

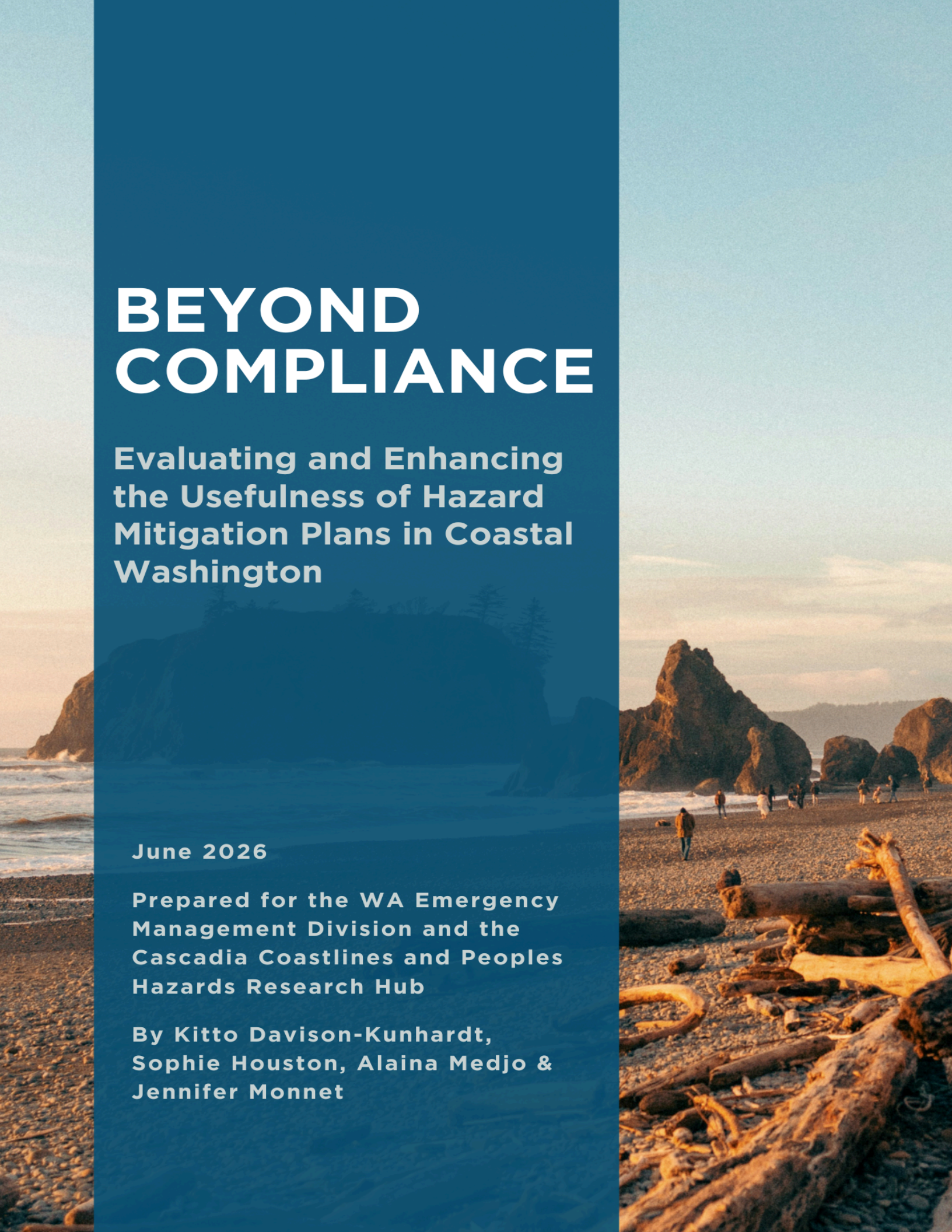
BEYOND COMPLIANCE

Evaluating and Enhancing
the Usefulness of Hazard
Mitigation Plans in Coastal
Washington

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Management Division and the
Cascadia Coastlines and Peoples
Hazards Research Hub

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GLOSSARY OF TERMS

Building Resilient Infrastructure and Communities (BRIC) Program: A competitive FEMA pre-disaster mitigation grant program that funds planning, capacity-building, and infrastructure projects designed to reduce future natural hazard risk.

Capability Assessment: A FEMA-required hazard mitigation plan component. A capability assessment is an evaluation of the authorities, policies, programs, funding and resources a planning jurisdiction has to accomplish hazard mitigation. Building codes, land use and development codes, ordinances and regulations key to reducing risk must be included.

Cohen's Kappa: A statistical metric that measures inter-coder reliability for categorical data following content analysis. Cohen's Kappa is measured on a scale of -1 to 1, where -1 indicates complete disagreement between coders and 1 indicates perfect agreement.

Community Asset: The people, structures, facilities, and lifelines that have value to the community.

Community Asset Approach: A planning approach that focuses on engagement with the community to identify and mobilize existing assets for hazard mitigation planning. An asset-based approach to hazard mitigation uses community participation to identify existing assets which are then used to guide planning for a potential hazard.

Community Lifelines: The most fundamental services in the community that enable all other aspects of society to function. Community Lifelines include: safety and security; food, hydration, and shelter; health and medical; energy; communications; transportation; hazardous materials; and water systems.

Community Resilience: The ability of a community to prepare for and adapt to anticipated hazards and withstand and recover rapidly from disruptions.

Critical Facility: Specific structure or infrastructure essential for protecting public health, safety, and welfare.

Education and Awareness Activities: One of four formally FEMA-recognized mitigation activities. These types of actions keep residents informed about potential natural disasters. Many of these types of actions are eligible for funding through the FEMA HMA program.

Hazard Mitigation Plan: A comprehensive, long-term strategy developed by state, local, and Tribal governments. It identifies natural disaster risks and vulnerabilities, establishes mitigation goals, and outlines specific, actionable steps to break the cycle of disaster damage, protecting human life and property.

Local Planning and Regulation: One of four formally FEMA-recognized mitigation activities. These types of actions include government authorities, policies or codes that influence the way land and buildings are developed and built.

Mitigation Activities: Specific projects and actions that help achieve mitigation goals. They are measures, projects, plans, or activities proposed to reduce the current and future vulnerabilities described in a hazard mitigation plan's risk assessment.

Mitigation Strategy: The long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy describes how a community will accomplish the overall purpose, or mission, of the mitigation planning process.

Natural Systems Protection & Nature-Based Solutions: One of four formally FEMA-recognized mitigation activities. This type of action can include green infrastructure and low impact development, nature-based solutions, engineering with nature, and bioengineering to incorporate natural features or processes into the built environment.

Preparedness and Response: No longer a formally FEMA-recognized mitigation activity for satisfying hazard mitigation plan requirements, but still a core component of hazard mitigation planning. Preparedness and Response actions are actions that increase the ability of a jurisdiction to respond during and immediately after a hazard event.

Risk Assessment: A FEMA-required hazard mitigation plan component. A Risk Assessment is an evaluation and description of the potential for damage or loss created by the interaction of natural hazards with assets, such as buildings, infrastructure or natural and cultural resources.

Social Vulnerability: The susceptibility of social groups to the adverse impacts of natural hazards, including reduced ability to anticipate, cope with, resist, and recover from a disaster. It focuses on characteristics that shape a population's inherent sensitivity to hazard events.

Structure and Infrastructure Activities: One of four formally FEMA-recognized mitigation activities. These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area.

HMP Usefulness: A plan capable of being used in a manner serviceable to reducing disaster loss and breaking the cycle of disaster damage, reconstruction, and repetitive damage.

Vulnerability Assessment: A FEMA-required hazard mitigation plan component. A Vulnerability Assessment is the evaluation and description of the assets—including structures, systems, populations and other assets as defined by the community—located within areas identified to be hazard prone and are at risk from the effects of identified hazards

ABBREVIATIONS & ACRONYMS

ABCD: Asset-Based Community Development

BRIC: Building Resilient Infrastructure and Communities

Cascadia CoPes HUB: Cascadia Coastlines and Peoples Hazards

DMA: Disaster Mitigation Act of 2000

FEMA: Federal Emergency Management Agency

HMP: Hazard Mitigation Plan

SoVI: The Social Vulnerability Index

Stafford Act: Robert T. Stafford Disaster Relief and Emergency Assistance Act

SVI: Social vulnerability index or indices

WA EMD: Washington Emergency Management Division

EXECUTIVE SUMMARY

Overview

As climate change and rising sea levels intensify natural hazards like flooding and coastal erosion, Washington's coastal communities must prepare and adapt. To qualify for federal pre-disaster funding from FEMA, each Washington coastal county must prepare a Hazard Mitigation Plan (HMP), which offers a roadmap of strategies that the county plans to take to reduce damage, loss of life, and economic disruptions from many possible hazards. These plans must be updated every 5 years to ensure that communities actively adapt to evolving disaster vulnerabilities and maintain eligibility for FEMA hazard mitigation grant funding. Yet while County HMPs are vital for reducing disaster losses and securing FEMA funding, many jurisdictions lack the capacity and resources to treat them as more than compliance documents.

Commissioned by the WA Emergency Management Division (WA EMD) and the Cascadia Coastlines and Peoples Hazards Research Hub, this report examines how counties can transform their HMPs into useful, actionable blueprints for community resilience, while reducing the administrative burden on county planners. In addition to the report, the project had one main deliverable to the WA EMD: a "cookbook" of practices, processes and resources to help reduce the administrative burden of hazard mitigation planning for coastal county planners.

Research Methods

To guide our research, the team addressed a central question:

What guidance is needed to increase the usefulness of hazard mitigation plans (HMPs) and alleviate the administrative burden on planners for Washington's coastal counties?

We divided the question into three sub-parts: defining "usefulness" in the context of hazard mitigation planning; exploring the current barriers faced by county planners; and mapping the gap between existing resources and local needs. To inform our research, our team applied a mixed-method approach. First we reviewed the literature around hazard mitigation governance and planning, definitions of plan "usefulness," and community-centered planning lenses. This review informed our working definition of "usefulness" – "a plan capable of being used in a manner serviceable to reducing disaster loss and breaking the cycle of disaster damage, reconstruction, and repetitive damage" – and identified seven components of usefulness. We then conducted a content analysis of Washington's 15 coastal county HMPs against 132 binary

codes, categorized into six themes based on the seven components, to identify which components of usefulness were omitted or applied across county HMPs, and how often. In parallel, we used snowball sampling to identify coastal county hazard mitigation planners, then conducted semi-structured, 45-minute interviews with planners from 10 coastal counties. These interviews captured the planners' insights into HMP planning and implementation processes, as well as barriers faced by planners and gaps in planning resources. Finally, we concluded each interview with a one-question, post-interview survey to verify the real-world application of our identified components of HMP usefulness.

Key Findings

- Our research found that while every coastal county hazard mitigation plan met FEMA requirements, they often lacked local actionability. Plans varied widely in depth and were frequently treated as static reference documents rather than operational guides.
- Our findings confirmed that partnerships are central to HMPs, but were unevenly documented across the studied counties. Planners often relied on state staff, consultants, subject matter experts, local departments, and jurisdictions to gather information and promote projects. However, there was a disconnect between how hazard mitigation planning worked in practice and how that work appeared in the final document.
- A similar gap appeared between public involvement and community assets. Our research showed that a “community-asset approach” was not utilized in the HMPs of coastal counties in Washington State. Moreover, while public engagement was often documented in HMPs, it was not always clear how public engagement shaped mitigation action priorities and vulnerability assessments. Discussions with planners revealed that the Community Asset Approach showed up more strongly in county level Comprehensive Emergency Management Plans (CEMP's), implying the need to more closely integrate Hazard Mitigation Planning processes with other county-level plans.
- The burden on planners themselves was a key barrier to creating useful HMPs. Implementation of actions, community engagement, and risk assessments often depended on institutional capacity, coordination and monitoring/updating plans. These constraints showed up for planners in a variety of ways, including staff turnover, institutional knowledge loss, limited time, changing requirements, data challenges, dependence on consultants, and difficulty navigating the state/FEMA review process.

The barriers identified help explain why plans may lack implementation details, a clear connection of risks to actions, and effective public engagement.

Recommendations for WA Emergency Management Division

To alleviate the administrative burden on coastal counties, WA EMD should develop a centralized resource hub. This includes offering structural planning tools such as templates, best practices and workshops, to providing directories for technical support around GIS and grant writing. In addition, WA EMD should leverage its position to help foster partnerships between counties and the Department of Commerce, grant-writing professionals and university programs to reduce capacity constraints. Finally, in order to reduce multiple layers and steps of communication, the state should, where possible, invite planners to conversations with FEMA and program managers concerning their county hazard mitigation plans.

Recommendations for County Planners

County planners must shift away from treating HMPs as statutory requirements and instead design them to be dynamic, repeatable, and integrated frameworks for community resilience. Planners should explicitly “connect risk to action” by ensuring that community input and social vulnerability data directly align with mitigation priorities. To maximize funding windows, every proposed mitigation project should be “shovel-ready,” described with clear timelines, cost estimates, and designated responsible parties. To ensure continuity and efficiency across five-year planning cycles, local teams should use accessible formats and centralize data for future staff. To avoid stakeholder planning fatigue, planners should leverage existing community events for their own outreach and public engagement efforts. Finally, counties can boost community buy-in by partnering with local school districts to route accessible project information and feedback directly into resident households.

Hazard Mitigation Planning “Cookbook”

To assist Washington coastal county planners in implementing our recommendations, we prepared a county planner field guide to assist in reducing planner burden and navigation resources. Dubbed the “cookbook” for its easy-to-use, step-by-step instructional nature, the cookbook stems from the findings in our research and is informed by both the content analysis and planner interviews. It is designed to reduce burden by translating the HMP planning process into a clearer, more usable format, and is organized around 7 specific planning tasks.

CHAPTER 1: CHARTING THE COURSE

1.1 Project Background

Washington’s coastal communities are becoming increasingly vulnerable to a growing landscape of environmental hazards. Rising sea levels and changes in weather are intensifying the frequency and severity of natural hazards such as coastal flooding, bluff erosion, and storm impacts (Huppert et al, 2009). Rarer, potentially more catastrophic threats such as earthquakes, volcanoes, and tsunamis also continue to pose significant risks to these communities, which will likely be amplified by climate change (Bohnhoff et al, 2024). Washington’s coastal counties must prepare to ensure their communities can absorb and adapt to the changes caused by these natural hazards.

