

SCIPP RESEARCH BRIEF - STAKEHOLDER ANALYSIS IN THE CONTEXT OF NATURAL DISASTER MITIGATION: THE CASE OF FLOODING IN THREE U.S. CITIES

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OVERVIEW

Fayetteville, Arkansas; Tulsa, Oklahoma; and Waco, Texas are all prone to extreme precipitation and flooding. The discussions held after these flooding events shed light on the needs of the community and potential adaptation strategies to be employed in the future. Understanding who is involved in these discussions and the roles and interests influencing their involvement is critical to increasing community involvement.

METHODS AND RESULTS

The study was conducted via analysis of various sources including (but not limited to): newspapers, government websites, and planning documents. The time period observed spans from 1987 to 2022. Two coders identified key information from the text, assigning codes corresponding to stakeholder type, role, and experience.

Through the analysis, five major stakeholder types were identified: Government, Residents and Community, Elected Officials, Subject Matter Experts, and Economic Development, with government employees forming the majority of involved stakeholders. A Chi-square test was then used to determine differences in stakeholder involvement between the cities, allowing for increased insight into which stakeholders are underrepresented in post-flood event discussions.

Impact type was also found to influence stakeholder involvement, with 64% of stakeholders experiencing indirect impacts. Furthermore, most stakeholders involved in the decision making process had a role-based obligation (e.g. emergency services personnel) as opposed to an individual obligation.

QUICK INFO

STUDY LOCATIONS

- Fayetteville, AR
- Tulsa, OK
- Waco, TX

OBJECTIVES

- Determine which stakeholders are involved in flood mitigation discussions
- Examine the interests and roles that increase involvement in these discussions

Table 3. Types of impacts stakeholders experienced by the disaster stage.

Impacts/Disaster Stage	Fayetteville	Tulsa	Waco	All
Direct Impact	34%	38%	35%	36%
Weather Alert	2%	8%	11%	7%
Disaster Response	15%	11%	1%	10%
Lessons Learned	17%	19%	23%	19%
Indirect Impact	66%	62%	65%	64%
Weather Alert	2%	11%	27%	12%
Disaster Response	20%	19%	1%	15%
Lessons Learned	43%	33%	38%	38%
Total	100%	100%	100%	100%

Figure 1: Chart separating impact type by disaster stage. Weather Alert is the pre-disaster stage, Disaster Response includes any actions that occur during the flooding event, and Lessons Learned includes any post-disaster activities that influence future plans (Ter-Mkrtchyan and Franklin, 2023.)

IMPLICATIONS

1. Who is involved?

An understanding of who is being excluded from disaster mitigation and resilience discussions is crucial for the development of successful and equitable planning. Through this study, improved knowledge of the stakeholders involved in flood mitigation discussions was developed. Future efforts focused on increasing the involvement of those not currently involved in disaster mitigation discussions will increase the comprehensiveness and equity of potential solutions.

2. What influences involvement?

Results showed that stakeholders were motivated to participate by the impacts they faced and their role-based obligation. Knowing what influences involvement will allow discussion leaders to better tailor their engagement and recruiting efforts.

3. Applicability for the future

This research provides a model for how to determine who is involved in mitigation discussions and why they have chosen to become involved. Future work should attempt to integrate additional cities and stakeholders. Social media can also provide additional insight into the thoughts and efforts of various stakeholders, including some that may not be mentioned in the current data sources. Compiling such a data set will improve disaster response and mitigation discussions, leading to the development of resilient cities in the face of a changing climate.

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