

Public and Local Government Priorities on the Development of Local Sea Level Rise Plans

Adam Carpenter¹ and Sharon deMonsabert²

¹George Mason University Fairfax

²AEM Corporation

November 26, 2022

Abstract

Sea Level Rise is a global concern that has varying and potentially serious consequences on the local level. Although national policies and international frameworks can help to reduce the severity of sea level rise by limiting future emissions, in the current policy framework in the United States, local governments hold most of the responsibility for protecting their communities from flooding and the impacts of future sea level rise, with limited assistance from state and federal governments. Recognizing that local governments are largely driven by their community's needs and desires, a survey of 500 persons affiliated with coastal communities across the east coast of the United States was conducted to identify public perceptions on the relative priority of sea level rise planning, components that should be included in local plans, protection priorities, funding mechanisms, methods to resolve conflict, and acceptable adaptation responses. The information from this survey was then provided to representatives from six local governments in a barrier island New Jersey to help identify its appropriateness and usefulness for local planning. In addition to discussing the key findings of the public survey, an overview of the responses from government officials will be presented, with an emphasis on comparing and contrasting the viewpoints of public officials and members of the public to help foster stronger collaborations among all members of a community (residents, businesses, utilities, governments and others) to help address local adaptation in light of this complex issue.

ABSTRACT

To help improve Sea Level Rise planning, a survey of 503 persons affiliated with coastal communities across the east coast of the United States was conducted to identify public perceptions on the relative priority of sea level rise planning, components that should be included in local plans, protection priorities, funding mechanisms, methods to resolve conflict, and acceptable adaptation responses. An additional study interviewed six local governments. Six major findings are derived from these studies, with five identified to be potentially useful to policymakers.