However, planning for hazards is a resource-intensive process, requiring more capacity than counties tend to have. This project overviews the current landscape of Hazard Mitigation Plans and assesses the needs, barriers and resources that county plan authors face when planning for Washington’s 15 coastal counties – Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom (see Figure 1, Washington State Coastal Zone). It also aims to define what a “useful” county-level Hazard Mitigation Plan looks like, then offers recommendations and a deliverable for improving HMP “usefulness” for coastal counties.

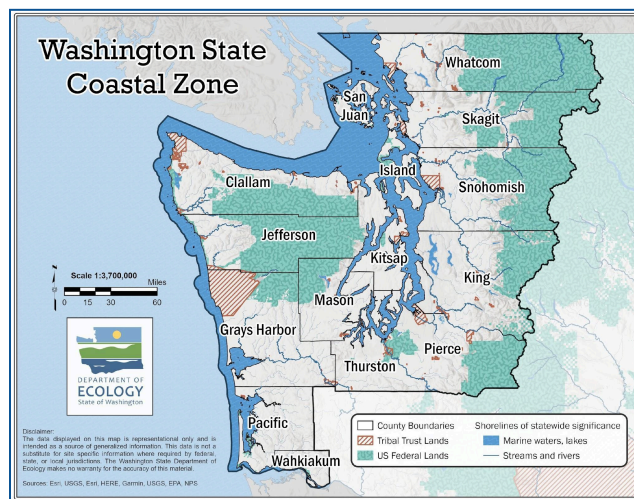


Figure 1. Map of Washington State’s 15 Coastal Counties
(Washington State Department of Ecology, 2026)

Hazard Mitigation Plans

A Hazard Mitigation Plan (HMP) offers a roadmap of strategies to reduce the damage, loss of life, and economic disruptions from many possible hazards. Traditionally, county governments have developed these plans to fulfill FEMA requirements and gain pre-emergency funding, including through the Hazard Mitigation Grant Program (67 C.F.R. § 201.3, 2002). The Federal Emergency Management Agency's (FEMA) State Mitigation Planning Policy Guide outlines that a mitigation plan "enables state, local, tribal and territorial governments to identify natural hazards affecting them, identify actions and activities to reduce losses from those hazards, and establish a coordinated process to implement the plan using a wide range of resources" (FEMA, 2023).

State mitigation plans underpin local county government HMPs, which are important for the preparation, response, and recovery of a local county government to a hazard. However, developing an HMP can require resources that a local government may not have. Moreover, a changing funding landscape, including the lack or uncertainty of FEMA funding, means that communities may be disincentivized or unable to effectively invest in hazard mitigation planning (McTarnaghan et al, 2025). Financially, this uncertainty makes it harder for communities to implement projects. Politically, local officials may be less likely to prioritize staff time, public engagement, and partner coordination needed to make plans useful. A pertinent example of this is FEMA's recent changes to its Building Resilient Infrastructure and Communities (BRIC) program, which restarted after an abrupt cancellation and now focuses on implementation-ready infrastructure projects while ending funding for hazard mitigation planning and direct technical assistance (Associated Press, 2026).

1.2 Project Purpose and Deliverables

The increasing threat of natural hazards in coastal regions heightens the need for effective and actionable HMPs. However, in addition to the various barriers that local jurisdictions face in developing comprehensive and useful hazard mitigation plans for their communities, these plans vary in content, strategy, and process across Washington's coastal counties.

This project was commissioned by the Washington Emergency Management Division (WA EMD) in collaboration with the Cascadia Coastlines and Peoples Hazards Research Hub (Cascadia CoPes Hub) to identify key features that make coastal hazard mitigation plans useful and feasible for the state's fifteen coastal counties. In addition, they sought to understand how state agencies could better support county-level planners to develop and implement these plans. To

achieve this, we expanded upon previous capstone research by reviewing relevant literature, coding 15 Washington coastal county HMPs, and interviewing hazard mitigation planners and emergency managers from 10 coastal counties. Our resulting findings and analysis informed the creation of a deliverable for our clients: a “cookbook” of best practices for hazard mitigation planning for new planners tasked with preparing or updating a jurisdiction’s plan.

1.3 Research Questions

This project is guided by one overarching question:

What guidance is needed to increase the usefulness of hazard mitigation plans (HMPs) and alleviate the administrative burden on planners for Washington’s coastal counties?

To better answer this question, we split our research into three main research areas, outlined in Figure 2.

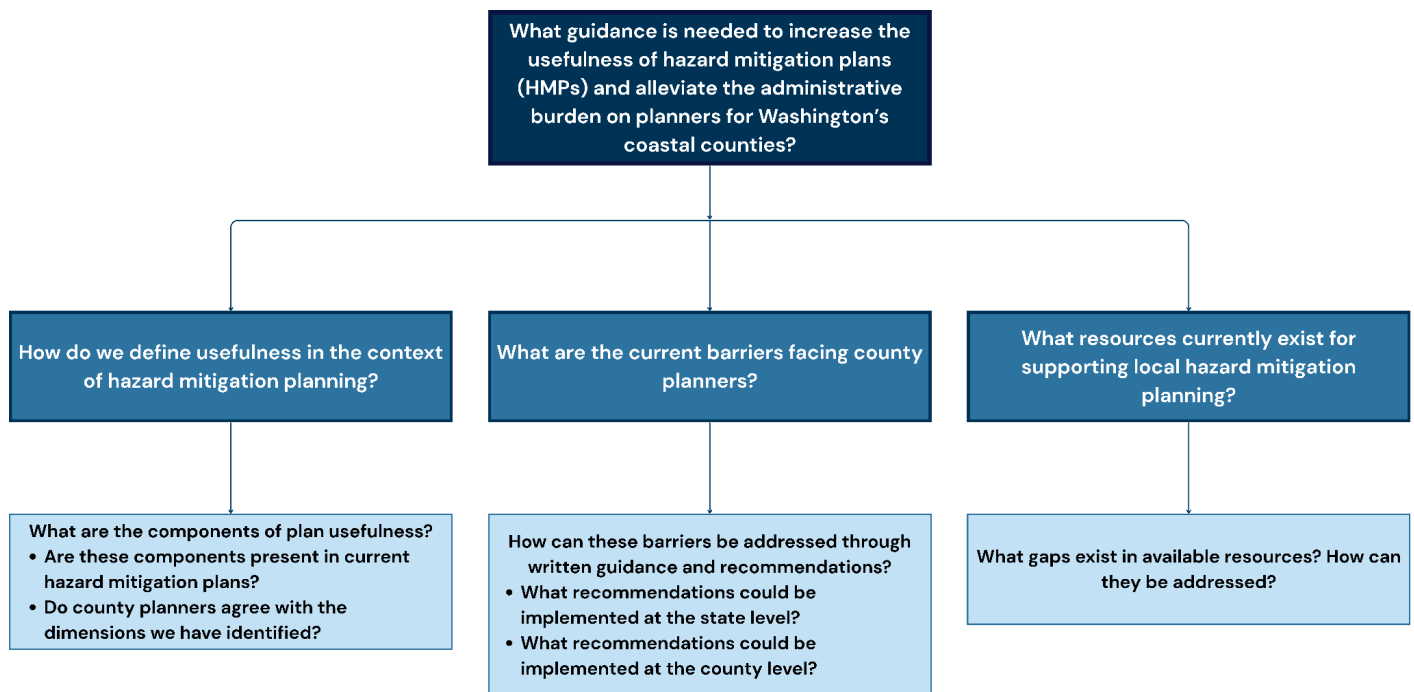


Figure 2. Capstone Research Questions

These research questions created a framework for evaluating the current state of coastal hazard mitigation planning and identifying the challenges within this process. They served as our north star while we investigated best practices found in literature and synthesized them with the lived experiences of planners on the ground. This dual approach ensured that our resulting recommendations were practically implementable within the constraints of limited local resources. Ultimately, these questions laid the foundation for the “Cookbook.” As data-driven resources, we hope they succeed in enhancing plan utility while streamlining the administrative process for Washington’s coastal planners.

1.4 Building on Previous Capstone Research

It is important to note that our research and supporting literature review build upon previous hazard mitigation capstones and research projects developed at the University of Washington. From these, we built a foundation of knowledge in this field and launched our own research. Studies included:

- “CEI Final Project: Social Vulnerability Integration and HMP Framework Analysis” by Ava Vaughan (August 2025). This research report analyzed the hazard mitigation plans (HMPs) of four Western Washington coastal counties to investigate their integration of social vulnerability, a framework required under the Biden Administration that emphasized planning around marginalized groups. Both commissioned by the WA Emergency Management Division, our report intends to expand upon the research of the CEI Final Report and adopts certain coding schemes constructed and applied by Vaughan.
- “A ‘Hole in the Community’ Approach – How Federal Disaster Policy Overlooks Indigenous Communities” by Ashton Jenicek, Evan Mix, Alyssa Nolter, and Charles Veith (June 2023). This research examined the extent to which Tribal governments have equitable access to hazard mitigation grants and aid provided by the Federal Emergency Management Agency. In addition to scaffolding our initial understanding of the hazard mitigation landscape at the national level, it informed our research questions and strategy.
- "Evaluating the Quality and Implementation of Hazard Mitigation Plans in Coastal Washington State" by Daniel S. Feinberg and Clare M. Ryan (2020). This study evaluated HMP plan quality and implementation across 19 Western Washington counties, serving as the launching point for our project and providing the core evaluative methodology we adapted for our own analysis.

1.5 Key Findings

- **HMPs are compliant, but vary in actionability:** All plans checked the boxes for FEMA compliance; however, the level of detail varied across plans. Ranging from broad mitigation actions to a lack of information on implementation. Planners also describe HMPs as not always the main drivers in day-to-day decision making, ultimately limiting a plan's ability to function as a planning tool over just a compliance document.
- **Risk assessments are detailed but can be disconnected from mitigation actions:** County HMPs include lengthy descriptions of hazard information, but there can be a vague connection between risk assessments and the selected mitigation. Planners highlight this by describing that risk assessments can be reliant upon external support and input. This may create a gap between the plan's fact base and its strategic actions.
- **Social vulnerability is often acknowledged but sparsely integrated into planning decisions:** The reviewed HMPs commonly identified social vulnerability factors. These factors were not always explicitly connected to risk assessments or following actions, and planners recognize the importance of serving socially vulnerable groups but often lack capacity or resources for engagement to result in concrete plan change.
- **Public engagement and community assets are documented, but their influence on plans is unclear:** Plans listed community assets through technical or institutional processes as opposed to community engagement, with planners noting that the Community Asset Approach may be more developed in comprehensive emergency management planning.
- **Implementation:** Is shaped by staff capacity, institutional knowledge, partners, consultant support, grant timelines, and whether projects are already "shovel-ready." Partnerships with agencies, local departments, consultants, community organizations, and neighboring jurisdictions are central to the planning process, but these relationships are unevenly documented in the plans themselves.

CHAPTER 2: DEFINING HAZARD MITIGATION PLAN “USEFULNESS” A LITERATURE REVIEW

2.1 Overview

Developing guidelines that increase the usefulness of coastal hazard mitigation plans (HMPs) while alleviating the administrative burden on planners requires a foundational understanding of the legal, theoretical, and practical underpinnings of hazard mitigation planning. In this chapter, we review the current landscape of county-level planning by examining the following areas:

- Governance Model: First, we frame hazard mitigation planning within the evolution of emergency management, from a reactive, “defense” mentality to the FEMA-driven, collaborative framework established by the Stafford and Disaster Mitigation Acts.
- Hazard Mitigation Planning: We then outline the regulatory components of local HMPs and contextualize them within the traditional four-phase emergency management cycle. This section identifies specific limitations and barriers to planning, such as staffing constraints and competing priorities, that create the administrative burden for Washington’s coastal planners.
- Defining “Usefulness”: To establish a clear evaluative standard, we analyze how “usefulness” is defined in dictionaries, in the academic “Seven Principles of Plan Quality,” and by FEMA. This provides the criteria for measuring whether an HMP is a dynamic decision-making tool or simply a compliance document.
- Social Vulnerability and Community Assets: Finally, we examine how HMPs can serve the entire community. We analyze the social vulnerability lens and its indices, while proposing the Community Asset Approach as an alternative, community-centered pathway for planning.

Together, these sections provide the theoretical framework that grounds our research questions, helping us to identify the gap between federal requirements and the practical needs of coastal counties in Washington State.

2.2. Methodology

Articles for this literature review were sourced using a three-phase approach. We began by conducting high-level research through the University of Washington Libraries database, using keywords such as “coastal hazard mitigation plans,” “hazard mitigation planning,” and “coastal hazards Washington State” to identify overview literature and relevant studies. After completing this preliminary research, we held a series of informational interviews with academics working on coastal hazard projects and the UW Social Sciences Librarian to solidify foundational sources and identify the research most relevant to the project. We then used backward and forward citation chaining to identify key literature cited in foundational sources and to explore more recent works building on that scholarship. These citation tracking strategies focused primarily on highly relevant studies around developing evaluative methodologies, such as Feinberg and Ryan (2020), and assessing governance structures and guiding frameworks of hazard mitigation planning, such as Jackman and Beruvides (2013).

2.3 Governance Model

Historically, the practice of emergency management focused on disaster response, paying little attention to preparation, recovery, or mitigation (Jackman & Beruvides, 2013). As Jackman and Beruvides (2013) explain, the first disasters that were met with government action in the 19th and 20th centuries were wars or attacks from outside invaders. As a result, the approach to emergency management early on was both militaristic, or “managing a disaster as an enemy attack,” and reactive in nature. This defense mentality shaped the culture surrounding emergency management and, to this day, is “the dominant approach to loss prevention at the local level” (Jackman & Beruvides, 2013).

The passage of the Disaster Relief Act of 1974 and the creation of the Federal Emergency Management Agency (FEMA) in 1979 consolidated emergency management into a comprehensive federal response system (Jackman & Beruvides, 2013). But it was Congress’s adoption of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) in 1988 that established our modern framework for federal disaster relief in the United States. The Stafford Act codified FEMA’s authority as the lead agency to coordinate disaster assistance and provide federal aid to state and local governments (Federal Emergency Management Act [FEMA], n.d.-b). In 2000, Congress passed the Disaster Mitigation Act (DMA), amending the Stafford Act to emphasize the importance of pre-disaster planning at the state and local levels as well (FEMA, n.d.-a).

