. It should include financial incentives, change in political will, lobby and enactment of laws to foster change, shift in perspectives (from individual to community, from now to distant future) and communication of information and promotion of participation in governance
- ✓ iCAR should offer more public education events to promote awareness related to climate change and their implications.
- ✓ Media should play a greater role is promoting awareness of the issues and their social, ecological and economic impacts.
- ✓ Informed decisions based on effective communication is not possible without involved reporting from the media.
- ✓ Create an environment where small rural communities can have a voice in decision making and have ownership to usher in change.
- ✓ Informed decision making is key to fostering resilience.
- ✓ Knowledge sharing among experts and the public and identifying shared values builds a consensus to evoke change.

Workshop Presentations Can be Found at

<https://www.usfsp.edu/icar/icar-2019/#presentation>

Extended Abstracts (Organized by sessions and presentation order)

Florida Resilient Coastlines Program: Creating More Resilient Florida Coastlines Together

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Keywords: resilience, coastline, adaptation

The Florida Resilient Coastlines Program (FRCP)

The Florida Resilient Coastlines Program (FRCP) within the Office of Resilience and Coastal Protection in the Florida Department of Environmental Protection seeks to synergize community resilience planning, natural resource protection tools and funding to prepare Florida's coastal communities for the effects of climate change, especially coastal flooding, erosion and ecosystem changes from sea level rise. By using best practices for Florida developed during a multi-year research project conducted by the Florida Department of Economic Opportunity with funding from the National Oceanic and Atmospheric Administration, coastal communities can prepare for and bounce forward from acute shocks and chronic stressors. With the support of the Governor and Legislature, the FRCP provides funding and technical assistance for communities to plan for and adapt to the effects of sea level rise.

More information can be found at <https://floridadep.gov/ResilientCoastlines>

Updated Regional Sea Level Rise Projections

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Keywords: Sea Level Rise

This presentation offered overview of the revised recommends a common set of sea level rise (SLR) projections for use throughout the Tampa Bay region by the Tampa Bay Climate Science Advisory Panel (CSAP).

Climate Science Advisory Panel. 2019. Recommended Projections of Sea Level Rise for the Tampa Bay Region (Update). 19 p

Link to full

document: https://www.tbep.tech.org/TBEP_TECH_PUBS/2019/TBEP_05_19_CSAP_SLR_Recommendation.pdf

Coastal High Hazard Areas and Urban Planning: Establishing Elevated Development Standards for Multi-family development within the CHHA

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Overview

To reduce loss of life and property caused by natural disasters, the State of Florida requires local governments to identify a Coastal High Hazard Area (“CHHA”) in which public expenditures and population growth are limited (see Section 163.3178, Florida Statutes).

The CHHA is defined as “the area below the elevation of the Category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.” Areas included in the CHHA are governed both by state law and the policies adopted to administer those provisions in the local government comprehensive plans.

While the CHHA has existed since 1985, the definition and applicable standards have changed several times, starting in 2006, 2010, and most recently 2016. These changes have led to an expansion of the CHHA and have caused the City of St. Petersburg to re-evaluate its adopted policies. Figure 1 CHHA map shows the the 2010 area for the City of St. Petersburg in yellow, and the 2016 area is shown in red. The CHHA land area more than doubled from 7,705 acres to 16,328 acres. Many of our economic centers initially developed outside of the CHHA are now located within the CHHA boundary, restricting redevelopment options.

Proposed Amendments

Land Use Policy 7.1 of the City’s Comprehensive Plan currently prohibits requests for residential density increases with the CHHA. A proposed text amendment would allow consideration of land use plan amendments, subject to balancing criteria. These criteria include: Access to Emergency Shelter Space & Evacuation Routes, Utilization of Existing and Planned Infrastructure, Utilization of Existing Disturbed Area, Maintenance of Scenic Qualities /Improve Public Access, Water Dependent Uses, Part of Community Redevelopment Area, Overall Reduction of Density or Intensity, Clustering of Uses, Integral Part of Comprehensive Planning Process, Location within an Activity Center or Target Employment Center, Implement Specific ISAP or Priority Sustainability Actions, and Reduction of Storm Vulnerable Population/Structures.

In conjunction with this proposed text amendment are amendments to the City’s Land Development Regulations and Building Code to establish elevated design standards, intended to result in structures which are more resilient to storm surge and sea level rise, mitigate for service and infrastructure needs during and immediately following a major storm event, and enable safe re-occupation as quickly as possible following an evacuation. As currently proposed, these elevated design standards would apply to all new residential multi-family development with the CHHA, regardless of whether or not an increase in density increase was considered. The elevated land development and building code standards are summarized as follows:

1. Prepare Hurricane Evacuation and Re-entry Plan
2. Reduce Risk for Water: elevate an additional 2-feet above the required design flood elevation, for a total of 4-feet above Base Flood Elevation (addresses both Sea Level Rise and Storm Surge)
3. Reduce Risk for Wind: construct the building to meet design requirements of next higher classification of Risk Category, e.g. increase from 145 to 155 mph standard, Category 2 to 3 storm event
4. Enhance Recovery through selection of a Resiliency option: such as provision of on-site storage of solar generated power, increased efficiency HVAC systems, or providing solar or tank-less water heating systems. Projects up to 199 units select one option, projects over 200 units select two options
5. Projects which increase density must mitigate for Hurricane Evacuation Shelter space

Evolution of the Policy amendments

About the same time that the CHHA map was updated 2016, City staff was working on the adoption of a new planning area known as the Innovation District, when it became clear that this policy could limit the planned vision for the district. The CHHA overlapped with a portion of the proposed plan and zoning changes for the district. As part of that effort, staff first proposed the amendment to the policy in August of 2017, and then brought it back again last summer with the Innovation District package. Council requested a workshop to address the CHHA, which was held last January, where the concept of adopting elevated design standards was introduced. Over the course of the last two years since the consideration of the comprehensive plan policy change was initiated, there have been several storm events that led to the consideration of imposing the elevated building and design standards. These standards were initially based on a recent effort by the City of Norfolk Va, which established Resiliency Quotient requirements for all development within their City, which has similar coastal development issues to St. Petersburg.

After the January 2019 workshop, staff held several meetings with stakeholders and the Urban Land Institute (ULI) provided technical assistance in developing these innovative zoning and development standards. A second workshop was held with City council on July 25th to report the ULI findings, and Council recommended that staff bring back a more refined amendment, based on cost estimates. After a review of the estimates, staff revised the draft LDR amendment, determined that an amendment to the local Building code will also be required and held additional stakeholder meetings before presenting at a final council workshop on October 24th. Adoption hearings are scheduled for the first quarter of 2020.

Summary

Continuing to prohibit any changes in density within the CHHA may conflict with other policy goals and initiatives such as redevelopment of obsolete commercial sites along our multi-modal corridors with mixed-use higher density and intensity projects which support transit and removal of substandard buildings and housing, including mobile home parks. These goals need to be balanced with the concern of allowing more people to live in vulnerable areas, so if we are going to increase multifamily residential development opportunities in the CHHA we also need to increase the resiliency and sustainability of that development; if we are going to change the policy which prohibits changes, we need to make development safer.

