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BALLOT FOR STATE ACTIONS

Future Built Environment & Infrastructure Technical Working Group

Instructions:

- Please place an “X” in Column 1 next to each adaptation option that should be prioritized from your perspective. The total number of cells having an “X” should equal 10.
- As desired, you can also include additional brief text in the “Notes” column next to your votes to address options with significant overlap and that you feel should be combined (e.g. “combine this option with 2.2”). This additional information helps CCS interpret your voting, so that we can make an appropriate consolidation of the votes for review. Please keep comments in this column brief.
- **PLEASE COMPLETE THIS BY MONDAY Nov. 26th 5 PM.** So I can get you totals before our TWG call.
- When completed, please return to Kirstin Dow (kdow@sc.edu). If you have questions, contact Kirstin at 803 777 2482 (office) or 803 361 4754 (mobile)

Notes:

- Please insert no more than one “X” next to any priority adaptation option in Column 1.
- Initial rankings of adaptation options are based on the judgment of the facilitator and review in the Nov. 15th conference call, as referenced to the following:
 - *Flexibility criterion:* refers to the way that the option either limits, enhances, or is neutral toward the reduction of climate change risks as they continue to unfold; reflects the degree to which the option could accommodate corrective measures, as needed, to address conditions

that turn out to be worse than current trends imply; encompasses social and legal acceptability of adaptation options; seeks to account for changes in cultural values and public attitudes which can be hard to change.

- *Capital intensity criterion*: refers to the implementation costs of the option relative to its benefits
- *Adaptive capacity*: refers to the degree to which the options aids in the ability of institutions, systems, and individuals to adjust to future climate change damages, to take advantage of new opportunities, or to cope with the consequences of unmitigated climate risks; refers to the degree to which risks are reduced by the option.

Future Built Environment & Infrastructure Adaptation Options

Full Adaptation Option Catalog

Indicate 10
priority
options
with an "X"
in this
column

Future Built Environment & Infrastructure Adaptation Options

Mark Ballot Choice	Option No.	Adaptation Policy Option	Flexi bility	Capital intensity	Potential Risk Reduction (TENTATIV E)	Adaptive capacity	Notes
	1	(Managed) Retreat (understood as taking out what is currently in place)					
	1.1	Implement new design standards, building and zoning codes to reflect the need for retreat from areas exposed to sea level rise and associated hazards	H	M	H	M	
	1.2	Site industrial systems away from areas vulnerable to changes in sea level rise and associated hazards					
	1.3	Relocate of threatened structures	M	H	H	M	
	1.4	Implement a strategy for managing the retreat of (Small and large) ports and associated infrastructure, such as rail and roads	H	H	M	M	
	1.5	Modify engineering strategies and standards to manage the retreat of ports and other facilities, such as power plants, that need to be near the water	H	L	M	M	
	1.6	Implement strategy to protect unused properties in areas vulnerable to sea level rise and associated hazards, potentially including purchase programs or easements	M	H	M	M	
	1.7	Implement retreat strategies for the management of existing structures or conditions that may become submerged hazards to navigation or public health (e.g. effluent outfalls, water intakes, septic fields, rockwalls, docks, and piers)	H	M	M	M	
	1.8	Implement strategies to address situations of changing	M	H	L	M	

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		ingress/egress to structures as support for access roads in areas vulnerable to sea level rise and associated hazards is withdrawn					
	1.9	Develop and use insurance policies to drive and support retreat activities	H	L-M	H	H	
	1.10	Implement a strategy to assure long-term public access to water	H	M	L	L	
	2	Avoid (placing people and property at risk)					
	2.1	Integrate critical area planning and zoning requirements with comprehensive planning laws, including emergency planning and infrastructure planning requirements to avoid SLR and associated coastal hazards	H	L	H	M	
	2.2	Require that counties act on comprehensive planning requirements	H	L	M	H	
	2.3	Guide future development out of areas vulnerable to sea level rise and associated hazards	H	L	H	H	
	2.4	End permitting of new homes in areas vulnerable to sea level rise and associated hazards	H	L	M	L	
	2.5	Minimize of paved surfaces and use of trees to reduce flooding	H	L	L	L	
	2.6	Strengthen existing critical area planning and implement requirements to address SLR and associated coastal hazards	H	L	H	H	
	2.7	Implement a strategy to regularly update floodplain maps	H	L	H	H	
	2.8	Incorporate findings of the MD Commission on Climate Change into existing government programs	H	M	H	H	
	3	Accommodate					
	3.1	Establish a mechanism to evaluate and recommend new design standards for structures that may be vulnerable to SLR and associated hazards	H	L	H	H	
	3.2	Design industrial systems to reduce vulnerability to future sea level rise and associated hazards	H	L	H	M	
	3.3	Institute new hazard-resistant building codes and design standards to reduce vulnerability of structures to future	H	L	H	H	