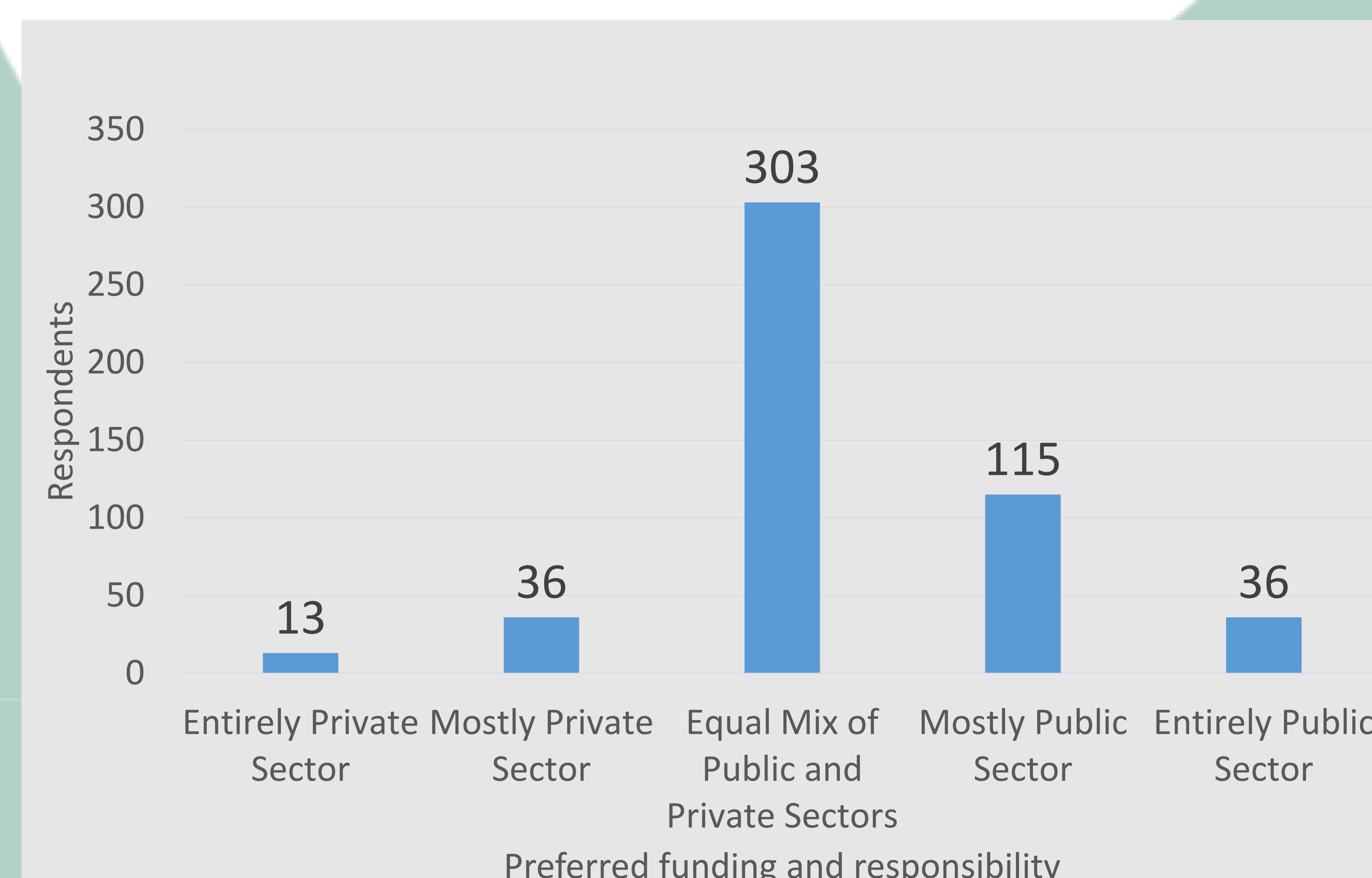


Figure 1: Preferred funding and responsibility for future flooding and sea level rise (example response from public survey)

INTRODUCTION

Sea level rise could cause considerable damage to life, property, and the wellbeing of coastal communities around the world if not addressed. Many communities in the East Coast of the United States will face these challenges with limited resources and limited guidance from state and national governments. Therefore, community-based methods to understand citizen's needs build local support for planning and adaptation.

METHODOLOGY

503 persons affiliated with coastal communities on the East Coast of the United States were surveyed through a series of 26 questions about their views on many aspects of sea level rise planning (Refer to Figure 1 for an example). The findings from this survey were then discussed in-depth with public officials from six jurisdictions on Long Beach Island, NJ to determine their potential usefulness to sea level rise planning to public officials.

RESULTS

Six major findings were derived from the surveys and evaluated in the interviews.

1. Relative Priority: Officials are likely to gain better engagement with the public if they make a strong connection between planning for sea level rise and other high priority issues like the environment, infrastructure/utilities, and the economy.

2. Planning Components: Officials should consider building sea level rise plans that integrate response planning and preparedness with mandatory policies to reduce future damage. Maps & tools, educational resources, and voluntary protections were also popular, but inaction to wait for more research was not popular.

3. Protection Priorities: Officials should consider the protection of essential utility and transportation services as some of the highest priorities for protection in sea level rise plans. Residents also rate the protection of individual home and of government facilities very highly.

4. Funding Priorities: Funding may be one of the largest challenges of sea level rise planning. Officials should consider public meetings to discuss how to pay for priorities, should use state and federal funds when available, and should work with the insurance industry on risk reduction measures. Officials should avoid cutting other programs and should proceed cautiously with taxes.

5. Conflict Resolution: To help prevent and resolve conflict, officials should consider bringing in both preparedness experts and scientists familiar with flooding and sea level rise to talk with the community and use the media to help educate the community about this issue. Avoid making adaptation measures optional to avoid conflict.

6. Adaptation Responses: Public officials should consider a variety of adaptation responses. Early warning systems, natural and artificial barriers, and hardening infrastructure are among the items respondents generally found to be appropriate. Even some potentially controversial adaptations, such as preventing new development in vulnerable areas were generally viewed as appropriate. Officials should avoid cutting off assistance from high risk areas.

DISCUSSION/CONCLUSIONS

- Local officials reported that all six major findings were informative. Overall findings were considered informative and helpful for improving processes (refer to Figure 2.)
- Local official believed that all the major findings except “funding priorities” would help them with future planning.
- While much work needs be done for communities to begin to adapt to SLR, these findings may assist policymakers in improving processes around SLR planning and developing plans and actions to protect their communities.

Jurisdiction	Informative	Improve Processes	Advance Planning
Surf City, NJ	(4) Agree	(4) Agree	(3) Neither Agree nor Disagree
Beach Haven, NJ	(4) Agree	(4) Agree	(4) Agree
Long Beach Township, NJ	(5) Strongly Agree	(4) Agree	(4) Agree
Harvey Cedars, NJ	(4) Agree	(4) Agree	(4) Agree
Barneget Light, NJ	(5) Strongly Agree	(4) Agree	(4) Agree
Ship Bottom, NJ	(5) Strongly Agree	(5) Strongly Agree	(5) Strongly Agree
Mean	4.5	4.17	4
Median	4.5	4	4
Mode	4 & 5 (tied)	4	4

Figure 2: Public official ratings of study findings (Likert Scale 1-5, 1 being strongly disagree, 5 being strongly agree)

ACKNOWLEDGEMENTS

The authors would like to thank Drs. Jonas, Sklarew, Liner, and Schopf for their guidance throughout the project. We would also like to thank Survata, who administered the public survey, and the public officials who agreed to be interviewed. Survey costs were self-funded by the author, travel support for this presentation was provided by George Mason University's Graduate Student Travel Fund.

“Everything, everywhere will need to be elevated here. That just isn't feasible” – Interviewed Official