

# **Applied Hazard Mitigation Research: A National Survey of State Hazard Mitigation Officers (SHMOs) and a Comparative Study of Buyouts in the United States and New Zealand**

**Presented by:**

**Gavin Smith**, Ph.D., AICP. Professor,  
Department of Landscape Architecture and Environmental Planning.  
North Carolina State University

**Research Team:** Olivia Vilá, Samiksha Bhattarai, Samata Gyawali, Claire Henkel, and Brian Vaughn. North Carolina State University

## Overview

- **Capacity to Implement FEMA HMA Grants: A Survey of SHMOs**
  - Findings, Outputs & Recommendations
- **International Comparative Study of Buyouts in the U.S. and New Zealand**
  - Findings, Outputs & Recommendations
  - Innovative Buyouts Study
- **Future Research & Collaboration**

# Capacity to Implement FEMA HMA Grants: A Survey of SHMOs

## Research Objectives

- Understand state engagement in HMA programs
- Understand assistance provided by the state to local governments
- Understand commitment to hazard mitigation
- Understand perceived local government needs, including low-capacity community needs

perceived local  
challenges



mitigation policies



governor  
involvement



state assistance



## Survey Topics



HMA program  
participation



commitment



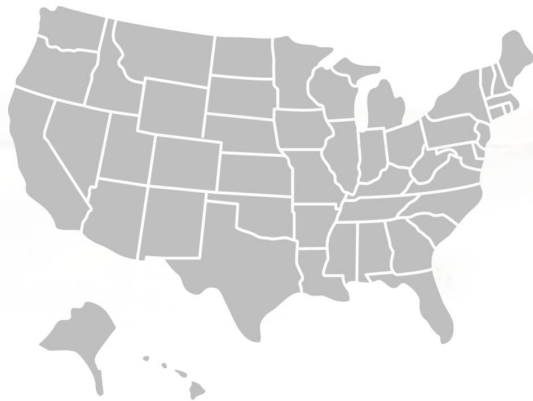
low capacity  
communities



buyouts

# Capacity to Implement FEMA HMA Grants: A Survey of SHMOs

**43 participants,  
77% response rate**



- All regions represented
- Full participation from Regions 1, 6, 7
- Tribal Recruitment
- Territory Participation
- Results likely overestimate capacity

**HMA  
Program  
Participation**

PAS and AA  
underutilized

Poor understanding  
of benefits

**Perceived  
State and  
Territory  
Capacity**

Confidence in  
meeting planning  
and outreach needs

Most assistance  
catered to  
addressing  
administrative  
needs

Limited accessibility  
of best practices

**State  
and Local  
Commitment  
to Hazard  
Mitigation**

Limited Governor  
involvement

SHMOs indicate  
need for greater  
leadership to foster  
commitment

Commitment  
indicated by  
planning and  
training attendance  
vs. mitigation  
actions

**Working  
with Low  
Capacity  
Communities**

Acknowledgement  
of poor, rural areas  
as low capacity

Poor strategies for  
identifying and  
reaching out to  
communities

“Equal” approach to  
outreach strategies  
vs. equitable  
approach

**Attitudes  
on Mitigation  
Funding  
Strategies**

SHMOs generally  
agree that high risk,  
low capacity should  
be prioritized for  
funding

## SHMO Survey: Recommendations

- Create stronger emphasis on capacity building initiatives that focus on technical aspects of grant management, including finance and open space programming and oversight.
- Create consistent funding and support to sustain base level staffing for grants management administration and technical experts.
- Address turnover in state mitigation staff. Research employee retention in state-level positions, particularly SHMOs.
- Establish formal networks and communication channels between jurisdictions and their local universities, engagement specialists, NGOs, regional organizations, and other agency partners.

## SHMO Survey: Recommendations

- Incentivize initiatives that bring together jurisdictions currently implementing innovative and successful programs/practices to mentor those jurisdictions in need of support.
- Establish state and territorial mentorship programs to educate and engage local leaders, advocates, champions, and citizens.
- Develop comprehensive strategies to identify and engage low-capacity communities. Strategies should be based on an in-depth knowledge of and long-term collaboration with communities.