The DMA provides a framework for federal, state, and local governments to work together to develop a comprehensive and integrated approach to hazard mitigation (Nolon, 2009; Berke et al, 2012). It promotes collaborative solutions and shifts certain responsibilities from the federal government to state and local governments (Nolon 2009). In doing so, the DMA aims to strengthen capacity at lower levels of government by providing access to funding, training, technical assistance, and access to data systems (Nolon, 2009; Berke et al, 2012).

The shift from a militaristic response to a collaborative approach exemplified in the DMA represents a fundamental change in how the U.S. builds institutional capacity in emergency management. The Stafford Act and DMA provide the legal and financial scaffolding for local governments to move beyond emergency response and into mitigation. The most important document through which this capacity is exercised is the Hazard Mitigation Plan.

2.4 Hazard Mitigation Planning

The Hazard Mitigation Plan

To operationalize this intergovernmental framework, the DMA requires that a state or local government have an approved hazard mitigation plan before it can receive hazard mitigation funding from FEMA (Procedures for State, Tribal, Local, and Territorial Mitigation Planning [Local Mitigation Planning], 44 C.F.R. § 201.3, 2024). While both levels of government share the goal of risk reduction, their plans differ in scope and function. State HMPs serve as high-level strategic roadmaps. They identify risks across the entire state and establish statewide mitigation goals (Local Mitigation Planning, 44 C.F.R. § 201.5, 2024). Local plans are designed to be complementary, with a more granular and action-oriented approach. They focus on specific geographic risks and list specific projects that the jurisdiction intends to implement (Local Mitigation Planning, 44 C.F.R. § 201.6, 2024).

Since our research focuses on coastal counties, we narrowed our literature review to focus on local-level hazard mitigation plans. FEMA regulation 44 C.F.R. §201.6 outlines the specific requirements for these plans, whose purpose is to represent a “jurisdiction’s commitment to reduce risks from natural hazards” and guide decision makers as they prioritize resources toward this goal. A local hazard mitigation plan seeking FEMA approval must include at least five components:

- 1.** Documentation of the planning process used to develop the plan;

2. A risk assessment for identified hazards and data-based mitigation actions to reduce losses from them;
3. The jurisdiction's mitigation strategy for reducing losses identified in the risk assessment.
4. The process by which the jurisdiction plans to maintain the hazard mitigation plan and incorporate its requirements into other planning mechanisms; and
5. Documentation that the plan has been formally adopted by the jurisdiction.

While this framework offers guidelines and defines minimum requirements for plan approval, it leaves considerable discretion to local governments regarding how to design and implement their plans, as well as who does it (Feinberg & Ryan, 2020; Lyles et al, 2014). An HMP is a strategic document that leads to real world implementation. To understand the dynamic complexity of this task, we need to understand how it fits into the broader emergency management cycle.

Contextualizing the HMP in the Emergency Management Cycle

FEMA's historical model for emergency management, which has been adopted for hazard mitigation planning as well, consists of four cyclical, overlapping phases of disaster activity: preparedness, response, recovery, and mitigation. These phases serve as the foundation for policy and program development across all hazard types and levels of government.



Figure 3. *Stages of an Emergency Management Cycle, adapted from Fox (2019).*

Hazard mitigation plans are most effectively understood within the preparedness (i.e., planning) phase rather than solely within mitigation, but also guide recovery efforts and inform response activities (Jackman & Beruvides, 2013). The following briefly outlines each phase, as described by Jackman and Beruvides (2013).

Preparedness: Occurs before an event happens through the development or updating of systems, programs, and activities. This can include risk, hazard, and vulnerability assessments, drills and exercises, and acquisition of resources.

Response: Focusing on the immediate effects of a hazard event to support short-term recovery, response is the immediate actions taken to meet basic human needs and to save lives, property, and the environment from further damage. The execution of emergency plans and medical assistance are examples of response.

Recovery: Following response, recovery focuses on addressing the long-term impacts of a hazard event to help a community return to normal or become more resilient. Damage assessments, restoration of critical facilities, and basic reconstruction fall within this phase.

Mitigation: Occurs in any phase of the emergency management cycle. Mitigation focuses on more permanently reducing risk by creating safer communities through building/rebuilding, legislation, and regularly scheduled risk and vulnerability assessments.

This four-phase cycle provides a logical framework for understanding the varying demands on local jurisdictions planning for emergencies. The phases can blur into each other as they compete for administrative demands and limited resources, particularly when hazards arise. As such, a local government's actual capacity to move through the phases varies significantly. In Washington State, the Emergency Management Division leaves it up to local jurisdictions to determine what phases to include in their emergency management cycle (E. Chappelka, personal communication, April 27, 2026). Ultimately, understanding how this theoretical framework is operationalized can reveal specific barriers that prevent local governments from fully realizing the goals outlined in their hazard mitigation plans.

Limitations and Barriers to Creating an Effective, Local-Level Hazard Mitigation Plan

Previous academic research analyzing HMPs points to the importance of local-level plans in identifying community-specific hazards, vulnerabilities, and feasible mitigation actions, and in translating federal and state mitigation goals into place-based strategies (Feinberg & Ryan, 2020; Jackman & Beruvides, 2013; Berke et al, 2012). It also highlights, however, that sub-state plans often lack key components, such as specific mitigation policies and actions (Feinberg & Ryan, 2020) or a method for evaluating the quality and effectiveness of the plan (Frazier et al, 2013). In some instances, lacking sufficient inclusion of hazard mitigation elements within local plans can mean the failure to protect vulnerable areas and, in extreme cases, can even increase vulnerabilities (Feinberg & Ryan, 2020; Berke et al, 2015).

As questions arise regarding the effectiveness of HMPs designed according to DMA requirements, researchers have also begun to investigate and identify the constraints faced by hazard mitigation planners (Frazier et al, 2013; Malecha et al, 2024; Conroy, 2025; Crowley, et al, 2025). A survey of planners across the U.S. found strong evidence that limited staffing and competing priorities represent significant barriers to the development of local disaster debris management plans. The findings also indicated that jurisdictions with greater staffing capacity were more likely to effectively implement their hazard mitigation and disaster debris management plans (Crowley et al, 2025). Other studies have identified available resources, institutional capacity and political challenges as key factors that influence both the quality of HMPs and the implementation of their mitigation strategies (Frazier et al, 2013; see also Malecha et al, 2024). Taken together, this literature suggests that while local hazard mitigation plans are essential tools for reducing risk, their effectiveness is frequently constrained by design limitations, uneven implementation and institutional capacity challenges, highlighting the need for closer examination of how these factors interact in coastal jurisdictions in Washington State.

2.5 Defining Hazard Mitigation Plan “Usefulness.”

Defining “Usefulness”

To create a definition of “usefulness” within the context of coastal hazard mitigation plans, we first sought to understand how it has been defined more generally. Popular dictionaries define the concept as:

1. Capable of being put to use, especially: serviceable for an end or purpose (i.e. useful tools) (definition 1, Merriam-Webster Dictionary, 2026)

2. Of a valuable or productive kind (definition 2, Merriam-Webster Dictionary, 2026)
3. Effective: helping you to do or achieve something (Cambridge Dictionary, 2026)
4. Of things, actions, practices, etc.: capable of being put to good use; suitable for use; advantageous, profitable, beneficial (Oxford English Dictionary, 2026)

While interesting, these general terms fail to capture the technical and administrative dimensions required for an HMP to be “serviceable for an end or purpose” or “effective.” In the context of hazard mitigation planning, utility is more accurately defined by a plan’s ability to be integrated into decision-making and to trigger tangible risk-reduction actions (Berke et al, 2012). The “usefulness” of a planning document may be contingent upon the degree to which it meets the informational and operational needs of the planners and stakeholders who implement it (Berke & Godschalk, 2009). Consequently, evaluating the usefulness of an HMP requires analyzing the factors that influence planning efforts and local implementation.

The 7 Principles of Hazard Mitigation Plan Quality

Finding literature around the concept of “usefulness” in the hazard mitigation planning context was difficult. “Usefulness” is not a term of art in the field and can be very subjective. However, in the existing literature, there are seven Principles of Hazard Mitigation Plan Quality used to assess the level of implementation at the county level. The seven principles begin with a strong foundation in direction-setting characteristics. Foundational to HMPs are **goals**, which describe the future conditions a community seeks to achieve and reflect local values and hazard contexts. These goals provide a guiding vision and establish a benchmark for evaluating progress. The **fact base** supports these goals by anchoring the plan in empirical analysis through hazard identification and risk estimation. A thorough fact base ensures that priorities are driven by evidence, hazard specificity, loss estimations, and considerations of social vulnerability and critical infrastructure. Building on this foundation, **policies** translate analysis into strategy via linking identified risks to specific mitigation actions, such as land-use regulation, infrastructure projects, or public education. In higher-quality plans, these principles are not treated as separate components but are tightly connected, demonstrating how local risk conditions shape and justify the chosen mitigation approach (Lyles et al, 2014; Berke et al, 2012).

Following these strategic principles, hazard mitigation plans become “quality” when they are designed to function in practice through action-oriented principles. **Participation** brings plans to life by engaging stakeholders across government, community organizations, and the public, strengthening legitimacy and fostering the shared understanding necessary for implementation.

Coordination follows through with engagement across jurisdictions and local partners, ensuring that mitigation efforts are integrated with related plans and governance systems rather than fragmented into silos. **Implementation** then signals whether a plan is truly actionable, as high-quality plans clearly assign responsibilities, timelines, and resources, embedding mitigation actions within institutional processes. Finally, **monitoring** closes the loop by establishing mechanisms to track progress, evaluate outcomes, and update the plan over time, allowing for adaptation as risks and conditions evolve and governance systems change. The seven principles shift hazard mitigation plans from compliance documents to tools that support ongoing decision-making and reduce long-term disaster risk (Lyles et al, 2014; Berke et al, 2012).

FEMA's Interpretation of "Usefulness" in the Context of Hazard Mitigation Planning

As the lead federal agency coordinating and funding disaster assistance in the country, understanding FEMA's interpretation of HMP "usefulness" was also a priority in our literature review. The agency has specific goals and actions that it wants local governments to consider in their hazard mitigation planning process. According to FEMA, hazard mitigation plans are intended to have the following goals (underlined, for emphasis) (FEMA, n.d.-c; FEMA, 2025b). In order to achieve those goals, hazard mitigation plans should take certain **actions** (in **bold**, for emphasis) (FEMA, n.d.-c; FEMA, 2025b).

From FEMA's main website (FEMA, n.d.-c), on Hazard Mitigation Planning:

"Hazard mitigation planning reduces loss of life and property by minimizing the impact of disasters. It begins with state, tribal and **local governments identifying natural disaster risks and vulnerabilities that are common in their area**. After identifying these risks, they **develop long-term strategies for protecting people and property from similar events**. Mitigation plans are key to breaking the cycle of disaster damage and reconstruction."

From FEMA's Local Planning Policy Guide (FEMA, 2025b):

"Local hazard mitigation plans form the foundation of a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction and repetitive damage." FEMA supports local mitigation planning to achieve the following:

- **Foster partnerships among all levels of government.**
- **Develop and strengthen non-governmental and private partnerships.**

- **Promote more disaster-resilient communities.**
- **Reduce the costs associated with disaster response and recovery by promoting mitigation activities.**

LEGEND:

-Underlined = HMP goals, according to FEMA

-**Bold** = actions needed in the HMP to achieve its goals, according to FEMA

While FEMA provides these goals as a regulatory benchmark for approval, there is often a gap between federal compliance and local needs. From a policy perspective, these goals represent the minimum threshold for a plan to be functional. However, for a coastal county HMP to be “useful,” it must go beyond these general requirements to address county-specific resource and informational needs. One way to address this gap is by applying a community-oriented approach to planning.

2.6 Planning with Social Vulnerability and Community Assets

Adopting a Social Vulnerability Lens to Serve the Entire Community

Applying a social vulnerability lens to all stages of hazard mitigation planning is important to developing a plan that serves the entire community, particularly those most at risk. Literature highlights that there are “significant relationships between damage and hazard exposure, structural characteristics, and social characteristics” (Highfield et al, 2014). While definitions vary,¹ hazards literature consistently refers to social vulnerability as the characteristics of a given population—such as age, race, disability, and socioeconomic status—that shape their sensitivity to, and ability to recover from, hazardous events (Berke et al, 2015; Cutter & Finch, 2008; Cutter, 1996; Blaikie et al, 2004; Otto et al, 2017). Many studies state that social vulnerability should be measured across time, as changing environmental and social conditions may affect the vulnerability of particular individuals or communities (Cutter & Finch, 2008; Otto et al, 2017). Some scholars even differentiate a given community’s vulnerability before a disaster from their vulnerability in the recovery process and post-disaster (Oppenheimer et al, 2014).

Social Vulnerability in Practice: Susceptibility, Resilience and Vulnerability

However, there is a significant gap between academic theory and federal guidance. While academics focus on the social characteristics of vulnerability, FEMA’s Local Hazard Mitigation

¹ For example, one definition of vulnerability is, “the degree to which a population or an individual is unable to anticipate, cope with, resist and recover from the impacts of disasters” (Wisner & Adams, 2003).

Planning Handbook (FEMA, 2025c) does not explicitly mention social vulnerability and instead focuses on vulnerability as physical assets and community lifelines. Although FEMA requires that risk assessments analyze “the vulnerability of the population” (FEMA, 2025c) and recognizes that those most at risk tend to suffer the most loss from disasters and are left out of the planning processes, it offers limited guidance for remedying inequities beyond strategic placement of critical facilities (FEMA, 2025c). Although some instructions provided to local planners by FEMA allude to the facets of social vulnerability present in academic literature, comprehensive content analysis of local HMPs was needed to understand the variance in how social vulnerability is incorporated into local planning in Washington State (see Chapter 4).

Social Vulnerability Indices and Their Limitations

Many jurisdictions rely on indices that aggregate social factors to estimate a community’s social vulnerability, such as the Social Vulnerability Index (SoVI) (Cutter, Boruff, & Shirley, 2003), social vulnerability indices (SVIs) based on SoVI (Berke et al, 2015; Cutter & Finch, 2008; Cardona et al, 2012; Oppenheimer et al, 2014; Bergstrand et al, 2017), or FEMA’s National Risk Index. The SoVI, for example, “provides a county-level comparative metric of social vulnerability to natural hazards based on the underlying socioeconomic and demographic profile” (Cutter & Finch, 2008; see also Mah et al, 2023). While these social vulnerability indicators provide valuable comparative metrics, recent research has identified limitations in the natural hazards context (Nelson, 2025; Spielman et al, 2020).