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		sea level rise and associated hazards					
	3.4	Implement standards to assure the survivability of buildings exposed to periodic inundation	H	L	M	M	
	3.5	Storm-surge early warning system and adequate response, evacuation plan	H	M	M	L	
	3.6	Raise shoreline structures	M	M	M	L	
	3.7	Create standards for floating piers	H	L	L	L	
	3.8	Create a climate change and insurance commission to evaluate the insurance ramifications of climate change risks	H	L	L	H	
	3.9	Develop a statewide insurance pool	H	M-H	M	L	
	3.10	Ban any insurance of "critical risk" areas	H	L	M	L	
	3.11	Raise insurance rates in "vulnerable/at risk" areas	H	L	M	L	
	3.12	Create supplementary requirements to the NFIP Community Rating System	M	L	M	M	
	3.13	Modify of land use, agricultural , and landscape practices including aquaculture, saline-resistant crops, depending on location and purpose	M	L	M	M	
	3.14	Implement a plan for sharing of sand between communities	H	L	M	L	
	3.15	Redefine or create state level definition of coastal barrier system under the Federal CBRS limits	M	L	M	M	
	4	Research and Data needs					
	4.1	Investigate opportunities and innovations with potential to benefit the economy, public services, and business sectors	H	L	L	H	
	4.2	Create inventory of infrastructure vulnerable to future SLR and associated hazards	H	M	M-H	M	
	4.3	Create on-line mapping capability for multiple audiences, including local governments	H	L	L	H	
	4.4	Create visualization tool for SLR and associated hazards	H	L	L	M	
	4.5	Assure adequate surveillance and monitoring of sea-level rise	H	M	M	M	
	4.6	Investigate potential and limitations of eminent domain,	H	L	L	M	

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		vesting, grandfathering, and amortizing strategies to support retreat activities					
	4.7	Assess financial impact of property value changes	H	L	L-M	M	
	4.8	Conduct a detailed analysis and inventories of the pros and cons of application of hard structural options (such as dikes, levees, floodwalls, and saltwater intrusion barriers) and soft structural options such as dune restoration and creation Wetland restoration, creation, periodic beach nourishment, temporary barriers and other options	H	L	L	M	
	4.9	Evaluate the potential risks and opportunities to a ferry system (incl. public transportation and emergency planning)	H	L	L	L	
	4.10	Research to update guidance on landscaping, including a climate zone map	H	L	L	M	
	4.11	Investigate the availability and distribution of sand resources for beach renourishment	H	M	M	M	
	4.12	Investigate the potential need for replacing/backfilling resources lost due to SLR (e.g., wells lost to ground water intrusion)	H	L	L	M	
5 Capacity Building and Training							
Coordination							
	5.1	Establish a coordinating mechanism to assure that local governments act in concert with the state to reduce future impacts from SLR and associated hazards	H	L	M	H	
	5.2	Synchronize future design with emergency planning infrastructure requirements	H	L	M	M	
	5.3	Increase coordination among existing planning and development entities	H	L	M	H	
	5.4	Identify existing state and local programs that could be modified and /or strengthened to accommodate for climate change, SLR, and the MCCC recommendations and requirements.	H	L	H	H	
	5.5	Increase consistency in definition of what is considered a "critical" area to include all areas and resources	H	L	H	H	

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		threatened by SLR and associated coastal hazards					
	Education						
	5.6	Establish structured capacity building and training for key adaptation sectors including building trades, infrastructure, finance and insurance, landscapers and others	H	L	M	H	
	5.7	Establish structured training and vocational support for trades and others involved in implementation of new design standards	H	L	M	H	
	5.8	Establish structured capacity building and training for public servants	H	L	M	H	
	5.9	Integrate climate change and adaptation issues into advanced training in university, community college, and technical training programs	H	L	M	M	
	5.10	Provide training for permit and planning agencies staff to address SLR and associated coastal hazards	H	L	M	H	
	5.11	Provide outreach and education to the broader population	H	L	M	M	
	Mapping potential impacts and vulnerability						
	5.12	Identify and map highly vulnerable and valuable areas	H	L	M	H	
	5.13	Map the vulnerable surface and ground water resources	H	L	M	M	
	5.14	Identify and modify state programs relying on shoreline or vulnerable area mapping to assure that they have plans to regularly update maps	H	L	L	H	
	Economic						
	5.15	Implement a state Revolving Loan Plan to finance state and local investments in CC adaptation and mitigation actions	M	M	L	M	
	5.16	Create an economic development plan centered on climate change response and adaptation opportunities	M	M	L	M	
	5.17	Create incentives for the private sector to invest in innovative approaches to adaptation	M	M	L	M	
	5.18	Create a culture of certainty on the economic opportunities in greening	H	L	L	L	
	5.19	Allow state pension plans to invest and fund climate	M	L	L	M	

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		change-friendly, local investments					
	5.20	Encourage private 401Ks to foster socially responsible investment (SRI) options for their members	H	L	L	M	
	5.21	Implement strategies to encourage and incentivize banks to invest in Maryland CC mitigation- related companies	M	L	L	M	
	Insurance						
	5.22	Implement a plan to address the insurance ramifications of climate change risk	M	L	H	H	