## SHMO Survey: Outputs

*(Articles, Interview Protocol, Report)*

- Smith, Gavin, Olivia Vila. 2020. A National Evaluation of State and Territory Roles in Hazard Mitigation: Building Local Capacity to Implement FEMA Hazard Mitigation Assistance Grants. *Sustainability* 12(10013): 1-18. doi:10.3390/su122310013.
- Smith, G., Vila, O., Caverly, G. 2020. “A National Evaluation of State Roles in Hazard Mitigation: Building Local Capacity to Implement FEMA Hazard Mitigation Assistance Grants.” DesignSafe-CI. <https://doi.org/10.17603/ds2-sjbv-eg87>.
- Vila, Olivia, Gavin Smith and Samata Gyawali. January, 2021. Capacity to Implement FEMA HMA Grants: SHMO Survey Report. Raleigh, North Carolina: North Carolina State University.

# SHMO Survey: Outputs

## *Future Work*

- Peer-reviewed article/Dissertation chapter, Environmental Justice, Leadership, and Low-Capacity Communities, journal TBD (estimated submission Summer 2021)
- Smith, Gavin. The Role of Governors in Hazard Mitigation Grants Management. (under development).
- Natural Hazards Workshop Presentations, Natural Hazards Center Researcher's Meeting, American Association of Geographers, Carolina Climate Resilience Conference, Resilient Nation Partnership Network Next Generation of Resilience" Student Showcase\*, FEMA Making Mitigation Work Webinar, CRC Annual Meeting. Others?

# Comparative study of buyouts in the U.S. and New Zealand: Findings

- Well-funded / micromanaged vs uncertain funding / new and adaptive programs.
- “Voluntary” buyouts in the U.S. & New Zealand.
- Decoupling planning and grants management (national, state and local actions).
- Regeneration plans versus open space as an afterthought.
- Poor lesson-drawing within and across countries.

# Comparative study of buyouts in the U.S. and New Zealand: Recommendations

- Reduce the complexity of buyout programs.
- Provide more direct pre- and post-disaster technical assistance.
- Improve nexus between land use planning and buyouts.
  - Include buyout projects in hazard mitigation plans.
- Improve delivery of technical assistance – Open Space Programming and management.
- Improve lesson-drawing within and across nations.

# Comparative study of buyouts in the U.S. and New Zealand: Outputs

- Saunders, W.S.A, and G. Smith. 2020. Spend to Save: Investigating the Property Acquisition Process for Risk Reduction in Aotearoa New Zealand. Lower Hutt (NZ): GNS Science. 65 p. (GNS Science report; 2020/23). doi:10.21420/6GR9-EE44.
- Smith, Gavin, Wendy Saunders, Olivia Vila, Samata Gyawali, Samiksha Bhattarai, and Eliza Lawdley. 2021. A Comparative Analysis of Hazard-Prone Housing Acquisition Programs in United States and New Zealand Communities. Special Issue on Managed Retreat and Environmental Justice. Journal of Environmental Studies and Sciences. Perspectives on Managed Retreat: Environmental Justice and Beyond. A.R. Siders and Jola Ajibade, Editors. (in press – Journal of Environmental Studies and Sciences).

# Comparative study of buyouts in the U.S. and New Zealand: Outputs

- Smith, Gavin and Wendy Saunders. A Comparative Review of Hazard-Prone Housing Acquisition Laws, Policies and Programs in the United States and Aotearoa New Zealand: Implications for Improved Practice. In the Cambridge Handbook of Disaster Law: Risk, Recovery and Redevelopment. Susan Kuo, John Travis Marshall, and Ryan M. Rowberry eds. (in press – Cambridge, 2021).
- Saunders, Wendy and Gavin Smith. Global Principles Guiding the Acquisition of Hazard-Prone Housing. (under development).

## Ongoing Research – Innovative Buyouts

- Document innovative practices across FEMA-funded buyout programs and explore the contextual factors that facilitated that innovation.
  - Guided by policy innovation theory (policy diffusion and internal determinants models)
  - Waiting for IRB Approval
  - Plan to Begin Interviews in April (candidates identified)
- Identify New Zealand Communities
- National Retreat Strategy / NZ Presentation in Fall

## Proposed Work for FY2022

- **Hazard-Prone Housing Open Space Guide** (Submitted to DHS CRC for review)
  - Focus on Use of Open Space
  - Possible Inclusion of Resending Areas & Replacement Housing
- **International Study of Buyouts and Resettlement**
  - National Academies of Sciences Partnership (Resilient America Committee)
    - Research, Engagement & Teaching Agenda
  - Connectivity to BRIC / FEMA and other Stakeholder Involvement in Study