Methodological limitations

Recent research highlights concerns around scale, resolution and the reliance on statistical aggregation (Nelson, 2025; Spielman et al, 2020). By collapsing multidimensional information into a single data score, indices often obscure intersectional effects and assume uniform impacts across populations (Nelson, 2025). Furthermore, rankings can fluctuate widely based on the data subsets used for inputs, leading to potentially inaccurate measures when state or national data are applied at local levels (Spielman et al, 2020). Critics also point to a lack of construct validity, noting that certain variables can produce counterintuitive results, such as higher unemployment rates correlating with lower social vulnerability scores (Spielman et al, 2020).

Policy and implementation constraints

The practical utility of SVIs is further complicated by federal policy. Wood et al. (2021) argue that FEMA’s BRIC funding guidelines over-incentivize the use of these rigid, aggregate indices for

vulnerability assessments. They argue that this creates a barrier to equity-focused planning, as local managers are often forced to prioritize meeting agency data requirements over addressing specific local needs. Instead, the authors advocate for a shift toward community-centered approaches, suggesting that direct engagement with local leaders reveals “practical truths” about vulnerability that mapping and point data alone cannot capture (Wood et al, 2021). Consequently, improving hazard mitigation planning requires acknowledging the limitations of current SVI-heavy frameworks and allowing for greater flexibility in how communities define and address their unique vulnerabilities.

Community Asset Approach: An Alternative

A Community Asset Approach could be an alternative pathway to develop HMPs that better reflect the needs of the community. The Community Asset Approach is based on the Asset-Based Community Development (ABCD) strategy, established by Kretzmann and McKnight (1993). Both hazard mitigation and development have traditionally focused on a needs-first-based approach. This approach focuses on the deficiencies and problems within a community (Kretzmann & McKnight, 1993). Government bodies and institutions then create policies around fulfilling the identified needs. However, a deficiency-focused approach to community development can fail to recognize a community’s strengths and remove their agency (Kretzmann & McKnight, 1993; Mathie & Cunningham, 2003).

Kretzmann and McKnight (1993) outlined a community asset driven approach to development as an alternative to “needs-driven” development. ABCD focuses on engagement with the community to take control “by identifying and mobilizing existing (but often unrecognized) assets” (Mathie & Cunningham, 2003). ABCD typically involves first conducting community group discussions to share stories and create connections. This group then “map[s] capacities, assets, associations and local institutions,” to create a community-led plan supported by social capital within the community (Scott et al, 2017). This approach identifies and highlights assets already accessible to the community, creating positive engagement with community development. Social networks and relationships are key to ABCD, by highlighting the role of social capital to support development (Mathie & Cunningham, 2003; Scott et al, 2017).

ABCD can be used to improve the process of both hazard mitigation and recovery (Nguyen et al, 2023; Freitag et al, 2014; Scott et al, 2017). Like development, hazard mitigation has traditionally focused on a needs-first, or hazard-first approach. The hazard-first approach emphasizes the risk of hazards and potential damage to communities, including the loss of life and property. Instead, an asset-based approach to hazard mitigation starts with using

community participation to identify existing “built, natural and social assets” (Freitag et al, 2014). The identified assets are then used to plan for a potential hazard. Literature has shown the potential benefits of applying this approach to hazard mitigation (Freitag et al, 2014; Scott et al, 2017). Scott, Smith, and Schaedler (2017) used the assets-based community development approach to improve community preparedness for fires in East Gippsland, Australia through community directed projects. The process led to community members feeling empowered to act and more prepared to face future fire hazards (Scott et al, 2017).

More broadly, community participation is recognized as integral to developing and implementing hazard mitigation successfully (Pearce, 2003). Community participation in hazard mitigation leads to more sustainable long-term resilience. Public participation is key to the community asset-based hazard mitigation approach. Community led discussions empower citizens to identify current assets and prepare for hazards. An asset-based approach allows citizens to see the links between current planning goals and resilience to future hazards (Freitag et al, 2014).

How does the Community Asset Approach account for social vulnerability?

The Community Asset Approach highlights the potential strengths of a community and how they could be harnessed, instead of just emphasizing the vulnerabilities. Literature also finds that community assets can help support more vulnerable households during a disaster. Often minority communities are less able to prepare effectively, making access to both social and physical community assets key for vulnerable populations in a hazard event (Nguyen et al, 2023). Identifying these assets beforehand allows a community to better prepare for a hazard. Highlighting existing assets can also help community members engage more positively in disaster preparedness and feel less overwhelmed by the process. Nguyen et al. (2023) highlight the importance of social capital for “effective preparedness in lower-income households” (Cutter et al, 2003). Social capital can be identified through a community asset-based approach.

2.7 Conclusion

This review highlights the guiding legislation and frameworks of HMP development, methodologies for evaluating county-level HMP quality and implementation, and the Community Asset Approach as an alternative planning framework. Within existing literature, the seven Principles of Hazard Mitigation Plan Quality (Lyles et al, 2014; Berke et al, 2012) is the most cited and thoroughly developed methodology for HMP evaluation, forming the basis of most HMP quality assessment methods. Though the seven principles do not include dimensions

for evaluating components of social vulnerability, there is a body of literature that assesses the application of SVIs in hazard planning. Despite widespread use, SVIs are oversimplified and often inaccurate measures of social vulnerability. Some authors note that FEMA guidelines would better serve socially vulnerable communities if there were to allow for a community-centered approach. As an alternative to the hazards-first planning approach, the Community Asset Approach centers community values and needs in the hazard mitigation practice. Such an approach requires high levels of community involvement, but stands to inspire more creative planning practices that address the priorities of the communities they are intended to protect.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 County-level Catalog

To ensure that Washington’s coastal counties were represented in our analysis, we created a catalog of the most recent HMPs adopted by each of the 15 coastal counties in the State. After our clients, WA Emergency Management Division and Cascadia CoPes Hub, reviewed the list for accuracy, the catalog became the primary sample for our content analysis.

3.2 Defining Usefulness

To align our content analysis and interviews with our research questions, we established a foundational definition of “usefulness” for hazard mitigation planning. We first synthesized definitions from Merriam-Webster, Cambridge and Oxford English Dictionaries into one conceptual construct. We then refined it by integrating the purpose of local HMPs as outlined in 44 C.F.R. § 201.6 (2024) and findings from scholarly literature (see Chapter 2, Section 2.5.3) into our working definition.

Within the context of hazard mitigation planning, we defined a “useful” county HMP as:

A useful county HMP is...

“a plan capable of being used in a manner serviceable to reducing disaster loss and breaking the cycle of disaster damage, reconstruction, and repetitive damage.”

The tasks FEMA cited to accomplish the end goal of HMPs, along with supporting elements from the literature review, became the seven components of usefulness (see Chapter 2, section 2.5.3). These components are:

The 7 Components of Usefulness:

- (1) Strengthening community resilience
- (2) Identification of natural disaster risks and vulnerabilities of an area
- (3) Strategies for protecting people and property from hazards
- (4) Reducing costs associated with disaster response and recovery by promoting mitigation activities
- (5) Implementation and use of HMPs

- (6) Fostering partnership among all levels of government
- (7) Developing or strengthening non-governmental and private partnerships

Our definition of usefulness and its components guided our content analysis of the county HMPs and semi-structured interviews with HMP authors. These methods were used to verify that our identified components of usefulness were 1) relevant within the context of coastal hazard mitigation planning in Washington, and 2) responsive to our research question.

3.3. HMP Content Analysis

Content analysis provides an effective framework for analyzing and systematically coding qualitative data (Bernard et al, 2017) and converting qualitative content into quantitative trends (Johnson, 2014). We utilized this approach to evaluate the HMPs for all 15 coastal counties in Washington State. Our analysis was anchored by our primary research question, “What guidance is needed to increase the usefulness of hazard mitigation plans (HMPs) and alleviate the administrative burden on planners for Washington’s coastal counties?”

Specifically, the content analysis identified which components of usefulness are omitted or applied across Washington coastal county HMPs, and with what frequency. The analysis also determined whether a Community Asset Based Approach is currently being utilized in mitigation planning, which allowed us to explore the feasibility of adopting the approach for future planning efforts. By systematically coding these documents, we identified examples of effective incorporation of the components of “usefulness” alongside planning gaps, which lay the foundation for our proposed county HMP drafting guidelines.

A two-member HMP research team led the codebook development and conducted the content analysis of the 15 HMPs included in our sample. The development of our methodology and codebook (Appendix A, HMP Content Analysis Codebook) was an iterative process (see Figure 4). Using the core components of usefulness as initial major themes, we first conducted a comparative analysis of the coding schemes constructed and applied by Feinberg (2019), Vaughan (2025), Berke et al. (2012), Peacock et al. (2009), and Lyles et al. (2014) in their studies evaluating HMPs (Figure 4, Step 1). This cross-examination allowed us to isolate validated codes that measured our defined components of usefulness, note variations across the literature, and identify areas where additional codes were needed for our analysis.

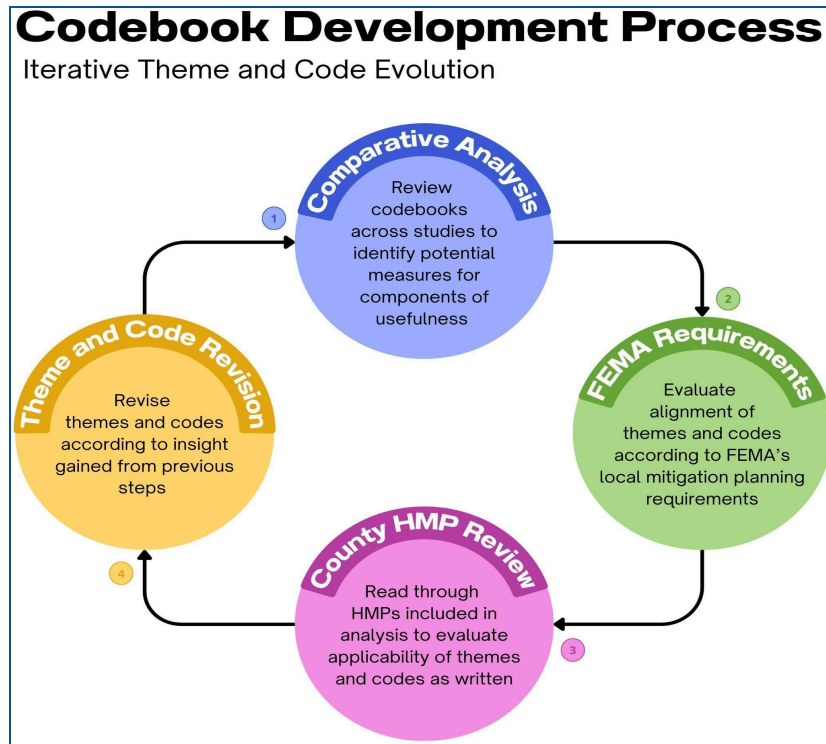


Figure 4. *The Development Process*

We then evaluated the alignment of these initial themes and codes against the federal planning requirements outlined in FEMA’s 2025 Local Mitigation Planning Handbook (Figure 4, Step 2). Next, we read through the HMPs included in our analysis to test the applicability of our themes and codes to the plans as written (Figure 4, Step 3). Integrating insights from these reviews, we revised our coding parameters to ensure they fully captured the components of usefulness and the information needed to gauge the feasibility of a community asset-based approach to planning (Figure 4, Step 4). Through this process, we generated the supplemental codes needed to complete a comprehensive, rigorous research codebook.

Through this iterative process, we developed a comprehensive framework of 132 codes to evaluate HMP components across six major themes: risk and vulnerability, community assets, general public involvement, plan implementation, mitigation activities, and fostering partnership (see Figure 5 on the page below). Though the seven components of usefulness served as our baseline for theme development (section 3.2), these were revised down to six to better explore the feasibility of using a Community Asset Approach and ensure alignment with FEMA’s local mitigation planning requirements (Figure 5). Within each of our six umbrella themes, codes were categorized into subthemes: actions, assessment, criteria, goals, methods, and resources. Subthemes were developed to systematize the coding process and support coder

consistency in managing large volumes of text. These subthemes functioned solely as organizational aids and were not treated as analytic categories during analysis. Not all subthemes were present within each major theme (see Figure 5 on the page below).

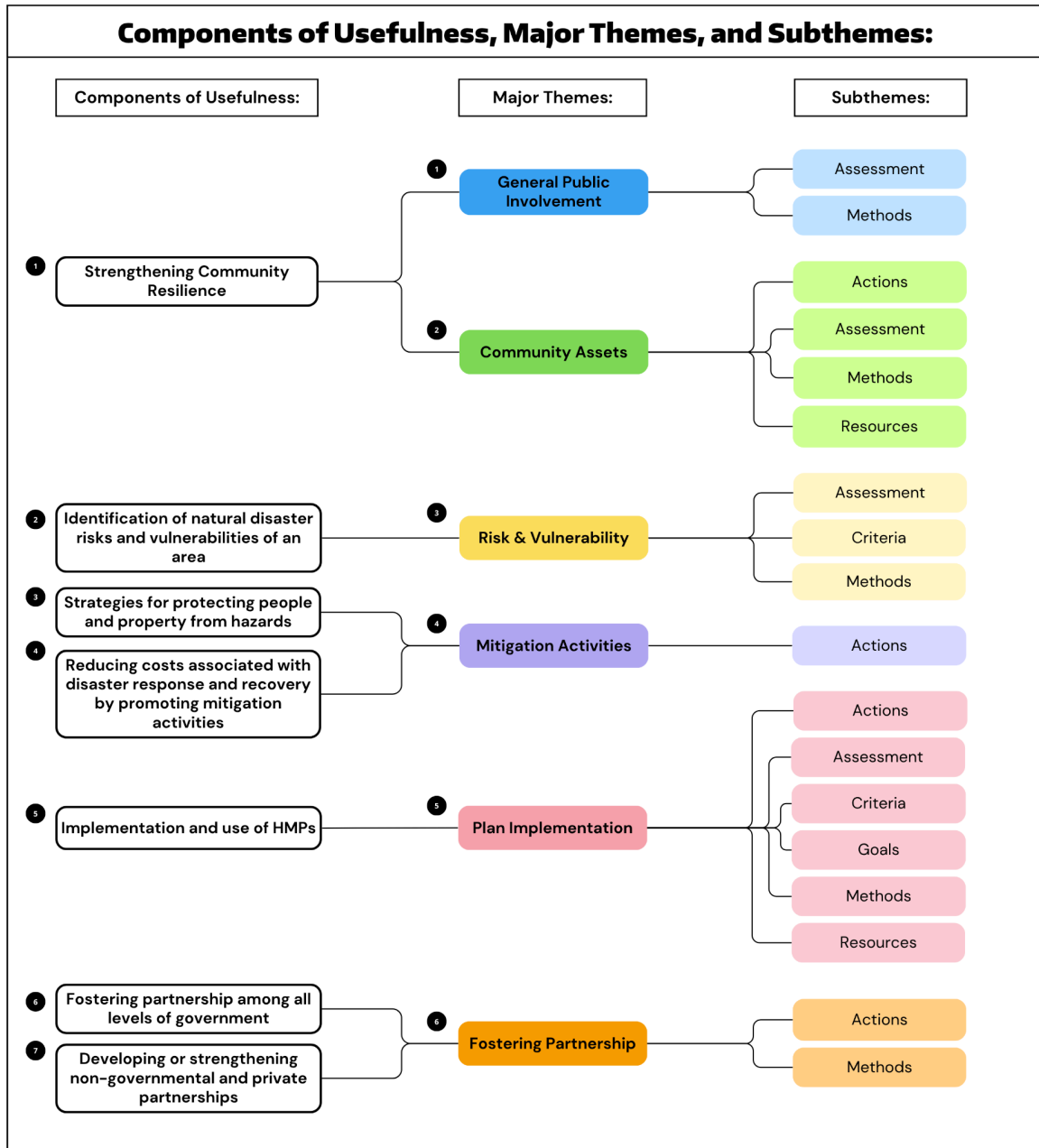


Figure 5. HMP Content Analysis - Major Theme & Subtheme Development.

