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Lessons Learned from Collaborative Transportation Planning for Sea Level Rise in California

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Many of California's critical transportation infrastructure assets along the coast are vulnerable to sea level rise (Figure 1). Climate adaptation generally and sea level rise adaption specifically entail land-use and transportation decisions that affect multiple jurisdictional levels. These decisions involve many stakeholders, including local, regional, county, state and federal agencies, non-governmental organizations, and individual citizens. Adapting transportation infrastructure to sea level rise requires collaboration among these actors. This is a challenging task given that different agencies and stakeholders have different mandates and priorities, which imply different ways of looking at the common issue of adaptation to sea level rise.

Researchers at the University of California, Davis examined four case studies of governance processes formed around transportation assets threatened by sea level rise: a state highway along the San Francisco Bay, a coastal highway and railroad in San Diego County, and the Port of Long Beach. The researchers interviewed stakeholders, consulted policy documents, and organized a workshop with agency stakeholders to identify lessons learned and develop practical suggestions for facilitating collaboration to address sea level rise.

Key Research Findings

Early collaboration across a broad range of stakeholders, some of whom may not be used to working together, is important for a successful collaborative process. Case studies demonstrated that identifying and involving all the relevant agencies and stakeholders—those with jurisdiction over or potentially affected by a project—early in the collaborative process before key decisions have been made is crucial to building trust and investment in the process. Successful cases often used a facilitator to manage interactions, established a dedicated forum for collaboration, and set ground rules through a Memorandum of Understanding.

Figure 1. A flooded State Route 37 off-ramp on the northern edge of the San Francisco Bay (photo by Fraser Shilling, UC Davis)

Bridging jurisdictional boundaries across geographic areas and levels of government is necessary to reach successful outcomes, and often requires political leadership. There is no single entity charged with addressing sea level rise. Rather, existing regional and local transportation agencies need to consider it as part of their planning decisions. While bringing multiple agencies into the governance process can provide more expertise and resources, it can also be extremely difficult to reconcile different priorities across multiple agencies. A promising strategy for bridging jurisdictional boundaries in transportation planning for sea level rise is to appoint a project manager to sustain engagement. Another is to structure collaboration between agencies in tiers, from technical to executive, so that decisions are made at the most appropriate levels. Political leadership is also essential to achieving consensus, leveraging funding, and moving projects forward.

Demonstrating adaptation projects' multiple benefits and broad support can often help overcome funding shortages. Leveraging sufficient funding to address sea level rise was the main challenge across all four case studies. Several strategies emerged that can enhance the chances of obtaining funding. First and foremost, the project should demonstrably attain multiple benefits, such as transportation goals as well as environmental protection and habitat preservation (State Route 37 Case Study text box). Multi-benefit projects can attract funding from diverse sources, thus allowing project managers to pool resources effectively. Moreover, funders at state and federal levels often require—and always prefer—applications for infrastructure projects to be supported by consensus across a broad range of actors.

State Route 37 Case Study

State Route 37 is a 21-mile highway through the marshes of the northern San Francisco Bay, crossing four counties. Caltrans owns and manages the highway. Winter storms have flooded State Route 37 multiple times in recent years, and the highway and sensitive habitat around it will become increasingly vulnerable with future sea level rise. The highway also faces increasing traffic congestion.

Caltrans, the Metropolitan Transportation Commission, four county governments, environmental stakeholders, and state and federal permitting agencies are all engaged in the State Route 37 Policy Committee, a collaborative effort that began in 2015. The group has a Memorandum of Understanding establishing technical- and executive-level tiers, and its members are working together to achieve transportation and environmental goals. The group has faced challenges over conflicting priorities and funding. However, leveraging the potential environmental and recreational benefits of addressing sea level rise has been an effective strategy for unlocking new funding sources, including a grant to enhance recreational opportunities and waterfront access.

More Information

This policy brief is drawn from the report "Learning to Collaborate: Lessons Learned from Governance Processes Addressing the Impacts of Sea Level Rise on Transportation Corridors Across California" prepared by Francesca Vantaggiato with King's College London (UK) (previously a postdoctoral researcher at the University of California, Davis) and Mark Lubell with the University of California, Davis. The report can be found here: www.ucits.org/research-project/2019-25.

For more information about findings presented in this brief, please contact Francesca Vantaggiato at francesca.vantaggiato@kcl.ac.uk.

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