

February 23, 2023

MEMO TO: Traci Fujita, Director of Office of Council Services

F R O M: Ellen McKinley, Legislative Analyst

SUBJECT: **WEBINAR: “BEYOND HAZARD AND VULNERABILITY PLANNING: WEIGHING THE COSTS, BENEFITS AND CHALLENGES OF CLIMATE ADAPTATION”** (PAF 23-021(5))

I attended the webinar “Beyond Hazard and Vulnerability Planning: Weighing the Costs, Benefits and Challenges of Climate Adaptation” on February 15, 2023. It was presented by Pacific International Center for High Technology Research (PICHTR). <https://www.pichtr.org/>

The webinar’s purpose was to present proactive climate change adaptation as an opportunity for a more resilient and economically strong Hawaii. Here is a link to the recording: <https://www.pichtr.org/climate/capacity-building/beyond-hazard-and-vulnerability-planning/>

The moderator was Melissa May of SSFM International <https://www.ssfm.com/> She said that while Hawaii is doing assessments and has a good understanding of its vulnerabilities, it is grappling with decisions about what to do now about planning for development and infrastructure. Consider:

- Climate resilience
- Policymaking
- Community-based economic development
- Agency coordination
- Initiatives at the state level
- Tools at the national level for climate change adaptation

Sarah Chang, Office of Planning and Sustainable Development (OSPD), Hawaii Coastal Zone Management Program, spoke about four themes:

- Governance – Bifurcated jurisdiction (state and county) causes challenges. Her office formed an interagency collaboration with the US Army Corps of Engineers (“Hawaii Silver Jackets Core Team”) <https://www.iwr.usace.army.mil/Silver-Jackets/State-Teams/Hawaii/> to address flooding and coastal hazards and holistically implement the 2020

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Hawaii Ocean Resources Management Plan, a statewide plan required by HRS §205A-62(1). <https://planning.hawaii.gov/czm/ormp/>

- Natural Environment – addressing on a parcel-by-parcel basis is not always optimal. Regional shoreline management plan is being explored. Mid to long-term planning.
- Built Environment – Mapped three main phases. Standardized approach will provide actionable guidance and encourage alignment of efforts statewide.
<https://files.hawaii.gov/dbedt/op/czm/resource/Act%20178%202021%20Annual%20Report%20and%20Transmittal.pdf>
- People – which coastal communities are at a disproportionate risk to long-term sea level rise and coastal erosion hazards? What do communities need?

Dr. David Revell, Integral Consulting <https://www.integral-corp.com/> discussed adaptation for infrastructure and the options:

- Do nothing
- Accommodate (elevate, setback)
- Hybrid: do lots of things over time
- Protect: coastal armoring, dune construction
- Managed Retreat: get out of the way gracefully

To decide on a strategy, consider:

- Project vs. policy approaches
- Secondary impacts
- Construction costs and maintenance costs
- Protection holds the line and causes loss of beach
- Recreation
- Views and aesthetics
- Displacement of under-represented communities
- Loss of tourism-related revenue
- Ecology – turtles, monk seals

Adaptation Challenges:

- Lack of community vision
- Consider public and private interests

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- Adaptation is local but solutions need a regional perspective
- Limited \$\$\$
- Uncertainty – where and when impacts will emerge
- Determination of when to change from one strategy to the next

What needs to be considered?

- Developed, private and public infrastructure
- Recreation – beach, intertidal and subtidal
- Ecosystem services
- Economics

Triggers used to monitor when to implement next phase:

- Sea level rise (rate or elevation)
- Time
- Exposure
- Distance
- Damages
- Cost
- Number of incidences

Planning vs. reaction

- Recreation-focused actions showed highest benefit and probability of success.
- Managed retreat and protection better if started before 9 inches of SLR.
- Community reaction is to repair and not adapt.
- Invest now or pay more later?

Currently:

- Unmanaged retreat
- State policy is to protect beaches (no new sea walls, no emergency sand bags).
- No plan for acquisition.
- No options for homeowners.

Managed retreat:

- Set expectations.
- Repetitive loss programs
- Buyouts
- Land use decisions

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- Transfers of development
- Hybrid approaches
- Educate contractors and buyers
- Impacts are uncertain.
- Need phased approach at regional level (can't nourish one parcel).
- Direction depends on strong community vision (5, 10, 50 years) and needs to be done now.
- Need equitable funding methods.
- Value nature – beaches, surf breaks, turtles and monk seals.
- Study nature
- Identify triggers.

Next, Jake Helman (for Dr. Paul S. Chinowsky) of Resilient Analytics spoke about his firm's ability to develop infrastructure models to identify and quantify climate-based risks.

They use four levels of analysis:

- Awareness: What are the climate conditions projected for this area?
- Vulnerability: Where are the assets in relation to projected impacts?
- Operational: Financial exposure/economic risk analysis: What are reactive costs? Where does the money come from?
- Strategic: What actions should be taken in the near and long term to mitigate climate change impacts? Identify opportunities to save based on timing.

Dave Anning, PhD, Integral Consulting, talked about quantifying things that are difficult to place a dollar value on, e.g., economic valuation of beaches. Placing economic values on natural resources and their use assists with selecting the best adaptation options.

- Economic values are needed for governments to demonstrate to the public that they are using funds wisely
- Applications for funding assistance require demonstrating that a project is cost-effective
- Cost benefit analysis is the dominant decision support tool in many systems
- Unpriced is not the same as priceless.

Some of the methods for valuation he explained were:

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- Total economic value of a natural resource
- Hedonic pricing method
- Travel cost method
- Stated preference method

The concepts in this seminar could be useful to the ADEPT committee which I am training to backup. Please let me know if you would like any more information from me.

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cc: Office of Council Services Deputy Director David Raatz
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