All 132 codes follow a binary structure, denoting either the presence or absence of a component within the HMP. To capture variations in the level of detail or extent to which a component is included across the HMPs, coders wrote memos throughout the coding process.

The unit of analysis coded in our content analysis was plan sections, which are titled and indicated within the HMPs. To create a more nuanced evaluation, however, coders also applied qualitative memos to smaller segments of text, such as paragraphs or tables, where necessary to provide context and aid our final analysis.

Once the coding scheme was established, we randomly selected one outdated coastal county HMP to serve as a trial for the codebook. Both consultants coded this plan independently, and subsequently met to discuss codebook revisions and ensure a unified understanding of the coding protocols. Final codebook adjustments were integrated using the iterative approach detailed above. To verify these adjustments, we conducted a second trial procedure with the same HMP, which confirmed no additional revisions to the codebook were needed.

With the codebook finalized, both consultants independently coded all 15 current coastal county HMPs using Atlas.Ti. Following the independent review of each plan, the coding team met to cross-examine the data and ensure all codes were applied correctly. We then calculated the inter-coder reliability of our content analysis through Recal, which evaluates inter-coder reliability using percent agreement and Cohen's Kappa.

3.4 Semi-Structured Interviews & Analysis

In addition to understanding the usefulness of county HMPs themselves, WA EMD wanted to understand the practices associated with increased implementation of plans and develop guidelines that supported the use of best practices. To better understand the appropriate scope and focus of research to address this, we conducted a series of informal informational interviews with researchers who focus on hazard mitigation planning and coastal resilience and adaptation, as well as WA EMD members with extensive knowledge about HMP planning processes and guidelines. A two-member interview team then developed a formal interview protocol and conducted semi-structured interviews with HMP plan authors, which were followed by a short, written survey. The study was qualified for the exempt status category 2 by the University of Washington Human Subjects Division, allowing research to be conducted without further review or IRB approval. The study can be found under the study number STUDY00025228.

Interview Question Design and Protocol

Interview questions were designed to verify and expand on findings from our HMP content analysis, providing insight into the applications and usefulness of HMPs in practice (Appendix B, Interview Protocol and Questions). The interviews also focused on providing an understanding

of the challenges of HMP development and implementation and exploring recommendations for improving the process. To encourage more detailed responses, interview questions were designed to be open-ended, with potential probes listed to explore responses further as needed. Though open-ended, interview questions were written carefully to ensure that all key areas of research were addressed in each interview. There were 5 main sections of the interview, each with its own questions:

1. Introductory question
2. Identify the usefulness of a county's HMP (compliance vs. living document)
3. Identify elements in an HMP that trigger implementation
4. Barriers to HMP planning and resources for alleviating planner burden
5. Closing question

The interview protocol started with an introduction script, explaining the purpose of the study, the sections of the interview questions, confidentiality, and consent disclosures with the use of Zoom recording and transcripts for later analysis. The protocol was designed for interviews to take 35 to 45 minutes, and was scheduled via email outreach. The full protocol is included in Appendix B, Interview Protocol and Questions. The protocol included 13 primary questions, supported by optional prompts allowing for follow up depending on participant responses. Questions were formulated around the primary research questions and based on the seven components of usefulness to ensure relevance to the study (see Chapter 3, Section 3.2).

At the end of each interview, interview subjects were also asked to complete a 1-question, voluntary survey (see Appendix C, Post-Interview Survey About 7 Dimensions of HMP Usefulness). The survey question was designed to measure the extent to which our components of usefulness reflect what county planners perceive as being useful for HMP development and implementation. It also served as a relevance check, ensuring that the components the team formulated via the literature review were grounded in planner experience and realities.

Interview Sampling

For the informational interviews, we employed a chain-referral sampling method, leveraging recommendations from our advisor, clients, and initial interviewees to identify additional personnel with specialized insight into hazard mitigation planning. The semi-structured interviews were designed to explore the real-world usefulness of HMPs, identify the

administrative barriers facing county planners, and evaluate potential strategies for minimizing administrative burdens through tailored HMP developmental guidelines.

Given the small number of coastal counties in Washington and the goal of our research to provide planning guidelines that alleviate administrative burden and increase the usefulness of HMPs in those counties, we employed a purposive, non-probability sampling method. We invited primary HMP authors from all 15 coastal counties in the State to participate in this study. Representatives from five counties either did not respond to interview requests or declined to participate.

The interview team conducted ten semi-structured interviews with eleven county employees in charge of authoring HMPs in ten counties. Of Washington's fifteen coastal counties, we conducted interviews with planners in: Clallam County, King County, Kitsap County, Pacific County, Pierce County, San Juan County, Skagit County, Snohomish County, Thurston County, and Whatcom County. We did not interview planners from the coastal counties of Grays Harbor, Island, Jefferson, Mason, or Wahkiakum.

Interview Coding and Analysis

With permission from interview subjects, all interviews were recorded, transcribed, and analyzed. Our analytical framework was adapted from our HMP content analysis codebook and drew additional methodological parameters from Feinberg (2019) and Vaughan (2025). In alignment with Feinberg's (2019) approach, we employed a hybrid coding technique that used both theory and data-driven parameters to analyze the transcripts. To ensure textual accuracy, we manually edited all automated Zoom transcriptions in Microsoft Word while listening to the original Zoom audio files. The finalized transcripts were then uploaded into Dedoose for formal coding.

The coding scheme in Dedoose consisted of eight codes designed to align our interview data with our overarching HMP content analysis evaluation (see Figure 5, HMP Content Analysis - Major Theme Development; Appendix D, Interview Content Analysis Codebook). We adopted six umbrella themes directly from our initial HMP content analysis to capture the seven core components of plan usefulness: risk and vulnerability, mitigation activities, community assets, general public involvement, plan implementation, and fostering partnerships. In addition to directly addressing our primary research questions and informing our final deliverables, we introduced two unique, data-driven codes: Planner Barriers and Resources for Planners.

Once relevant interview excerpts were coded, the data were exported into an Excel file for thematic synthesis. Researchers manually reviewed these compiled excerpts and clustered related codes into major emerging themes (see Appendix E, Quotes from Coded Interview Responses). These code themes allowed for specific analysis tied to the research questions and assisted in creating the recommendations and client deliverables. Because the interview analysis used separate coding schemes for different research objectives, inter-coder reliability was not calculated for the interview transcripts. Instead, the two team members divided the coding work by analytic focus: one coded excerpts related to the components of usefulness, while the other coded excerpts related to planner barriers and resources. This approach reduced overlap between coding categories and supported consistency within each coding scheme.

Post-interview Survey

To conclude the interview process, participants were invited to complete a 7-item Likert-scale questionnaire. The survey question was designed to measure the perceived value and relevance of the seven dimensions of HMP usefulness established in this report. Participants were prompted to “rate how important you think these components are for creating a hazard mitigation plan,” using a scale of 1 to 5, with 1 being “not important” and 5 being “very important” (Appendix C, Interview Survey about 7 Dimensions of HMP Usefulness). This supplemental survey received responses from nine (9) of the participating coastal counties.

CHAPTER 4: ANALYSIS & FINDINGS

This chapter presents the findings from our qualitative analysis. Building upon our initial literature review and informational interviews, this phase of our research involved two primary methods: a content analysis of the 15 most recent HMPs from Washington’s coastal counties, and semi-structured interviews with planners from 10 counties. We first present our analysis and findings from the HMP content analysis, before turning to the insights gained from our semi-structured interviews. Within each section, our findings are organized around the six major themes derived from our defined components of plan usefulness:

1. Risk and vulnerability
2. Mitigation activities
3. Plan implementation
4. Public involvement
5. Community assets
6. Fostering partnership

After presenting these individual findings, we synthesize the data to show how the document analysis and semi-structured interviews inform one another. We then discuss their broader implications for mitigation planning in Washington’s coastal counties and discuss our research limitations in Chapter 5 (see Chapter 5: Discussion & Conclusion).

4.1 Findings from Content Analysis of County Hazard Mitigation Plans

Inter-coder Reliability

To evaluate inter-coder reliability, the coding team reformatted the Atlas.Ti code application data for compatibility with ReCal (for results see Appendix F, Inter-coder Reliability Data). Inter-coder reliability was evaluated using percent agreement and Cohen’s Kappa—a metric ranging from -1 to 1, where -1 indicates complete disagreement between coders and 1 indicates perfect agreement (Halpin, 2024). Regarding percent agreement, inter-coder reliability across all codes and all analyzed documents ranged from 95.32% to 100%, with the average percent agreement being 99.4%. The calculated Cohen's Kappas also indicate high inter-coder reliability, with Kappas ranging from 0.61 on the low end to 1, with the average being 0.948. Regarding acceptable inter-coder reliability, some academic frameworks consider a range of 0.4 - 0.6 to be

an acceptable score, while others cite a minimum score of 0.8 - 0.9 for acceptable inter-coder reliability (Halpin, 2024). Given that the average Cohen's Kappa across codes was 0.948, and that the average percent agreement was 99.4%, the results of our content analysis are likely acceptable across academic frameworks.

It should be noted that two codes, Variable 60 and Variable 104 (see Appendix F, Inter-coder Reliability Data), were excluded from the Cohen's Kappa range and average calculated across codes. These variables were excluded due to the possibility of the Kappa Paradox, which holds that codes applied infrequently may receive a deceptively low Cohen's Kappa despite high percent agreement due to a lack of variability (Derksen et al, 2024). Both variables received a percent agreement of 99.42%, but Cohen's Kappas of -0.00, with each having only one instance of disagreement between coders. Both codes (i.e. Variable 60 and Variable 104) were only marked as present once across all plans, indicating extremely low variance. In both instances, the codes were applied by a single coder—making the sole instance of code application the only instance of disagreement. Due to this extremely low variability, coders were concerned that these variables may be susceptible to the Kappa Paradox. Because their inclusion could disproportionately skew the overall assessment of inter-coder reliability, these variables were omitted from analysis of Cohen's Kappas.

Major Takeaways Across the Six Major Analytical Themes

We evaluated the 15 county HMPs using six major themes: risk and vulnerability, community assets, general public involvement, plan implementation, mitigation activities, and fostering partnership. Derived from the seven components of usefulness established in planning literature, these six categories were streamlined to align with FEMA's local mitigation planning and HMP requirements (see Chapter 3.3, Figure 5). Using our codebook (see Appendix A), our content analysis examined whether and how these plans included these core components of usefulness. While every sampled HMP fulfilled FEMA requirements, the documents varied significantly in focus, individual scope, and depth of analysis, reflecting the disparate resource levels across Washington's coastal counties (see Appendix G, Full Codebook Results). Several major takeaways emerged from this evaluation.

The key takeaways across the six major themes were:

- Although many plans identified determinants of social vulnerability and the disproportionate risk of evaluated hazards to certain groups, most HMPs did not explicitly incorporate those disproportionate risks into how they developed plan goals, conducted risk assessments, or identified and prioritized mitigation strategies.

- Across all plan sections, many HMPs lacked specificity.
- The majority of plans included an extensive assessment of assets; however, counties determined the assets most essential to communities without the input of the general public.
- Across plans, multiple avenues for public engagement were utilized, though the number of methods utilized by each county and the level of engagement achieved varied. How, and to what extent, counties incorporated input from the general public in the mitigation planning process also varied.
- Capability assessments were largely summative, detailing existing plans and policies, codes and ordinances, administrative and technical positions staffed, and potential funding sources. The vast majority of plans did not identify obstacles for implementing mitigation activities, such as gaps in technical or financial capacity, or plans to address existing capacity gaps.
- Documented collaboration between county teams and departments, annexes, Tribes, and non-governmental organizations (both private and nonprofit) was well represented across plans, but acknowledgment of collaboration between neighboring counties was largely absent.

Theme 1: Risk and Vulnerability

Our literature review established that the ‘identification of natural disaster risk and vulnerabilities of an area’ is a key component of plan usefulness. Our theme “Risk and Vulnerability” reflects this component by exploring how Washington’s coastal counties identify, assess, and prioritize natural hazards. Additionally, codes under this theme explore if and how counties evaluate social vulnerability, and whether understandings of social vulnerability are integrated into broader, comprehensive risk and vulnerability assessments. Evaluating these elements illustrated what coastal counties perceive as their primary threats and how they arrived at those conclusions. The main takeaways from this thematic analysis indicate that while plans are highly detailed about physical hazards, they are limited regarding social vulnerability integration and evacuation logistics:

- Comprehensive but siloed risk and vulnerability assessments: HMPs included risk and vulnerability assessments with detailed and comprehensive hazard descriptions and assessments of the areas exposed to hazards. However, these assessments were often siloed by component (such as identification of community assets, areas exposed to

hazards, or populations with heightened risk to a hazard). Few counties overlay hazard risk maps with the spatial location of identified community assets or socially vulnerable populations.