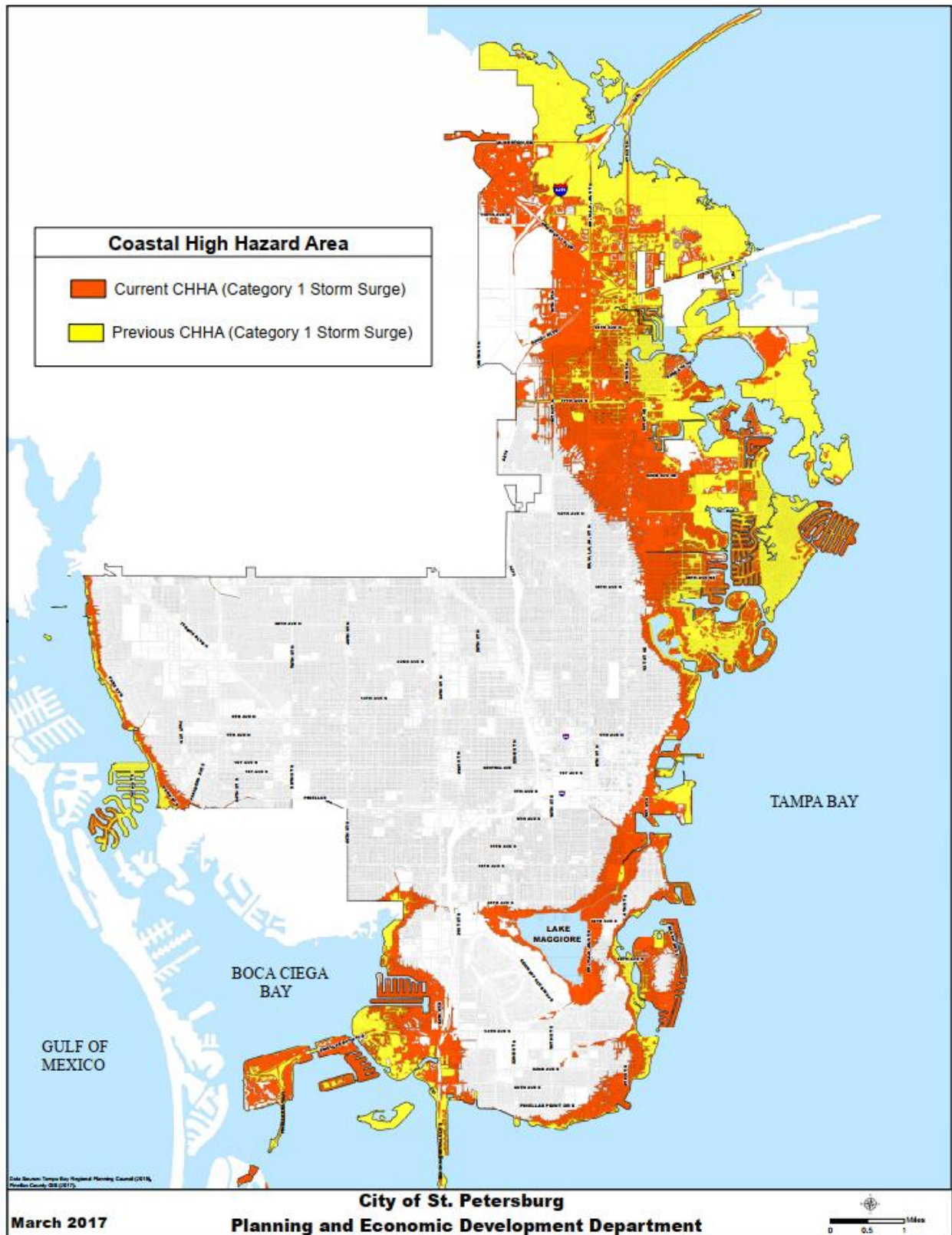


Figure 1. Coastal High Hazard Areas - 2010 and 2016

Regional Resilience Efforts

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Keywords: Mitigation Planning, Peril of Flood, Resilient Transportation, Local Mitigation Strategy, Tampa Bay

INTRODCUTION

The Tampa Bay Regional Planning Council (TBRPC) is made up of 27 elected officials who serve annual terms, 13 gubernatorial appointees who serve three-year terms, and 4 ex-officio members from the Florida Department of Transportation District 7, the Florida Department of Environmental Protection, the Southwest Florida Water Management District and Enterprise Florida. TBRPC is a convener of the Tampa Bay region on a multitude of planning issues. Our organization's focus areas are natural resources, land use, transportation, economic development and emergency preparedness. TBRPC is a leader in resiliency planning, and has recently formed the Tampa Bay Regional Resiliency Coalition to strengthen our region's ability to plan for the changing climate, reduce impacts and secure increased levels of federal funding to support resilient infrastructure improvements, adaptation and mitigation programs, which protect our communities, property and economies.

Cara Woods Serra, AICP, CFM is a Comprehensive Resiliency Planner with the Tampa Bay Regional Planning Council (TBRPC). Her current role at the TBRPC involves disaster preparedness, hazard mitigation planning, and resiliency policy. She is currently assisting member governments on projects related to hazard mitigation planning. Her presentation highlighted some of the existing planning opportunities the regional planning council staff have been able to leverage to incorporate consideration of climate change into planning efforts, and how coalition partnerships will most likely shape how resiliency is incorporated in the future.

SCOPE & IMPLEMENTATION

The first opportunity is the coastal element of the comprehensive plans. Coastal communities are required to include a coastal element in their comprehensive plan. The 2015 Peril of Flood Statute requires the addition of a redevelopment component to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The redevelopment component should include engineering solutions, construction techniques, and consider acquisition. Activities may include the development of a post disaster redevelopment plan, post disaster repetitive loss acquisitions, public outreach protection, preservation of natural floodplains as open space, and/or flood resistant design. Most jurisdictions had already adopted strategies that meet some but not all of requirements in their land development regulations, floodplain ordinances, or building codes. Peril of Flood requires that the redevelopment policies address flood risk from high-tide events, storm surge, flash floods, stormwater runoff, and sea-level rise, and the development of these policies has to be supported by data that would come from a hazard vulnerability analysis. Many jurisdictions had not completed a vulnerability analysis that considered all of these flood risks. Although some mapping resources are available, to accurately assess a communities vulnerability to these flood risks, an individual community vulnerability assessment is needed to meet the peril of flood requirements. Jurisdictions have partnered with private consultants, TBRPC and USF to complete vulnerability assessments.

Another opportunity to incorporate resiliency into existing planning processes is through the local mitigation strategies (LMS). Five of the six counties in the TBRPC service area have an LMS that will expire in 2020. The LMS meets the requirement for a hazard mitigation plan which is a prerequisite for certain FEMA grants. Currently FEMA encourages the inclusion of climate change/sea level rise in hazard mitigation plans, but it is not currently a requirement. At the State Level hazard mitigation plans are required to include consideration of changing future climate conditions based on 2016 guidance from FEMA. Because of this, the 2018 Statewide Hazard Mitigation Plan identifies how each natural hazard might be exacerbated by climate change. Currently Pinellas and Citrus County will be following this model to update their LMS. Manatee County will assess climate change and sea level rise as a separate hazard. Hillsborough County will also follow the state format generally, but will also incorporate data from a community vulnerability project conducted through a partnership with USF.

The LMS also ties back into the Peril of Flood requirements. A flood vulnerability analysis is a requirement for the Local Mitigation Strategy, and could be an excellent source of flood vulnerability data. The Local Mitigation Strategy also contains policies that may be integrated into the local government comprehensive plan to meet Peril of Flood Act requirements. In this way, the 2015 Florida Peril of Flood Act provides an important role in integrating hazard mitigation policies into the comprehensive plan. The key is integrated a broader range of flood risks to include FEMA flood zones, repetitive loss areas, storm surge areas, increased precipitation, and sea level rise.

The final opportunity that the Regional Planning council staff have leveraged to incorporate resiliency into planning documents is the Long Range Transportation Plans. Pinellas, Pasco and Hillsborough MPOs are currently conducting their 2045 Transportation Plan (LRTP) update, and new federal requirements state that Long Range future LRTP updates must work on “improving the resiliency and reliability of the transportation system and reducing or mitigating the stormwater impacts of surface transportation”.

TBRPC’s Director of GIS, Marshall Flynn mapped sea level rise, storm surge, and increased precipitation, in Pasco, Pinellas and Hillsborough county. These flooding risks were then evaluated against the existing transportation network with the goal of identifying and prioritizing adaptation and mitigation strategies. In addition to being incorporated into the long range transportation plans, extensive outreach was done to the local mitigation strategies working groups, and the findings will be integrated into the Local Mitigation Strategies.

The previous planning examples took advantage of state or federal policy changes and leveraged TBRPC staff expertise. As the work of the coalition expands we will rely heavily on partnerships to incorporate resiliency in areas that leverage the expertise of partners. This may include planning documents such as affordable housing, historic preservation and economic development plans in partnership with local governments nonprofits and chambers of commerce. We may also look to partner with public and private sector engineering professionals to consistently address resiliency in capital improvement plans and stormwater management plans. Some of this work is beginning through the resiliency coalition work groups. The active groups include clean energy work group, shorlines work group, geospatial data work group. More information and to sign up for a work group you can go to our website.

The TBRRC will host its first Resilience Leadership Summit in January of 2020. Local, regional and national experts will define a vision for transforming communities over the next 5-10 years

to address major economic, social and environmental challenges. The Leadership Summit will include a facilitated prioritization session to define goals for the Tampa Bay Regional Action Plan.

REFERENCES

2020 Resilience Leadership Summit. <http://www.tbrpc.org/summit/>

Florida Adaptation Planning Guidebook. 2018.
<https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf>

Climate Change from the Streets

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Keywords: Climate change, environmental justice, environmental studies, sustainability, urban planning

Climate Change from the Streets is about people, place, and power in the context of climate change and inequality. Although the science of climate change is clear, policy decisions about how to respond to its effects remain contentious. Even when such decisions claim to be guided by objective knowledge, they are made and implemented through political institutions and relationships—and all the competing interests and power struggles that this implies. Through a qualitative ethnographic investigation, this book contributes to the field of environmental studies by highlighting how social movements are influencing the policymaking process to ensure equitable climate change solutions in low-income communities of color throughout the U.S. and globally.

In the book, I argue that for society to successfully resolve the phenomenon of climate change, critical attention must be placed on the cultural and human dimensions of climate policy. Central to this argument is the demonstration that environmental protection and improving public health are inextricably linked and maintaining that link is key to advancing future climate action policies.

In writing the first book that analyzes California's environmental justice movement in the context of climate change and transnational activism, I foreground the fact that activists living next to polluting sources have moved from the margins to the center of global environmental policies. They represent groups rooted in some of the nation's poorest neighborhoods, most directly affected by climate change and pollution. Through advocacy campaigns, community-based research practices, and lawsuits these activists have transformed environmental protection paradigms by insisting upon the importance of their own "embodied perspectives." The book documents how individuals and activist groups have organized to ensure that climate solutions tackle both global problems and local needs. It offers their

example as a critically important case study for scholars, policymakers, advocates, urban planners, and environmental analysts seeking new directions in climate policy and justice worldwide.

KEY POINTS OR CONCLUSIONS

Recent decades have shifted the issue of climate change from that of a global phenomenon to one of local relevance already affecting individuals and their communities. *Climate Change from the Streets* explores the perspectives and influence low-income people of color bring to their advocacy work on climate change. In California, activist groups have galvanized behind issues such as air pollution, poverty alleviation, and green jobs to advance equitable climate solutions at the local, state, and global levels.

REFERENCES

Mendez, Michael (January 2020). *Climate Change from the Streets: How Conflict and Collaboration Strengthen the Environmental Movement*. New Haven, CT, Yale University Press.

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Reciprocity, Reflection, Regeneration: Lessons on Leadership for Resilience from Indigenous Communities of High Andean Peru.

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Keywords: Resilience, Regenerative governance, Reflection, Leadership, Uncertainty, Complexity Leadership Theory, Quechua, Tampa Bay, Andean Peru.

Abstract

This research employs a new leadership framework in combination with ethnographic analysis in order to draw practical lessons about resilient leadership. In specific, field research used Complexity Leadership Theory (CLT) to assess resilient leadership practices in Parque de la Papa, a set of Indigenous communities in high Andean Peru.

We have conceptualized, organized & practiced leadership in particular ways in the global North/West. Leadership comes from individuals: leaders. Authority is granted by structure, often hierarchy. Social patterns of selection into positions of authority introduces systematic bias. While individual, hierarchically-organized leadership has strengths such as efficiency and continuity, it creates fragility in conditions of increased uncertainty & complexity (Boisot et al 2008).

This is relevant now, as the background conditions to civilization are changing. Research in socio-ecological systems anticipates the next 75 years will not be as stable as the past 75 (IPCC 2018). While the reasons are myriad, this can be summarized under the twin ecological & energy crises. If we address our ecological crisis, we drive a disruptive energy transition. If we fail to engage with the energy transition, it will drive a cataclysmic ecological crisis. Both will drive increased uncertainty for human communities generally, requiring greater adaptability. As a result the leadership that has been effective (or at least passable) in the past may encounter the edges of its operational effectiveness.

All of this has set up a quest for new ways to conceptualize leadership. We need approaches to conceptualizing, teaching & practicing leadership that lack the fragility of the dominant approach, and are practical & actionable, & oriented towards this critical capacity of resilience in conditions of uncertainty. Complexity leadership theory (CLT) is an approach to conceptualizing leadership as distributed phenomena that emerge from relationships rather than people (Hazy & Uhl-Bien 2015). Previous work has employed CLT to assess the degree to which leadership practices accounted for resilience in urban systems (Bush 2016). The best case examples to identify the relational, organizational, or personal practices which might foster resilient leadership may not fall within the bounds of American culture. Cases that exhibit "positive deviance" can be rich places for learning and theorizing in complex systems (Anderson 2005). As a result, an ethnographic analysis of positively deviance cases may be useful in identifying practices for resilient leadership.

Indigenous communities of the high Andean region may hold lessons for us. The inheritors of the cultural legacy of the Inca, these communities have navigated successive waves of uncertainty, as brought by Spanish colonization, the Peruvian civil war, and globalization. While the fortunes of these communities have been far from overwhelmingly positive, throughout these they have maintained a degree of autonomy and self-determination, as well as sustainable relationship with their supporting ecosystems.

This research uses thick description to illustrate four of the cultural elements and practices that lead to resilient leadership in Parque de la Papa. First is the principle of reciprocity. Second are the specific practices of multi-scalar reflection. Third is the necessary role of common property resources (CPR) in enabling resilience. Fourth is an approach to governance that enables regeneration, or the ability to establish new goals to reconstruct organization and social activity toward that new goal without the prod of a crisis or disaster. Taken collectively, the four contribute to an emergent leadership consciousness they have developed an approach leadership that has led to

resilient communities over long timescales. We close with some thoughts about how to adapt the practices and lessons from these communities into practical planning work in the context of Tampa Bay.

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ENVIRONMENTAL MOVEMENTS

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Keywords: Social movements, framing, frame disputes, frame alignment, geoengineering

OVERVIEW

This abstract presents a brief summary of a portion of a larger empirical analysis of an original dataset consisting of the geoengineering-related discourse of 16 environmental movement organizations over the course of a decade. During the 2005 to 2015 study period, proposals to reflect sunrays or capture carbon that once seemed like “false solutions” or “dangerous distractions” began to be taken seriously by some environmentalists as a possible “Plan B” in the face of ever-increasing carbon dioxide emissions. These differential framings of geoengineering are conceptualized as frame disputes (Benford 1993).

GEOENGINEERING PROPOSALS: A (VERY) BRIEF PRIMER

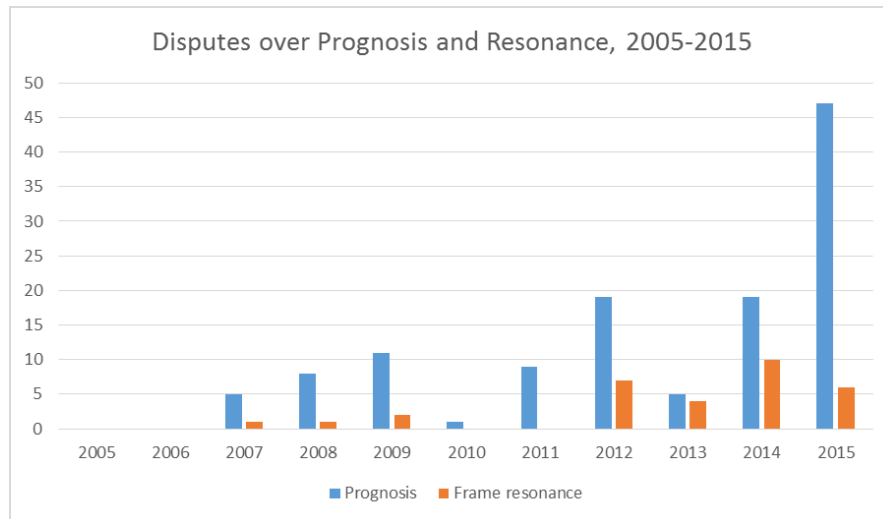
In 2012, a Sierra Club newsletter defined geoengineering as “The controversial idea that we can fix the problems of climate change by directly engineering the earth’s systems to cool it. Examples would include building a sun shade in space to block solar radiation, pumping sulfur dioxide into the atmosphere to reflect sunlight, and fertilizing giant plankton blooms to absorb CO₂.” This is an accurate description of the two main types of geoengineering methods that have been proposed, though other methods also exist. Building a sun shade in space or using reflective particles to reflect the sun fall under the umbrella of solar radiation management, while various methods of capturing or “sequestering” carbon dioxide are known as carbon dioxide removal. On the whole, solar radiation management tends to elicit more controversy than carbon dioxide removal.

FRAME DISPUTES OVER GEOENGINEERING PROPOSALS

The stories that we tell to adherents, opponents, and the wider public are critically important for mobilization. The identity work that goes into developing a shared sense of “us” (and, consequently, “them”) is a necessary precondition for social movement activity. Social movement organizations must find a way to accommodate as many different individuals’ identities into their collectivities as possible, while maintaining some semblance of difference from the dominant society. Likewise, it seems obvious that collective identities must hang together in a relatively coherent fashion for a social movement to be appreciable as such. Yet it is well-known that a movement’s constituent organizations engage in “boundary framing” processes that function to differentiate a movement’s groups from one another (Hunt and Benford 1994). In this way, social movement organizations are linked in a continuous dialectic of sameness and difference. Analyzing frame disputes within a social movement provides a means by which this dialectic can be explored and elaborated.

As a conceptual apparatus, the frame dispute affords researchers a backstage method of sorts—a means by which social movement scholars can observe how movements accomplish

what Turner and Killian (1972) called the “illusion of unanimity.” These kinds of negotiations usually take place away from the judging gaze of movement opponents or the media, and thus require the kind of insider status afforded by participatory research methods. This is not necessarily the case for nascent environmental issues like geoengineering. In their public discourse online, environmental movement organizations frequently disagreed with each other about the meaning of geoengineering proposals and how they should be framed.