- **Absence of evacuation logistics:** Clear estimates for evacuation times were lacking across the sample. Only three plans (20%) provided explicit evacuation clearance time estimates, and only two (13%) detailed the methods used to generate those figures.
- **Omissions in sea level rise projections:** With our client, WA EMD, we identified 9 natural hazards for analysis: drought, extreme weather, earthquake, flood, landslide, sea level rise, tsunami, volcano, and wildfire. While the majority of these hazards appeared across most HMPs in our analysis, only four evaluated plans included assessments of areas exposed to sea level rise—a notable omission given that all analyzed HMPs belong to coastal counties.
- **Social vulnerability as a separate function:** While the majority of counties identified determinants of social vulnerability within their plans, few incorporated understandings of social vulnerability in their methods for conducting risk and vulnerability assessments or for determining the risk and priority level of hazards.

Risk and vulnerability assessments: Plans often included extensive hazard risk and vulnerability assessments, outside of social vulnerability. Counties included detailed descriptions of hazard type and past occurrences. In determining the area exposed to identified hazards, counties often used federal and/or state agency sourced data and modeling. Most plans also included the designated priority level of a hazard, with 80% of HMPs also including the method by which they determined the hazard priority level.

Table 1 shows the total number and percentage of plans in which risk and vulnerability codes—excluding those identifying hazard priority level and hazard areas—were applied. Few plans included evacuation clearance times, with only three including estimates within their HMPs and two HMPs including the methods for estimation.

Table 1. Risk and Vulnerability Code Presence in HMPs

Risk and Vulnerability Code Presence in HMPs			
Subtheme	Code	Total Number of Plans	Percentage of Plans
Assessment	Evacuation Clearance Time Estimates	3	20%
Assessment	Exposure of Socially Vulnerable Populations	7	47%
Criteria	Determinants of Social Vulnerability	14	93%
Criteria	Social Vulnerability in Hazard Prioritization	1	7%
Methods	Evacuation Clearance Time Estimate Methods	2	13%
Methods	Hazard Prioritization Methods	12	80%
Methods	Social Vulnerability in Vulnerability Assessment	5	33%

Omission of sea level rise: of the plans included for analysis, despite all being located at least partially on Washington’s Coast, only four counties included assessments of the areas exposed or vulnerable to sea level rise. Two of the counties that included exposure to sea level rise were also the only counties to assign a priority level for addressing the hazard, with both counties classifying the hazard as a “medium” level priority.

Social vulnerability: Counties’ discussion of social vulnerability varied across plans. Fourteen out of fifteen plans reviewed (93%) identified a determinant of social vulnerability, which we defined as “characteristics used to indicate when a group typically has a reduced ability to anticipate, cope with, resist, and recover from a disaster.” While determinants of social vulnerability are largely present across plans, counties often did not identify the location of vulnerable populations and their corresponding risk to a hazard. Moreover, only 33% of plans included social vulnerability as a component of their methodology for conducting vulnerability assessments. This indicates that understanding or assessments of social vulnerability, when conducted, are largely isolated from other plan elements. For example, only one county’s plan explicitly included social vulnerability within its method for determining hazard priority. Table 2 illustrates code co-occurrence across county plans that were coded for “Determinant of Social Vulnerability,” where stars indicate that the county’s plan was coded for both “Determinant of Social Vulnerability” and the code listed in the corresponding row.

Table 2. Code Co-Occurrence by County: Determinant of Social Vulnerability

	County:													
Code:	Clallam	Grays Harbor	Island	Jefferson	King	Kitsap	Mason	Pacific	Pierce	San Juan	Skagit	Snohomish	Thurston	Wahkiakum
Social Vulnerability in Hazard Prioritization					*									
Social Vulnerability in Mitigation Activity Identification	*													
Social Vulnerability in Mitigation Activity Prioritization					*	*							*	
Social Vulnerability in Mitigation Goal Development														
Social Vulnerability in Vulnerability Assessment	*				*				*			*	*	
Social Vulnerability Reduction Key Goal	*				*	*						*	*	

Theme 2: Mitigation Activities

Across the evaluated HMPs a variety of potential mitigation strategies were present, with many counties favoring an “all hazards approach” (i.e. developing mitigation strategies around activities that address multiple hazards). In our analysis, we coded for the four formal types of mitigation strategies defined by FEMA—local planning and regulations, structure and infrastructure, natural systems protection, education and awareness—as well as preparedness and response. Though preparedness and response activities were removed as a formal mitigation activity by FEMA in 2025, this classification of activity still satisfies requirements of FEMA’s Community Rating System and was therefore included for analysis.

The main insights gained through our analysis of mitigation activities were the following:

- All five types of mitigation activities were well represented across the evaluated HMPs.
- Counties consistently addressed most hazards included for analysis through proposed mitigation strategies, with the exception of sea level rise.

Figure 6 (see below) shows the number of HMPs with mitigation strategies that included at least one proposed mitigation activity for each of the identified activity types. The activity types most commonly present across plans were those that fell under local planning and regulations and education and awareness. Activities classified as natural systems protection were the most likely to be omitted from plans, though 11 of the 15 county HMPs reviewed included such activities at least once within their mitigation strategies.

There was some variation in the hazards addressed by proposed mitigation activities. In evaluating which plans included at least one mitigation activity for addressing a given hazard, the most common hazards included across plans were earthquakes, extreme weather, and floods (see Figure 7 below).

It should be noted that some of the plans likely addressed sea-level rise through mitigation activities designed to address multiple hazards or address hazards impacted by sea level rise, such as landslides, coastal erosion, or coastal flooding. However, plans were not coded as having mitigation activities that address sea level rise unless the hazard was explicitly mentioned within the activity included in the plan's mitigation strategy.

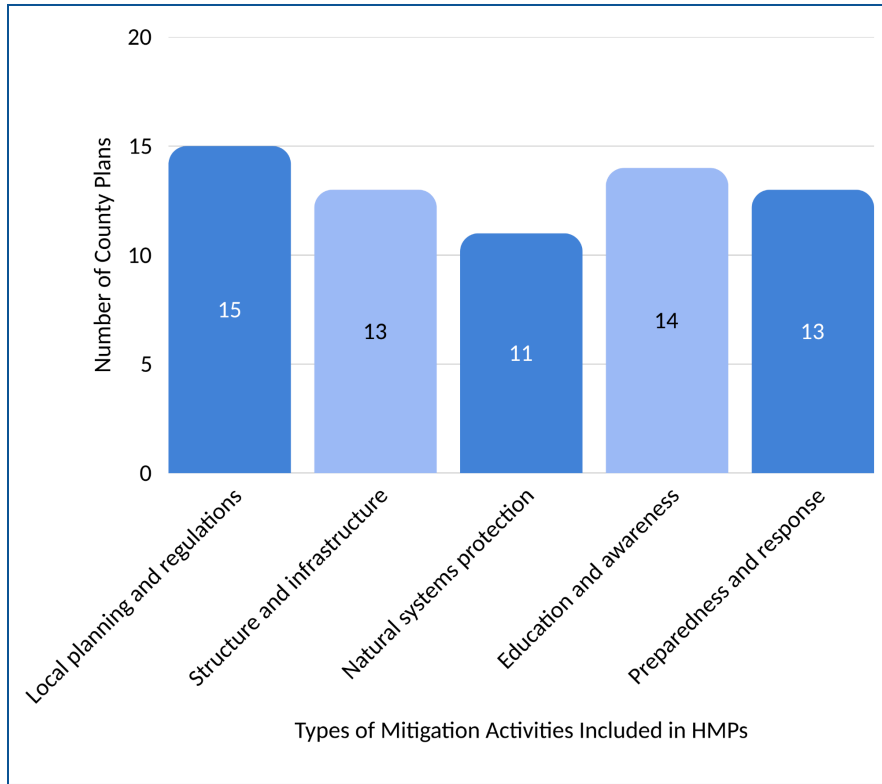


Figure 6. *Types of Mitigation Activities Included Across HMPs*

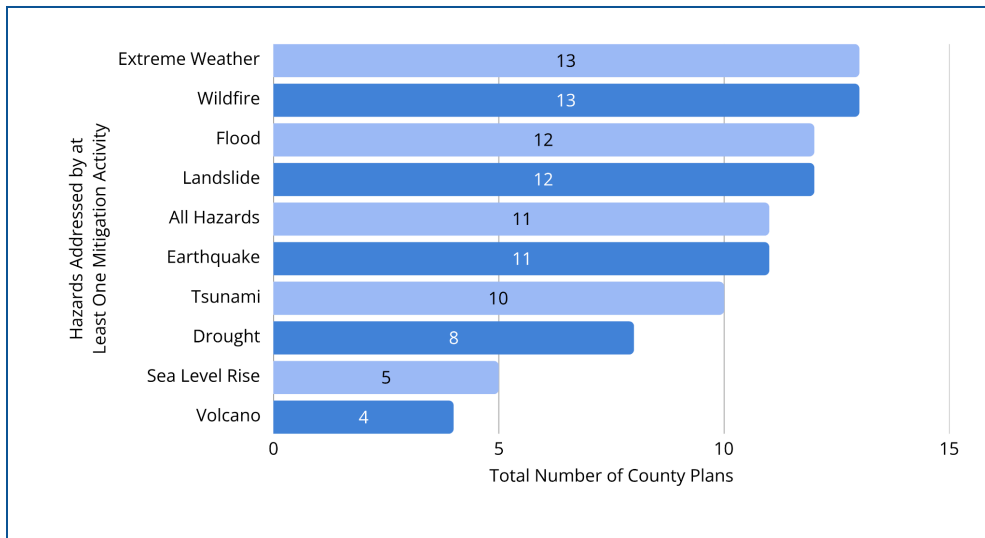


Figure 7. *Hazards Addressed by at Least One Mitigation Activity*

Theme 3: Plan Implementation

In our evaluation of plan implementation, we developed codes that explored implementation processes and the financial implications of carrying out a mitigation strategy. Codes (see

Appendix A) developed to evaluate implementation processes identified whether plans clearly designated implementation responsibilities, included a mechanism for enforcing activity implementation, and what methods were used to prioritize mitigation activities. Additionally, we evaluated the extent to which social vulnerability was incorporated in primary plan goals and methods for identifying and prioritizing mitigation activities for implementation. Codes evaluating mitigation capacity helped to identify trends in county capability assessments, whether counties identified obstacles for plan implementation, and if mitigation strategies included plans to address capacity gaps. The financial implications explored included whether plans identified funding sources for mitigation activities, if funds had been allocated to implement an activity, and the expected costs of mitigation activities. Additionally, this theme explored whether counties cited the use of current or previous HMPs and reasons for HMP development.

The main takeaways of our analysis of implementation were the following:

- Most plans did not include specific details to implement proposed mitigation activities.
- Few plans identified obstacles to implementation and plans to address capacity gaps.
- Only three plans identified that social vulnerability was explicitly incorporated in how the county prioritizes mitigation activities for implementation.
- 10 of 15 plans evaluated indicated that counties are currently or intend to explore means for implementation of mitigation strategies without external funding.

Mitigation strategy implementation processes: The level of specificity of implementation details and processes varied significantly across and within plans. Many plans included broad elements like plan goals and the review of previous HMPs. 80% of the plans explicitly mentioned using their previous HMPs for disaster mitigation, response, or recovery. However, the inclusion of specific implementation steps like cost, timeline, designation of responsibilities, and funding sources was often in general terms. Mitigation strategies were broadly described, with only seven plans including steps needed to carry out a mitigation activity. Most plans included a timeline for implementation for mitigation using general categories like short-, medium-term-, and long-term. Fourteen plans (93%) identified potential funding sources. However, identified funding sources were often lists of various potential sources, many of which included state and federal grants that are not guaranteed. Plans favored listing a large variety of possible mitigation strategies with fewer specific details, rather than using the mitigation

strategy as a practical roadmap for implementing a select, feasible number of mitigation activities.

The reasons for plan development cited within the HMPs also varied greatly. Of the 15 plans included in our analysis, maintaining eligibility for receiving FEMA grant funding was included in 6 of the cited reasons for plan development and 1 plan's sole cited reason for plan development. Other reasons for plan development included promoting sound public policy, promoting partnership, and increasing resilience to disasters.

Social vulnerability was largely not reflected in the implementation plans of the HMPs reviewed. Although 40% of plans included reducing social vulnerability as a key goal, social vulnerability was largely absent from key plan elements. This was particularly evident within the methodology sections. No plan explicitly included social vulnerability within their mitigation goal development and only one plan included social vulnerability in their method for identifying mitigation activities. Social vulnerability was most likely to be incorporated in how counties prioritized mitigation activities for implementation, though only three plans included explicit consideration of social vulnerability within their mitigation activity prioritization methods.

Financial implications of implementation: Ten plans referenced the intent to pursue strategies for carrying out mitigation activities without external funding. Given the uncertain availability of external funding sources, it is unsurprising that some counties aim to find other ways to fund hazard mitigation strategies. This goal was present in 67% of the plans, although many counties added that they had limited local funding available. The ability to carry out a mitigation activity using only local funds was even included by some counties as a metric for determining mitigation activity prioritization. Those that utilized this metric, however, evaluated it as simply yes/no and included no explanation as to what resources were needed to support an activity marked as "no."

A key theme from this analysis was the lack of explicit acknowledgment of current capacity gaps. While plans included a capability assessment, a plan element required by FEMA, to highlight available capacity and the possibility for expanding mitigation efforts, few acknowledged possible limitations. In determining financial capacity, HMP capability assessments largely focused on grant opportunities, such as those distributed by FEMA and from Washington State, rather than local fiscal capacity for hazard mitigation. Additionally, capability assessments largely lacked any acknowledgment of a county's gaps in capacity for implementing mitigation activities or plans to address them. Only four plans (27%) included an assessment of obstacles for plan implementation. Figure 8 illustrates the types of

implementation obstacles outlined in HMPs, with keywords highlighted. Funding availability was a key constraint for counties. HMPs acknowledged difficulties with funding at the local level and highlighted the need for external funding sources.