As the chart above shows, prognostic frame disputes were most frequent, and increased over time. The frequency of disagreements over the meaning of geoengineering solutions should not come as a surprise—these proposals are still very much in-the-making and most of the discourse surrounding them involves evaluations of their efficacy (i.e., “Will this solve the problem?”) and propriety (i.e., “Is this solution appropriate?”). Frame resonance disputes were also common, and increased over time. Further, the onset of frame resonance disputes did not signal the end of prognostic disputes. In other words, attention to frame resonance does not mean that the tasks of problem identification and attribution, or the evaluation of solutions comes to an end. Diagnosis, prognosis, and resonance appear to be recursive—we should not expect a neat, linear progression from problem to solution to strategy. It may be necessary to go back to the basics before moving forward again.

What kind of stories do activists tell about geoengineering? The groups I studied tended to tell two kinds of stories, each with very different implications for society. Some groups portrayed geoengineering as a “dangerous distraction,” while others came to view geoengineering as a regrettable responsibility over time. These disagreements show that the environmental movement is not a discursive monolith. There is room under the broad umbrella of environmentalism for many different kinds of environmentalism—from “dark green” to “bright green,” purist to pragmatist. Some environmentalists are more likely to embrace technological solutions to the climate crisis than others. Others still will never accept such solutions, seeing them as anathema to a harmonious balance with nature. Yet both find common cause within a single, identifiable social movement.

Discursive flexibility likely bolsters actual and potential membership, clearing the space that is necessary for people to choose alternative paths toward the same goal. These alternative paths present themselves to the social movement scholar as collective identities, but to the activist they are more than mere labels. Collective identities provide individuals with a cultural touchstone that shapes their framing activity. In turn, this framing activity alters collective identities by reinforcing, shifting, or obliterating discursive boundaries.

Indeed, when it comes to geoengineering proposals, it may be more useful to regard the environmental movement as an identity collective—a collection of disparate collective identities—rather than as possessing a dominant, unified frame that the movement can be expected to coalesce around. This kind of discursive flexibility holds a great deal of utility for social movements, and may help explain the durability of the environmental movement. Indeed, this type of flexibility may be necessary during contentious episodes of nascent reality construction.

WHAT ABOUT TAMPA BAY?

What does this mean for those concerned with adaptation and resilience in Tampa Bay? Early research on “frame alignment” within social movements may point toward ways of smoothing over any issues that might arise during disputes over framing. According to Snow, Rochford, Worden, and Benford (1986), movement organizations tend to use four strategies to align their framings with the individuals they seek to influence:

- Frame *bridging* is when an organization makes linkages with previously-unmobilized individuals that hold ideological affinities with the organization.
- Frame *amplification* involves clarifying the values and beliefs of an organization to invigorate the way a frame bears on an issue.
- Frame *extension* requires expressing the goals and activities of the organization so that participation by those with congruent concerns can see their fate as linked with those of the organization.
- Frame *transformation* takes place when new frames must be constructed because of a disjuncture between old understandings and the experiences of potential adherents.

Local efforts and successes with regard to coastal cleanup by groups such as Tampa Bay Watch, the Keep America Beautiful Affiliates (Tampa Bay, Pinellas, Pasco), and Palm Harbor Coastal Living are encouraging, and could be extended in a way that shows how individuals and organizations can mobilize to effectuate social change around issues like red tide and sea-level rise. Applying frame alignment strategies in situations when frame disputes might arise helps to facilitate connections between individuals and groups, and may also improve coalition-building between like-minded groups who share similar goals with regard to coastal adaptation and resilience.

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ENVIRONMENTAL CITIZENSHIP IN PRACTICE

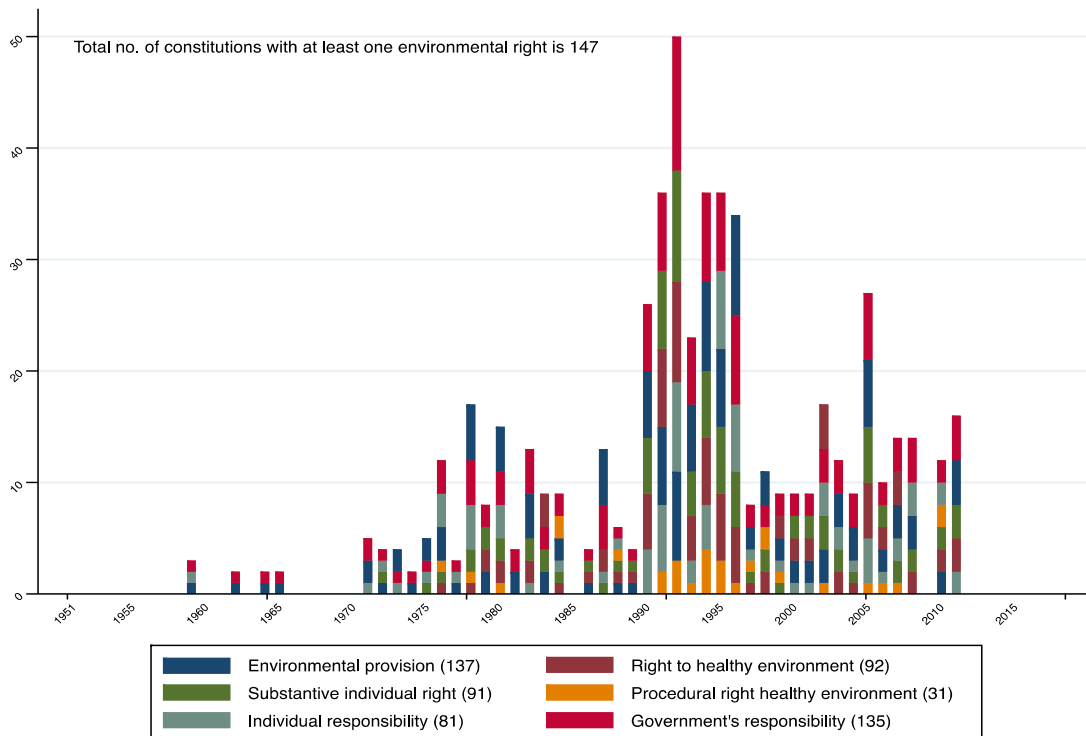
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Keywords: Environmental Citizenship; natural resources; environmental democracy; climate justice; access to environmental information

WHAT DO ENVIRONMENTAL RIGHTS AND DUTIES LOOK LIKE?

Environmental citizenship is the set of environmental rights and duties nations bestow upon their citizens. As climate change continues, it is important to understand what rights people have across the world to protect them from environmental harms. It is also important to find out if people have access to their environmental rights, hold any decision-making power, or get to participate in the construction of their rights. Thus, it is important to understand what rights citizens have and where they are concentrated.

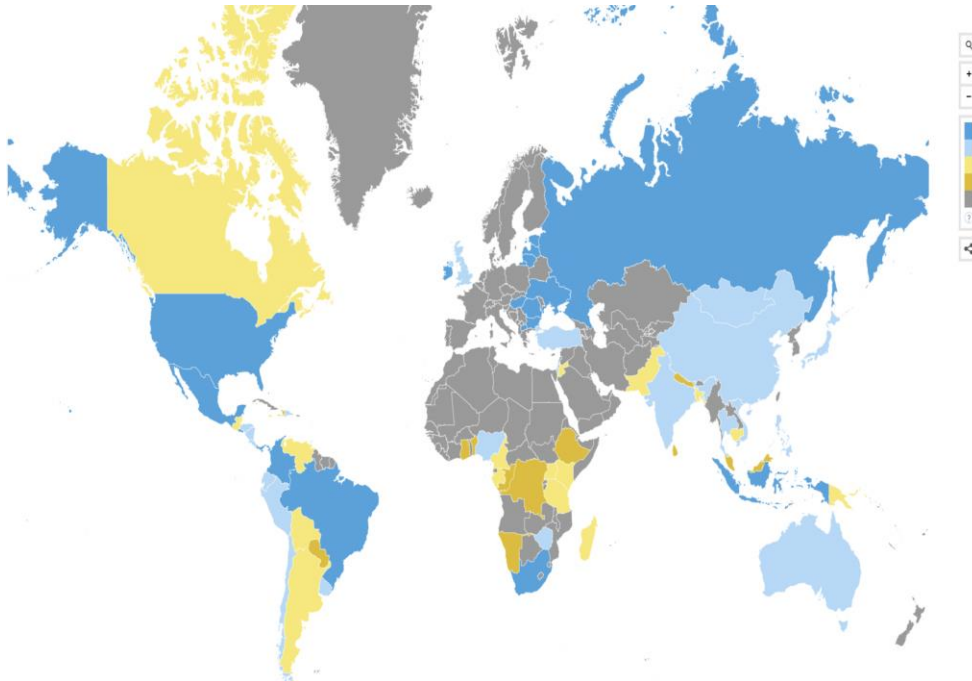
Figure 1. The proliferation of environmental rights across countries



- Source: Boyd, D.R. (2012) *The Environmental Rights Revolution* UBC Press. Graph created by Andreas Duit, Stockholm University (2019)

Figure 1 (above) shows some of the environmental rights citizens have across the world and the years in which they were adopted. Figure 2 (below) shows how environmental rights are distributed across nations. This figure suggests that environmental rights are unequally distributed across the world, with more wealthy countries enjoying more environmental rights than less wealthy nations. My on-going research project, with collaborations with Andreas Duit (Stockholm University, Sweden) and Peg Christoff (Stony Brook University, New York) is to uncover what rights citizens have, where they are concentrated, what factors increase the proliferation of these rights, and finally, do people have access to these rights and do they actually use them?