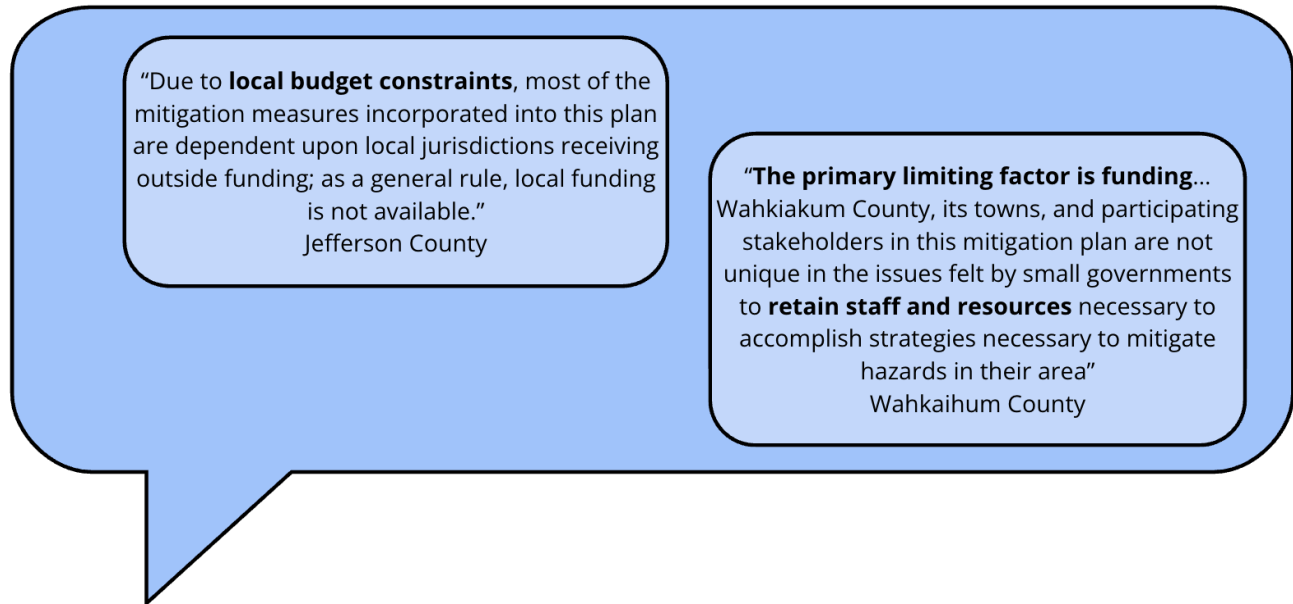


Figure 8. *Examples of implementation obstacles identified in HMPs*

Only one plan cited that a mitigation activity had been formally allocated funding. Three HMPs included a plan to address capacity gaps. Figure 9 (on page 45) illustrates the variety of plans to address gaps. Multiple plans cited sourcing additional funding and resources as ways to address capacity gaps. Clallam and Thurston counties included more comprehensive evaluations of actions that could support hazard mitigation planning, like stakeholder coordination and opportunities through existing mitigation activities. The Thurston County HMP included documentation of a Strengths, Weaknesses, Obstacles, and Opportunities Assessment for planning process partners, as well as a corresponding plan to address each weakness identified.

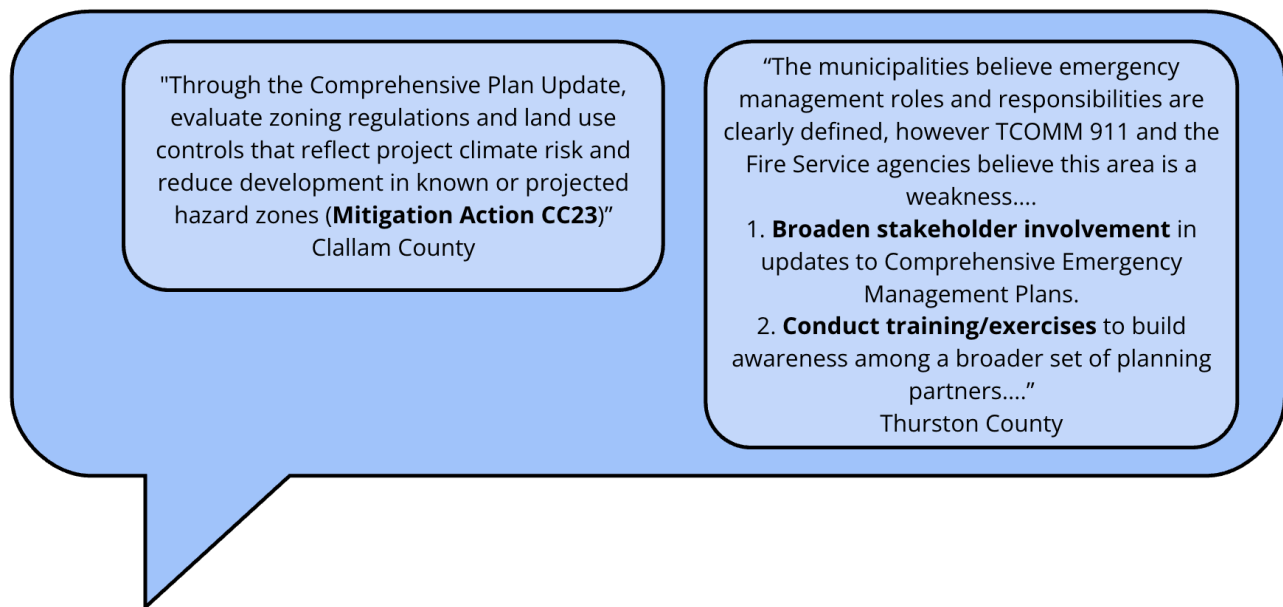


Figure 9. Examples of plans to address capacity gaps identified in HMPs

Theme 4: Public Involvement

In addition to public engagement being a FEMA-required HMP element, our review of existing literature and informational interviews highlighted the importance of meaningful public involvement for strengthening community resilience through mitigation planning. Our analysis examined the methods utilized by counties for engaging the general public, the level of engagement achieved through outreach, and how information received through outreach was incorporated into components of the HMPs. We relied on FEMA guidance and our review of the evaluated HMPs to identify and define public engagement methods.

The key takeaways from our analysis of public involvement are the following:

- A variety of strategies were used by counties to engage the public during the planning process, with mixed success.
- Most HMPs did not clearly outline how, or to what extent, feedback from the general public was incorporated into the development of mitigation goals, risk and vulnerability assessments, or identifying and prioritizing mitigation activities.
- As described in the plans, public surveys were most often utilized to evaluate community perceptions of risk and primary hazards of concern.

- No plans indicated the use of public surveys to identify the assets most valuable to a community in the event of a disaster or generally. Only one plan used public feedback (during a workshop) to identify which physical assets are most vulnerable.

Although the actual level of public engagement varied across plans, the cited use of strategies for generating public engagement in the planning process was largely similar. A variety of public engagement methods were well represented across plans, though some plans indicate that some counties utilized a larger variety of methods. Some plans also included outreach methods that fell outside of the defined codes. Figure 10 (see below) shows the number of HMPs that utilized each identified method of public engagement. All HMPs referenced the use of public meetings, and 13 HMPs referenced using a form of public comment to receive feedback on draft plans. These are important baseline forms of engagement to inform the planning process, though engagement was often limited, with some plans citing as few as six received comments. Many counties referenced the use of news releases, social media, and website engagement to spread awareness of opportunities for public engagement in the planning process. A significant form of public engagement was surveys. Twelve HMPs referenced the use of online surveys and nine referenced paper surveys, with several counties utilizing both. This was the primary way counties gathered more in-depth information from members of the public and incorporated their views into the planning process and HMP elements.

In descriptions of how public input was used for planning purposes, the most common use cited was for developing mitigation activities. Eight HMPs referenced utilizing public feedback to identify mitigation activities, and nine referenced using public feedback to prioritize those activities. The next most commonly cited use of public feedback was to develop mitigation goals, with seven HMPs referencing use for this purpose. Although HMPs referenced the incorporation of public feedback in these areas, there was often no clear description of how the feedback was incorporated or the level of influence it had. Additionally, no plans referenced survey results or public input within any methodology sections—even in the methodologies of plan components they stated incorporating public feedback in. Only a few plans referenced that public feedback was incorporated in planning outside of mitigation activities and goal development. Three plans cited incorporating public feedback in their hazard prioritization, two cited incorporating feedback in their vulnerability assessments, and only one cited including feedback in their asset assessment.

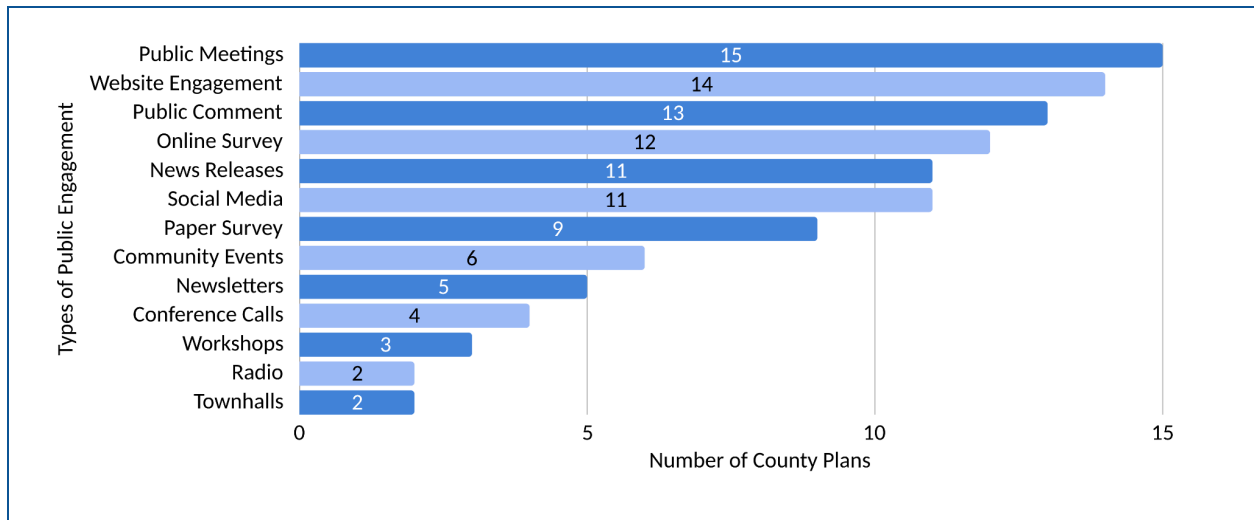


Figure 10. *Types of public engagement included in HMPs*

Although social vulnerability and accessibility public engagement codes were not formally measured during the coding process, in conducting our content analysis, we observed some considerations for public engagement to improve accessibility. Multiple counties noted the inclusion of both paper and online surveys to reach a greater variety of community members who may not have access to the online version. Several counties also noted that communication with the public and engagement opportunities included multiple languages. For example, Kitsap County noted that the surveys were administered in both English and Spanish to include all community members. Similarly, Thurston County administered a survey in English, Korean, Spanish and Vietnamese.

Theme 5: Community Assets

In addition to identifying the types of assets typically included in mitigation planning practices, our analysis of community assets explored the potential for use of the Community Asset Approach in the hazard mitigation planning process. Our literature review highlighted the potential benefits of identifying community assets through public participation, as well as taking an ‘asset-first’ approach to hazard mitigation. This was linked to the ‘strengthening community resilience’ component of plan usefulness, as a Community Asset Approach can better align the planning process and hazard mitigation with community values. The method ensures that the assets a plan aims to protect are those most valuable and useful to the community. The main takeaways of our analysis of community assets were the following:

- No plans indicated that the Community Asset Approach, as defined in our literature review, has been implemented by the counties included in our analysis.
- Most plans' asset, risk, and vulnerability assessments focused on identifying and evaluating the exposure of critical assets and community assets.
- Few plans included the exposure of more values-based assets in their vulnerability assessments, including historic and cultural assets.

The Community Asset Approach was not implemented across the plans reviewed. That is, no plans indicated that the respective county used an asset-first approach, placing priority on important community assets, to guide mitigation planning. No plans included explicit recommendations for annexes to use community participation to identify and prioritize community assets to guide mitigation planning. Additionally no resources for incorporating this approach were provided. Instead, most plan assessments included traditional assets, as defined by FEMA and with planning team input, without the input of the general public.

Our analysis included five different defined asset types, critical facility, community lifeline, historic resource, cultural resource and natural resource. We included 'unclassified assets' in our analysis to capture any assets a county includes but does not specify the asset type.' The types of assets included in HMPs focused on traditional assets essential for the safety and security of the planning jurisdiction. For example, all plans included the exposure of community lifelines to a given hazard, which are fundamental systems and services in a community, like communications, food, and transport. An asset is exposed if the HMP identifies it as vulnerable to a hazard. All plans also included the exposure of unclassified assets, which often included general total building exposure or parcels of land. Fourteen out of fifteen plans also included the exposure of critical facilities. However, assets tied to community values—such as historic and cultural resources—were not included across almost all HMPs reviewed. Only one plan referenced the exposure of cultural and historic resources in its HMP. Additionally, of the unclassified assets flagged, none included assets designated as being of high importance to the community for disaster response and recovery.

Beyond observing evaluation of assets and exposure in practice, our analysis also sought to understand how the Community Asset Approach could fit into the current mitigation planning process and at the county level. To support this understanding, we examined how vulnerability assessment methods discussed the inclusion of asset risk and exposure in relation to hazards. In most plans, asset exposure was not included in vulnerability assessment methods, even if a

discussion of the asset type was included in the actual vulnerability assessment. The exposure of unclassified assets was discussed by 53% of plans within their vulnerability assessment methods. Otherwise, critical facilities and community lifelines exposure were the most referenced within vulnerability assessment methods, included in 53% and 40% of plans. Only 3 plans referenced natural resources within their methods section, despite 12 including them in the actual vulnerability assessments of a given hazard. Our analysis revealed that the Community Asset Approach could be effectively utilized by counties while still satisfying FEMA requirements. However, given the lack of specificity surrounding how asset exposure is incorporated into vulnerability assessments, it is difficult to evaluate the feasibility of employing the Community Asset Approach at the county level.

Theme 6: Fostering Partnership

Through our literature review, we identified ‘fostering partnership among all levels of government’ and ‘development or strengthening non-governmental and private partnerships’ as two components of plan usefulness. Our major theme ‘fostering partnerships,’ reflects these components and is analyzed by evaluating the types of partnerships cited across HMPs and the methods used to promote collaboration. Through our literature review and the iterative theme and code development process, we identified the following collaborative entities for analysis: annexes; internal collaboration across county teams, departments, and agencies; nonprofits; Tribal entities; local businesses; universities; neighboring counties; and local community-based organizations. Collaboration between counties, Washington State, and the federal government was identified according to technical assistance provided by the State and federal agencies and integration of local planning with the State’s Enhanced Mitigation Plan and existing FEMA programs and initiatives.