Figure 2. The prevalence of environmental rights across countries (blue is high rights and orange is the least rights, gray is no data available)



- Source: World Resources Institute (WRI) (2019). *Environmental Democracy Index*. World Resources Institute: Washington, DC. <http://environmentaldemocracyindex.org/>

LACK OF ACCESS TO ENVIRONMENTAL INFORMATION

At present my colleagues and I have found that environmental rights appear to be unequally distributed, with more wealthy areas and countries enjoying more rights while less wealthy countries have less. However, it matters if people know what rights they have and know how to use them. I will provide two anecdotes to provide some insights into the challenges we are facing, both locally and globally to achieve environmental democracy. Within these narratives I also highlight potential solutions going forward, which I will detail in the following section.

I have been trying to figure out what environmental rights we have here in Florida, as I have recently moved my family and I to this state. From my initial research, I found that relators are not required to tell customers the flood risk of the property. This was troubling, so I wanted to look at the laws myself. I spent a few hours googling to try to find state-level laws on environmental rights and protections. For instance, I was interested in what laws we have

around residing in flood risk areas, how our opinions are incorporated into pollution and fishing laws, and how I could be an active participant in deciding what businesses are welcome and which are regulated in our town or county of residence. Instead of finding this information easily, I went down a rabbit hole trying to even locate the laws themselves on the internet, let alone a place where the laws are interpreted for us in accessible language. The best I could find was an organization seemingly created for students to study for the environmental portion of their Florida bar exam. If I wanted access to these materials and laws I would have to pay and fill out an application with some affiliation that would explain my interest in their information (University, etc.), mail in the application, and pay an annual fee.

My colleague Peg Christoff and I recently returned from field work in a few rural farming villages in Gujarat, India, where we investigated how people, especially women, were adapting to increased floods and droughts from climate change. Our friend and colleague Trupti Jain from one of the villages worked for the government for many years trying to get women land rights in Gujarat. However, she was unable to make this happen. In result, Trupti started an NGO, Naireeta Services Private Limited (NSPL) to provide an irrigation technology, *Bhungroo*, to the women so they could store water during floods and use that water during droughts for their crops. She gave the rights of the technology to women in hopes that they would help make their farms bountiful, giving them increased income and decision-making power in the household. Through our 48 interviews we found that women who received the technology benefited tremendously in terms of wealth, power, agency, and confidence. Some of them are even using their newfound power to fight for land rights.

PATHWAYS FOR ACTION GOING FORWARD

What should we do? We should focus on improving environmental citizenship. We need to increase rights to natural resources, access to environmental information, participation, and decision-making and work towards climate justice. This will be especially crucial as environmental racism and climate refugees, migration and gentrification leave more people at risk, stateless, and on the move. More specifically, we need easier access to our environmental rights locally so we can make good decisions for ourselves and our families as climate change continues. For example, in the Tampa and St. Pete region, we need access to information on flood risk when finding a place to live. Additionally, we need to continue to develop context-based solutions when environmental rights are absent or fail to address our climate change related problems. For example, villages in Gujarat benefited tremendously from the irrigation technology, especially women who enjoyed the rights to the technology in lieu of land rights, and in result, experienced increases agency and monetary benefits. In sum, we need to strengthen environmental rights both nationally and globally. Global and local governance is key as climate change continues.

KEY POINTS

- Environmental rights are unequally distributed across the world
- Environmental rights are difficult to access in the Tampa area and Florida in general
- Context based adaptations to lack of environmental rights, such as the use of technologies can be transformative for at risk populations

Corporate Sustainability and Climate Realities

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Keywords: Sustainability, CSR, goals, science-based targets, stakeholders

INTRODUCTION

Corporate America has a long history engaging on sustainability writ large and climate in particular. My own company, working with the EPA Climate Leaders program, set its first goal in 2004, and we were by no means the first. Goals then were modest, as was investment, with all of the focus on mitigation rather than adaptation.

Since that time, companies have evolved their climate initiatives significantly - raising their targets, broadening their scope, and deepening their commitment. Not all companies are in the same place, while individual organizations may not be at the same stage in all dimensions. And not all progress linearly through the sages.

As far as they have come, there remains a great need for companies to accelerate their progress and impact, particularly in the areas of policy advocacy and in engagement with their local communities.

JUSTIFICATION - Why Companies Act

Some early visionary CEOs - Yvon Chouinard of Patagonia, Paul Polman of Unilever, and Ray Anderson of Interface (famously after reading Paul Hawken's *Ecology of Commerce*) - launched their sustainability initiatives by building a vision of a sustainable future deeply into the core values of their companies. Many more, however, first started down their paths through pressure from activists leading to negotiation and eventually collaboration. Their climate strategies focused first on the "low hanging fruit" or lowering emissions by reducing energy use and thus decreasing costs.

Over time, pressure began to come from investors and customers, with internal motivation shifting toward risk management. Long-term investors recognize that sustaining value means managing long-term risks and exploiting opportunities from the changing climate, as expressed Larry Fink, CEO of BlackRock published an open letter to CEOs in 2018 stating that companies must not only enrich shareholders, but also contribute more broadly to society. Meanwhile customers - particularly in business-to-business contexts - have been setting expectations and demanding action from their suppliers. Executive decision-makers began to factor in the risks from climate change (e.g., physical threats and health implications); of economic and policy responses to climate change (e.g., product standards and regulation); and of reputational risks (e.g., employee attraction and customer perception), while looking to exploit market opportunities through product redesign.

Corporations now also find themselves responding to calls for action coming from within company walls, with employees speaking out (and even, in the case of Amazon, filing a

shareholder proposal) and from young, potential employees choosing employers based on the alignment with their values. And as the effects of climate change have become more immediate and conspicuous, more corporate leaders are becoming motivated by the sheer urgency of action.

SCOPE & FOCUS - What Are The Boundaries of Climate Strategy?

The early days of corporate responsibility focused on companies' own facilities and particularly on energy use and operational efficiency. While at first resistant, companies came to accept not only their role in supplier actions, but the extent of physical risk that lived - sometimes very deeply - in their supply chains. This factor was brought home by events such as an industry-wide hard drive shortage arising from floods in Thailand in 2011. Companies next turned to their downstream value chain - the impact of their products and services in use (e.g., the need for heater water for washing clothes, or energy consumption in data centers) and at end of life.

Though community engagement has happened episodically on issues directly related to corporate impact, the frontier facing leading companies now is broadening their scopes to include their communities and expanding their climate lenses to incorporate social justice. It is early days, but there is great untapped opportunity and unarticulated risk in this arena (described by this author in an upcoming article on GreenBiz.com¹.) Leading companies have a chance to participate in the design and implementation of resiliency planning and policy to deal with catastrophic events (such as flooding and wildfires) as well as fundamental shifts (such as in health and job opportunities).

AMBITION & GOALS - How Much Should We Expect of Ourselves?

My company's first goals, like many others, were based on what we knew we could accomplish - ideally, what we were already on a path to achieve. We set simplistic targets, encompassing only our operations, focused only on intensity, (i.e., emissions per unit of some measure of business activity such revenue, square footage, etc.), and aiming for the very foreseeable future (e.g., 2-3 years) or too far in the future to spur action. We evolved to be more aspirational, believing (for the most part, correctly) that ambitious goals would inspire innovation, and adopted absolute reduction goals, often (commonly with a 2020 target). More recently, companies have moved to Science-Based Targets² defining what they must do throughout their value chains over the next decade, with their goals framed by the 2°C target, and now, for the leading companies, 1.5°C as described in the 2018 IPCC report³.

RISK - How Does Climate Factor Into Risk Management?

Enterprise risk management (ERM) and sustainability risk assessment are too often separate activities. ERM traditionally focused on near term (2-5 years) risks that are familiar and well-understood, while leading companies began using scenario analysis techniques to better envision possible futures. Companies on the forefront are now bringing together risk managers and sustainability leaders to explore "resilience"; i.e., how corporations can prepare themselves - and hopefully, their communities - to face unpredictable and unknown risks.

¹ Insert link to GreenBiz article

² <https://sciencebasedtargets.org/>

³ [IPCC Special Report Global Warming of 1.5°](#)

STRATEGY - What Frames Corporate Strategy

The priorities for corporate sustainability strategies were initially driven by outside forces - activists and NGOs - and by visionary leaders. The state of the art is a much more collaborative process with both external and internal stakeholders engaging with corporate executives to identify that which is most “material”; i.e., where the company has the greatest risk or opportunity, and the most leverage for impact. With the publication of the Global Goals⁴ (aka “SDGs” or “Sustainable Development Goals”), we start to see the shift toward applications of Theory of Change - i.e., how a company can influence overall progress toward these goals even beyond the sphere of its own business.

OTHER DEVELOPMENTS

Other areas that have evolved rapidly and continue to change under leadership of visionaries include the reporting of sustainability goals, strategies and progress, and the levers available to companies to effect change, including movement from operational efficiency through product improvement, to fundamental business re-design and soon, we hope, to greater advocacy of public policy supporting critical action on climate.

CHALLENGES

Many challenges and obstacles remain. A few of the high-level factors that slow corporate action on climate change:

- There is substantial tension between shareholder value and stakeholder value and between short-term financial results and long-term value resulting in companies being penalized for investing in the long-term at the expense of near-term stock price.
- Policies, particularly at the federal level, are needed to bolster company action by leveling the playing field between leading and lagging companies, providing predictability, spurring investment in climate-focused innovation, and address market failures.
- The politicization of climate change adds risk to companies choosing to publicly advocate policy changes.

KEY POINTS OR CONCLUSIONS

- Corporations are serious about tackling climate mitigation and adaptation, yet their work needs vastly greater scale and urgency.
- Stakeholders - including community members, employees, customers, and investors - are demanding more.
- Major obstacles remain, particularly in the arenas of policy and shareholder expectations.
- Companies should be playing a greater role in developing greater resilience in their communities.

⁴ <https://www.globalgoals.org/>

Creating a Resilient Economy

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Keywords: Sustainability, resiliency, stakeholders, business, economy

INTRODUCTION

Creating a resilient economy requires the coordinated efforts for sustainability and resiliency planning by corporations, mid and small sized businesses, and city government. Each has a role to play and unique challenges to address when supporting the broader community. This panel discussion sought to highlight those interconnections and the strengths that each entity brings to the effort.

SETTING THE STAGE

Sustainability and resiliency planning are foundational to creating a resilient economy. Leveraging definitions from the St Petersburg Integrated Sustainability Action Plan (ISAP) we define a *Sustainable City* as one that balances social equity and environmental stewardship with a thriving economy. We also define a *Resilient City* as one that adapts and prepares for climate change effects like sea level rise and extreme weather.

Discussions about sustainability and resiliency often focus on the efforts of corporations. They are leading the way in these activities (though with work to still be done). According to the U.S. Small Business Administration Office of Advocacy, in the United States over 40 million businesses have 99 or less employees. St. Petersburg, like the rest of the country, is predominately small and medium sized businesses. Some of the successful efforts by large businesses can be directly reapplied in smaller organizations. Other activities will require adaptation due to scope, cost, and time required. Even with the work of private entities there are gaps where municipalities are uniquely positioned to best address. It will take the collaboration of large, medium, small businesses and city governments to make a truly resilient economy.

CORPORATIONS - Sustainability and Climate Realities

Please refer to the Corporate Sustainability and Climate Realities abstract by Kathrin Winkler.

MEDIUM AND SMALL BUSINESSES - Small Business “Success” After a Disaster

The quote by Dwight D. Eisenhower “plans are worthless, but planning is everything” is particularly true for medium and small businesses as they consider the issues of sustainability and resiliency. As many business owners know this planning can be time consuming and expensive but is becoming increasingly important. They not only do business owners need to think about their business, but also their homes and the resiliency of their employees and customers. This is key to their survival.

According to FEMA, 40% of small/medium businesses fail after disaster, and another 25% will fail within one year following the event. Though that may be hard to substantiate it does show that it is vital to prepare and “potential proof” business. Nationwide Insurance did a study in 2017 about small businesses and what choices they're making regarding disaster planning and business interruption plans. The study found that most businesses do not do this planning, and most of them realize they probably should.

With that said no amount of planning will be enough because every crisis will be different. It's inherent in when an emergency is, it's unexpected, and therefore it's not going to happen the way it was planned. But planning helps the business owner adapt to a crisis situation more adeptly. There is more flexibility because options and contingencies have been explored.

Businesses should identify the potential disruptions, look beyond the four walls, consider the full scope of the business. This includes absence of key employees (e.g., who handles tasks like insurance and banking), ability of employees to get to the office (e.g., transportation, childcare), supply chain for key supplies, and alternative income streams. The U.S. Chamber's program Resilience in a Box is useful and outlines the different areas to consider.

CITY GOVERNMENT - Building Resilient Communities

To have a resilient economy, a community must focus on identifying strategies to better serve vulnerable populations. Experience from recent disasters have highlighted the need to address concerns in a totally different manner than before. In the past, citizens who did not evacuate had been seen as not wanting to, when in reality they may not be able to because of life challenges. Citizens without power need a central place in proximity to their homes, such a local community center, to recharge cell phones but to also connect with resources that assist in their recovery.

Cities must evolve and make sure that the needs of communities are served better. Build services that wrap around families, for catastrophic disaster or on a regular basis. Programs being implemented include helping families build emergency funds, facilitating the creation of small businesses, deploying street teams that go door to door following an event and pass out information to aid in the recovery efforts, increasing communication about public transportation options, and nurturing neighborhoods and families. City government can be a catalyst for commerce that will strengthen vulnerable communities and lead to a more resilient economy.

CONCLUSION

There is still a lot of work to be done. Engage the resources of large businesses (e.g., talent, physical spaces) in the sustainability and resiliency planning already underway. Look for ways to challenge corporations, as good members of the community, in how they can assist in addressing the issues faced by small and medium businesses, as well as vulnerable communities.

The past belief of shareholder primacy (that the corporation's primary obligation is to shareholder value) is changing. The formation of B-corporations or benefit corporations is one example. Even with a traditional focus on shareholder value if a systems view is taken it allows for corporate investment in the community. Stock from one company may go up if it spends its money on buy back instead of investing in the long term. But stock in other things may go down. This idea of shareholder primacy is focused on this mythical shareholder who owns nothing but stock in one company. In reality, shareholders own stocks in multiple companies, and in turn in the whole community.

Small and medium businesses can look for ways to improve their planning efforts. Whether through government programs, community based collective impact such as Grow Smarter, or new ideas such as a resiliency planning co-op or peer mentoring.

Thoughtful planning, flexibility to adapt to the realities of an event, and innovative solutions are all components of creating a resilient economy.

Creating Inclusive Communities

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Abstract

The purpose of the presentation was to demonstrate the importance that diverse and inclusive communities play in adapting and mitigating impacts of climate change. Our theory of change - we will win if we work together - recognizes that no single organization, municipality or group can address climate change at scale and that only through collective and coordinated efforts can we slow climate change and address the impacts in meaningful ways. Drawing examples and lessons from our experience as a diverse network of 175+ member organizations that address climate change, we contend that inclusivity is not enough; rather communities, efforts and relationships must center justice, equity, diversity and inclusion (JEDI) in principle and practice. In so doing, we've learned that we must co-create spaces where everyone has a voice and every voice matters; be clear, consistent and transparent on how decisions are made; co-create, review and, where necessary, revise ground rules and hold people accountable to them; have the hard conversations and stay in the room; institutionalize and operationalize principles of JEDI at all levels.

COMMUNITY BUILDING & SUSTAINABLE DEVELOPMENT

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Keywords: democracy and technical expertise; consensus building; design-centered collaboration; charrettes.

INTRODUCTION

As a sociologist, my research has focused on professional expertise, specifically on the role of authoritative experts in the processes of “placemaking.” From this point of view, I suggest that the central questions here have to do with *for whom, by whom, and to what end* the work of building sustainable communities will be accomplished. At the heart of sustainability is the challenge of integrating technical expertise and democratic processes in the collaborative work of creating a future that reflects our intentions rather than the unintended consequences of our actions and ill-formed institutional arrangements.

The real challenge of sustainability isn’t the technical complexity of the problems we need to solve but the challenge of facilitating a productive collaboration between citizens and technical experts in an on-going adaptive process, without allowing one to undermine the potential contributions of the other. In the last part of the presentation, I suggest a design-centered *charrette* process as one approach, based on my work with the National Charrette Institute.

UNDERSTANDING THE PROBLEM

There are two mistaken assumptions often built into the way we think about the challenge of sustainability. First, there is the assumption that if we can just get the science right, we will know how to do the right things, and we will be able to convince people that we are, in fact, doing the right things. However, although scientific methods are tools for constructing consensus among scientists, the attempt to use science as a technocratic authority can mask but ultimately not resolve conflicts motivated by conflicting interests, rooted in contradictory values, or caught up in political maneuvering.

Second, there is the assumption that we just have to include everybody in a public process in order to improve outcomes. This assumption has been debunked by empirical research in political science, as well as by contemporary experience. The legacy of “maximum feasible participation” since the 1960s has become a significant part of the problem rather than the solution.

In the first half of the 20th century in the U.S., we developed an appealing vision of the suburban landscape of the so-called American Dream. This vision produced a landscape rife with social, economic and environmental problems, and not sustainable in any respect. Institutionalized resistance to change is rooted in a development regime that operates at the intersection between markets for land and capital, public bureaucracy and its regulatory apparatus, and democratic politics. Three key problems have been built into this regime: specialization of technical expertise and the professional division of labor; narrowly

conceived environmental regulation that inadvertently incentivizes unsustainable outcomes; finally, a public process that operates with a simplistic notion of democratic participation. In the name of procedural fairness and democracy, we've created an unreliable process that undermines civic capacity and produces a reactionary politics that is a major obstacle to creative solutions, much less transformative change.

Both of the assumptions described above (taken separately or together) reflect a deep misunderstanding of the challenge of sustainability. The concept of sustainability commonly encompasses everything from the technical issues related to energy and resource efficiency to the more complex issues of economic viability, social equity and democratic governance. If we look at sustainability programs, however, we see that cities tend to focus on an array of isolated technical improvements—e.g., hybrid buses, solar-powered office buildings, waterless urinals, rain gardens, etc.—with the idea that we can move incrementally toward sustainability simply by accumulating resource efficient practices. It is important, however, that places—human settlements—are things we do together, not simply an accumulation of individual consumption choices. This has been recognized by the UN, as we can see by comparing the broad perspective of the Brundtland Commission report, *Our Common Future* (1987) with the report from UN Habitat III, *Towards a New Urban Agenda* (2016). A sustainable future will depend on a comprehensive approach to the way we build human settlements.

THE PARADOX OF TECHNOLOGICAL SOLUTIONS IN A DEMOCRATIC SOCIETY

There is always a temptation to look to technological solutions, in the hopes that we can draw on science and technology to avoid the thorny social and political questions. Such solutions unavoidably fail to attend to the conditions necessary to maintain human engagement in meaningful places. Engineered solutions are not able to learn and adapt over time, as part and parcel of changes in human society and culture.

A central paradox of relying on a system of experts is that even the best technical knowledge, applied by specialists within a division of labor, often produces well-supported decisions that add up to disaster. If we look at some of the most unfortunate aspects of the suburban built environment, what we see is the work of experts making good decisions in the context of their specific expertise, but those seemingly good technical decisions add up to incoherent and problematic outcomes. The practical reduction of problems by specialization and the division of labor tends to render the true complexity of a sustainable community invisible, and generally fails to address fundamental social and political questions, particularly questions of governance.

The core challenge in building sustainable communities, therefore, have to do with transcending both the “silo” effect among specialists and the divide between technical expertise and democratic governance. It is essentially a problem of civic engagement, of creating the practical capacity to confront the practical challenges of managing change, risk and environmental uncertainty. In this regard, there are four key points:

1. What we need is not more but higher quality participation, in the form of effective engagement that builds trust and community capacity.
2. To be truly inclusive, it is not enough just to make sure there is diversity represented in the room. It matters what people are empowered to do once you have them in the room.

3. There needs to be active collaboration in defining the terms around which consensus can be constructed.
4. Consensus building needs to move effectively from agreement at the level of vision and principle to practical action.

THE CHARRETTE PROCESS

There are a variety of ways to approach this, but my focus has been on “collaboration by design,” a process I’ve been exploring with the National Charrette Institute. The NCI charrette is a process of co-design that embeds people and experts in a process that moves from the formulation of a common vision to concrete proposals for action.

The design-centered process of a *charrette* is organized to address three key challenges: transcending specialized expertise, building trust against the background of a history of earned mistrust, and overcoming the fear of change by building a sense of collective efficacy. An inclusive, integrative and collaborative process that involves both citizens and relevant experts (no longer operating as specialists) in articulating goals, defining problems and designing solutions, enables a common narrative that renders the key decisions and trade-offs as transparent choices between clearly articulated alternatives—informed by both expertise and concrete local knowledge. It takes place within a compressed time frame, with short feedback loops that enhance clarity, a sense of shared purpose and overall quality of engagement. It moves from the big picture to the details in an iterative process that allows for transdisciplinary understanding as well as an organic integration of citizen perspectives. Finally, it leads to feasible, action-oriented outcomes.

There is no easy solution to the problems outlined here, and the *charrette* is certainly not a silver bullet. However, it highlights important practices of engagement that are relevant whether or not the problem at hand is a matter of physical design, policy development or strategic planning.

CONCLUSION

In the context of building sustainable communities, charrette practice has to be embedded in a broader strategic perspective. The following are three key principles for action oriented to building sustainable cities:

- Small scale, incremental projects that are immediately responsive and adaptive in the longer run.
- Part of a process of shared learning by doing, integrating vision and action.
- Mobilizing community-based resources in a way that accomplishes goals and builds community capacity (social capital).

Ultimately, it is not just about building the right kind of places but establishing the right kind of place-making practices. I refer to this as “civic urbanism.” The project of a civic urbanism implies building healthy social relationships not by engineering places but by engaged placemaking. In this respect, planning and design become opportunities for civic innovation.

CREATING DISABILITY FRIENDLY DISASTER PLANS: INSIGHTS FROM COLLABORATIVE RESEARCH IN DUNEDIN, FLORIDA

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Keywords: disability; inclusion; inequality; emergency preparedness; stigma; evacuation plans

THIS IS AN EXAMPLE HEADING: GENERAL GUIDANCE FOR YOUR SUMMARY

Disaster research is an interdisciplinary field that investigates not only geophysical processes but ways in which inequalities based on class, gender, race, ethnicity, and age affect vulnerability, response, and resilience. Less is known about how disability-based inequality may relate to disaster preparedness.

METHODS

This presentation utilized findings of an online survey conducted in collaboration with the Committee on Aging and city government in Dunedin, Florida to explore relationships between disability identity and levels of concern about emergency preparedness, perceived likelihood of evacuation during storms of various strengths, and likelihood of evacuating to particular types of locations.

FINDINGS

Findings suggest that participants who identify as disabled experience social and structural disadvantages in a number of areas that may increase vulnerability and reduce resilience. Participants with disabilities reported lower levels of social inclusion and participation in social and recreational activities, had fewer economic resources, and perceived higher levels of disability-stigma than did participants who did not identify as disabled. In terms of emergency preparedness, participants who identified as disabled reported significantly higher levels of concern about being prepared for emergencies, and were also significantly more likely than others to say that they would evacuate during the least intense storms (Tropical Storms and Category 1 Hurricanes). They also differed from others in terms of the types of locations they would likely choose if told to evacuate. Specifically, they were less likely than non-disabled participants to say they would evacuate to the home of family or friends in the area and to a shelter that does not allow pets. They were more likely than others to say they would choose a pet friendly shelter and an integrated shelter that provides services to people with disabilities but is not limited to them. Disability identification and perceived stigmatization of people with disabilities had independent positive associations with likelihood of evacuating to a shelter that is limited to people with disabilities and their companions.

CONCLUSIONS

These findings highlight the need to consider not just the medical needs of individuals with disabilities, but ways in which disability-based social and cultural inequalities and

stigmatization may affect disaster response. Enhancing disability inclusion and reducing barriers to social participation should be considered achievable community goals that can enhance individual and community resilience.

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Whitney Gray (Whitney.Gray@dep.state.fl.us) has been the Administrator of the Florida Resilient Coastlines Program in the Florida Coastal Office of DEP since December of 2017. Her bachelor's and master's degrees are from the University of Florida (Go Gators!) where she studied zoology and systems ecology. She first worked on climate change vulnerability assessment and adaptation planning with the Southwest Florida Regional Planning Council. From 2012 to 2015, Whitney served as Sea Level Rise Coordinator for both FWC and Florida Sea Grant, specializing in the effects of sea level rise on coastal ecosystems. She coordinated an internal climate change seminar series, "Florida Adapts," and served as a subject matter expert on Species Action Plans during the Imperiled Species Management Planning process. Originally from Florida's Gulf coast, Whitney has

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residential yardscapes, and food deserts. She is currently working issues related to the representation of animals in educational exhibits; environmental education programs in India; the historical construction of the environmental citizen through the activities of the Sierra Club; and issues of inclusion and exclusion of vulnerable communities in climate resilience efforts. She serves as the Director of Education and Outreach for iCAR. She directs the annual community outreach and education series for iCAR. More information can be found at <http://www.usfsp.edu/icar/community-outreach-and-education/>. Dr. Johns' website is www.rebeccajohns.net



Ife Kilimanjaro, PhD

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Throughout her career she has focused on systems-based approaches by balancing environmental, economic, social, political, legal, and other concerns in order to develop and implement strategic solutions. During this time Ann has worked collaboratively with multiple levels of government, utilities, the private sector, advocacy groups, Federal Laboratories, the Department of Energy, and state energy offices among others. She is the author, co-author, editor, and peer reviewer of numerous papers and reports. Her work at the City of Fort Lauderdale, the Southwest Energy Efficiency Project, Boulder County (CO), Environment Colorado, the Wirth Chair, the American Institute of Architects, the Colorado Green Building Guild, and the private sector provides her with a unique perspective on issues related to green building, the built environment, and sustainability. Through the American Cities Climate Challenge funded by Bloomberg Philanthropies, she is now working with the City of St. Petersburg to achieve greenhouse gas emissions reductions through projects related to energy efficiency, renewable energy, energy finance, and transportation.



Commissioner Janet C. Long (janetclong@pinellascounty.org) has served on Seminole City Council for two terms in the Florida House of Representatives for two terms and was elected Countywide to a seat on the Pinellas County Commission in 2012 and again in 2016. She currently serves as the Chair of the Tampa Bay Regional Planning Council whose primary initiative this year was to develop a Regional Resiliency Plan and agreement among the Tampa Bay region's counties and city governments. This Tampa Bay Regional Resiliency Coalition was signed by 25 member governments on October 8th, 2018, with a mission to reduce the risk of sea

level rise and climate change to ensure a strong and vibrant economy for generations to come and to move forward with the goal of an annual summit. Janet has been married to her husband, Richard, a retired officer with the Seminole Fire Department, for 40 years and has three children and five grandchildren.



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Professor Meyer's work has appeared in a wide variety of professional journals and books, including the Journal of Consumer Research, the Journal of Marketing Research, the Journal of Risk and Uncertainty, Marketing Science, Management Science, and Risk Analysis. He is currently Senior Editor for journals of the American Marketing

Association. He also served as an associate editor for the Journal of Consumer Research, the Journal of Marketing, and Marketing Science. Professor Meyer's recent research has focused on a range of topics in decision making and communication in the domains of natural hazards preparedness including how sensationalist news stories develop and spread on social media platforms, and how warnings messages are perceived by residents faced with natural disaster threats. For example, Professor Meyer and his colleagues have been able to show that failures of preparation that often precede catastrophes such as Hurricane Katrina, Sandy, and

the 2008/09 housing and equities collapse are consistent with a number of hard-wired biases in how people respond to risk. This includes a tendency for people to fail to learn as much as they should from near-misses, and under-invest in instruments whose value can only be realized in the long run. These ideas form the basis of his recent book, co-authored with Howard Kunreuther, *the Ostrich Paradox: Why we under-prepare for Disasters*. Professor Meyer joined the marketing faculty in 1990 after spending eight years on the faculty of the Anderson Graduate School of Management at UCLA, and two years at the Graduate School of Industrial Administration at Carnegie-Mellon University. He also held appointments as visiting professor in the school of Business Administration at the University of Miami, the University of Sydney, and the University of Tokyo. He received his Ph. D. in Geography from the University of Iowa in 1979.



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Anne Pollack (apollack@fletcherfischer.com) is a partner at Fletcher & Fischer, P.L. where she practices land use and real estate law and represents private and governmental clients in connection with the sale, acquisition and development of commercial and residential real estate projects of all types and sizes across the state of Florida. Anne has recently expanded her practice to better serve the total needs of her Florida clients: consulting on regulatory compliance and other matters of sustainability, resiliency, and corporate social responsibility. Outside of her legal practice, Anne is a fixture in multiple industry and community organizations. She is an active member of The Florida Bar. She also serves on the board of CREW Tampa Bay, and acted as President in 2017. She is the 2019 Chair of the Sustainability Committee of the St. Petersburg Chamber of Commerce and is a Board Member of Tampa Bay Real Estate Investment Council (REIC). Additionally, she is a Board Member of non-profit Creative Clay.



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Cara Woods Serra, AICP, CFM (cara@tbrpc.org) is a Comprehensive Resiliency Planner with the Tampa Bay Regional Planning Council. Her current role at the TBRPC involves disaster preparedness, hazard mitigation planning, and resiliency policy. She has a land use planning background and previously worked on special area plans, long range plans, development review and floodplain management at the local government level. Cara coordinates quarterly meetings of hazard mitigation professionals throughout the Tampa Bay region in an effort to facilitate knowledge sharing and regional consistency. Cara has a B.A. in Interdisciplinary Social Sciences from the University of South Florida and a Master of City and Regional Planning from the Georgia Institute of Technology.



Benjamin Smet (bas1@mail.usf.edu) served in the U. S. Navy from 2001 until 2009. After his time in the military Benjamin discovered his calling working with youth in predominantly low-income areas teaching at local public schools. He has helped to set up dozens of after school enrichment programs including Hispanic outreach centers, STEM clubs and soccer camps and has presented numerous times on the topic. Benjamin earned his Master of Education in Educational Leadership in 2014 with a focus on social justice and policy formation. He is currently pursuing a

Doctor of Education with a concentration in innovations in program development from the University of South Florida focusing on the development of holistic military to veteran wrap-around transition services.



Joseph M. Smoak Ph.D (smoak@mail.usf.edu) is a professor of biogeochemistry at the University of South Florida in St. Petersburg. He has over 80 publications in peer-reviewed journals and book chapters, and has received research funding from numerous regional, state and federal agencies including the National Science Foundation. Dr. Smoak has conducted research at sites ranging from Florida to locations around the world including Antarctica, Australia, Brazil, China, Iran, Mexico and Venezuela. He has examined lakes, freshwater wetlands, coastal ecosystems, continental margins and deep-sea sediments. Dr. Smoak's current research focuses is on how coastal wetlands respond to climate change and sea-level rise. Specifically, his work examines carbon burial (i.e., sequestration) in coastal wetlands, and how that burial might change and influence the global climate.

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Jamie M. Sommer Ph.D.

(jamie.marie.sommer@gmail.com) (Ph.D., 2018, State University of New York at Stony Brook) is an Assistant Professor in the Department of Sociology at the University of South Florida. Her research, which had been published in journals including *Sociological Inquiry*, *Environmental Sociology*, *International Sociology*, *Rural Sociology*, *Journal of World-Systems Research*, *Sociology of Development*, and the *Journal of Development Studies* among others, uses mixed-methods to examine how institutional factors impact global inequality in environment and development outcomes. Currently, Jamie is interested in what rights states afford citizens in terms of their rights to natural resources and access to environmental information, participation, and decision-

making. In doing so, she asks why, where, and what are the consequences of environmental citizenship. She is particularly excited about her work with the United Nations Framework Convention on Climate Change (UNFCCC) Gender Division in evaluating climate change mitigation and adaptation projects at the local level in developing countries.



Barbara Stalbird (Barbara.Stalbird@stpete.org) is the Natural & Cultural Areas Manager for the City of St. Petersburg and is responsible for the oversight of nature preserves, wilderness areas, culturally significant sites, horticulture operations, forestry, and equipment coordination. She is a certified arborist and is certified in natural areas management as well as archaeological monitoring. She has a B.S. in Environmental Science and a Graduate Certificate in Environmental Management and Policy. Barbara has over 20 years of experience in environmental education and is past President of the League of Environmental Educators in Florida (LEEF).



Kathrin Winkler (kw@cwpartners.net) is an Editor at Large for GreenBiz, writing to share her perspectives from beyond the corporate walls, and co-founder of a group of veteran sustainability professionals providing mentoring and guidance to upcoming leaders and NGOs. She serves on the boards of the American Council for an Energy Efficient Economy (ACEEE), a non-profit advancing energy efficiency policies, programs, technologies, investments, and behaviors; Net Impact, inspiring and equipping emerging leaders to build a more just and sustainable world; and the Green Electronics Council (GEC), working with purchasers to stimulate the market for sustainable IT products and services. Formerly Chief Sustainability Officer at EMC Corporation (now Dell EMC, a division of Dell

Technologies), Kathrin is devoting her efforts to guiding the next generation of sustainability leaders and engaging companies more deeply in driving toward a sustainable economy. While at EMC, she served on the boards of The Green Grid, and the Electronic Industry Citizenship Coalition (now Responsible Business Alliance). Previously, Kathrin held a number of business executive and technology roles at EMC and at other technology firms including Digital Equipment Corporation. Kathrin, who attended Brown University, now resides in Seattle with her husband Angus and is learning (slowly, and to the dismay of her neighbors) to play the flute.



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