The main takeaways of our analysis of fostering partnership were the following:

- Plans mentioned many different partnerships that shaped the planning process and development of the HMP.
- The level of detail in descriptions of these partnerships varied across plans. Most did not include details about specific partnerships but did identify partnerships and the themes of contributions from partners in general.
- Cited partnerships with neighboring counties were limited.

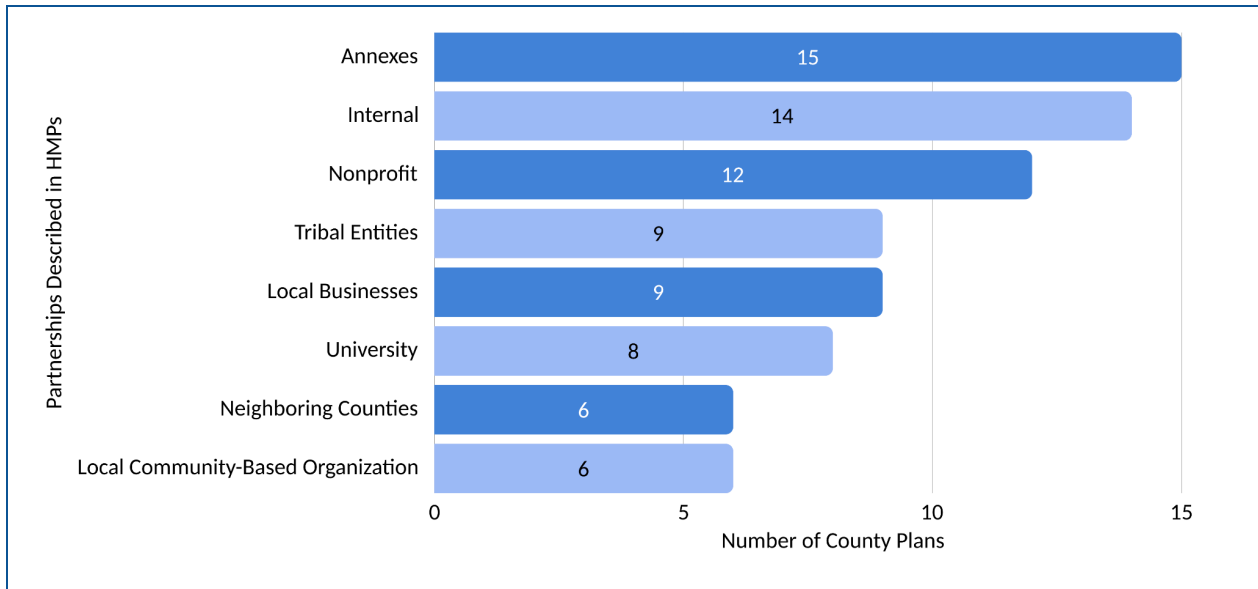


Figure 11. *Types of partnerships described in HMPs*

Figure 11 shows the number of HMPs in which each of the defined partnership types is mentioned. Most plans mentioned partnerships within county agencies and other local jurisdictions. All 15 counties included descriptions of collaboration with HMP annexes. Fourteen of the counties mentioned internal collaboration between different departments within the county government. Many counties also included some collaboration with universities, and a little over half identified a partnership with nonprofit organizations.

However, the number of these collaborations varied widely across HMPs. Some plans referenced these collaborations through HMP steering committees. These collaborations were described in more detail, with some plans including detailed records of stakeholders present for meetings and how meetings contributed to HMP development. Contributions included input for hazard prioritization, identification of critical facilities, and mitigation activity identification. In other cases, plans did not include any specific, explicit details of the collaboration that occurred internally or externally.

Despite expressing the value of information sharing, few HMPs cited partnerships with neighboring counties. Only 6 plans referenced collaborating with neighboring counties, with most as broad references. Nine of the plans, or 60%, referenced collaboration with Tribes. However, this most often included general references to Tribal entities. Often, these collaborations were not described, and HMPs did not explicitly reference Tribal perspectives.

There was a mixed inclusion of local perspectives, with 60% of plans referencing collaborating with local businesses and 40% referencing local community-based organizations.

All HMPs outlined the importance of support from Federal and State agencies. All 15 plans included the use of both State and Federal technical assistance. This included direct personal input from Federal and State agency staff, as well as data, modeling, and guidelines. Twelve of the plans also referenced the use or consideration of the WA State Enhanced HMP. All plans also referenced some form of integration with current FEMA mitigation programs.

4.2 Findings from Content Analysis of Interview Transcripts

To maintain core alignment between our coding schemes and bridge the two datasets, our qualitative analysis of the interview transcripts utilized the same thematic framework as the HMP content analysis (see Section 3.4.3). Coding for the six major themes –risk and vulnerability, community assets, general public involvement, plan implementation, mitigation activities, and fostering partnership– across both sources gave us insight into our Research Sub-Question 1, “How do we define usefulness in the context of hazard mitigation planning?”

To explore Research Sub-Questions 2 and 3, which seek to understand the real-world barriers faced and resources available to county hazard mitigation planners, we added two additional codes to the content analysis of interview transcripts: 1) Planner Barriers and 2) Resources for Planners. This deliberate addition to our analytical framework reflects the notable difference in analyzing a statutory document compared to the lived planning experiences of those who author them.

Major Takeaways Across the Six Major Analytical Themes

Each county conducts hazard mitigation planning with its own strategies and methods, reflecting the diverse resource availability, geographical makeup, and communities across the coastal counties studied. Across the six major themes utilized in the HMP content analysis to measure components of plan usefulness (see Section 3.4), major themes emerged in the interviews that hold important and insightful implications for HMP authors.

Figures: The following figures present excerpts and quotes from responses to the interview questions. The sub-theme occurrence arrows indicate how many times a quote occurred in the coded excerpts. A complete list of supporting quotes, organized by theme, can be found in Appendix E. Quotes and Themes from Coded Interview Response.

Theme 1: Risk and Vulnerability

Across interview participants, risks and vulnerabilities were characterized by sub-themes of context-based ad hoc methods, reliance on external guidance, and varying linkage of integration into decision-making actions. Participants discussed informal and context-standardized approaches to risk analysis, primarily shaped by FEMA requirements and data availability, but also influenced by perspectives from consultants, collaborating jurisdictions, and partners. Risk and vulnerability assessments often took an all-hazards identification approach, but sometimes struggled to drive specific mitigation activities. Multiple respondents note that mitigation actions stem from existing projects or partner activities, and not solely the assessments. This may indicate a gap between the applicability of current guidance and the methods for converting risk assessments into outputs such as mitigation actions. Leading planners to rely on contextual judgment over official processes.

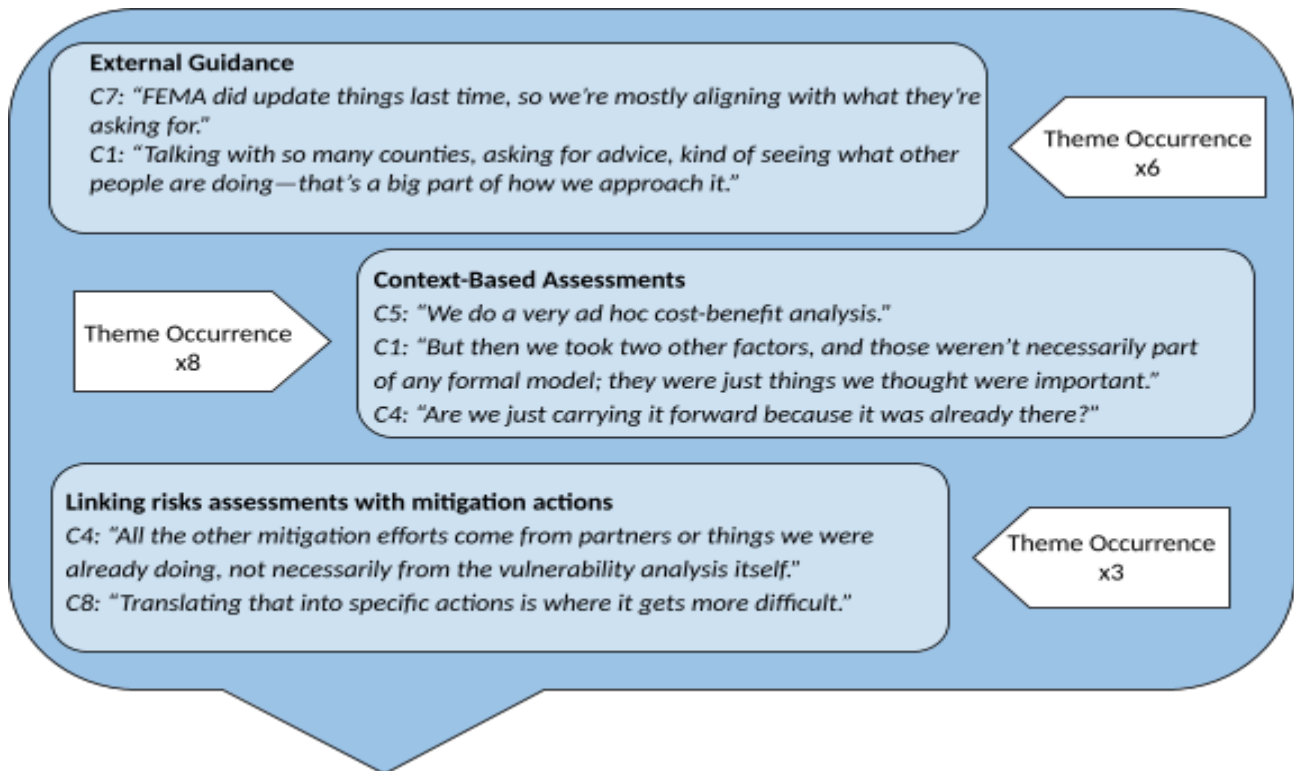


Figure 12. Risk and Vulnerability Themes in Interviews

Theme 2: Mitigation Activities

Interviewees described hazard mitigation activities as shaped by continual processes, partners, and constraint-driven prioritization. Participants described processes where actions were carried out across planning cycles with limited re-evaluation. Partner involvement, along with real-world events, helped reveal practical considerations and feasibility, influencing the realities of the risk and vulnerability drivers. Mitigation activities existed within institutional and operational contexts and historical events, and were coupled with the outputs of the analytical planning process. There are multiple links to the research question under the mitigation activities section. Difficulty in ranking and prioritizing mitigation actions and the ability to track actions across planning cycles are both areas that planners point to as barriers. As well as attention to mitigation activities that have varying timelines and ways to ensure outputs of those activities are factored into plan updates.

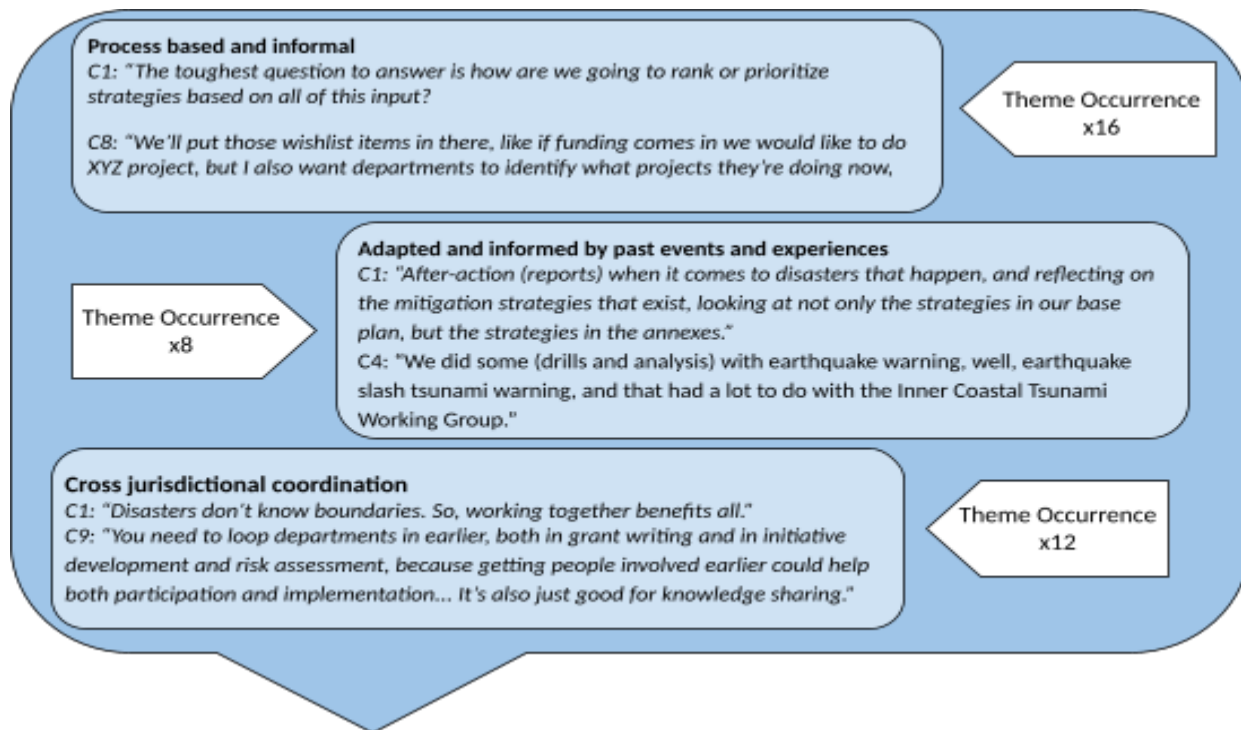


Figure 13: Mitigation Activity Themes in Interviews

Theme 3: Implementation

Interviewees discussed how hazard mitigation actions or projects were implemented in a largely opportunistic manner; they were heavily reliant on local partners, and the link between plan priorities varied depending on capacity. When it comes to implementation, HMPs largely function as reference documents and not strict operational guides, with current events, funding cycles, and institutional constraints shaping the outcomes of a project. In implementation, counties report that actions are taken when funding becomes available, and that an HMP is consulted to see “what might fit that opportunity.” Implemented actions and projects are often adapted or only partially aligned with what is written in the plan. Tools for aligning plan priorities with funding opportunities and best practices for how to ensure plans are “shovel-ready” are key connections with the research questions.

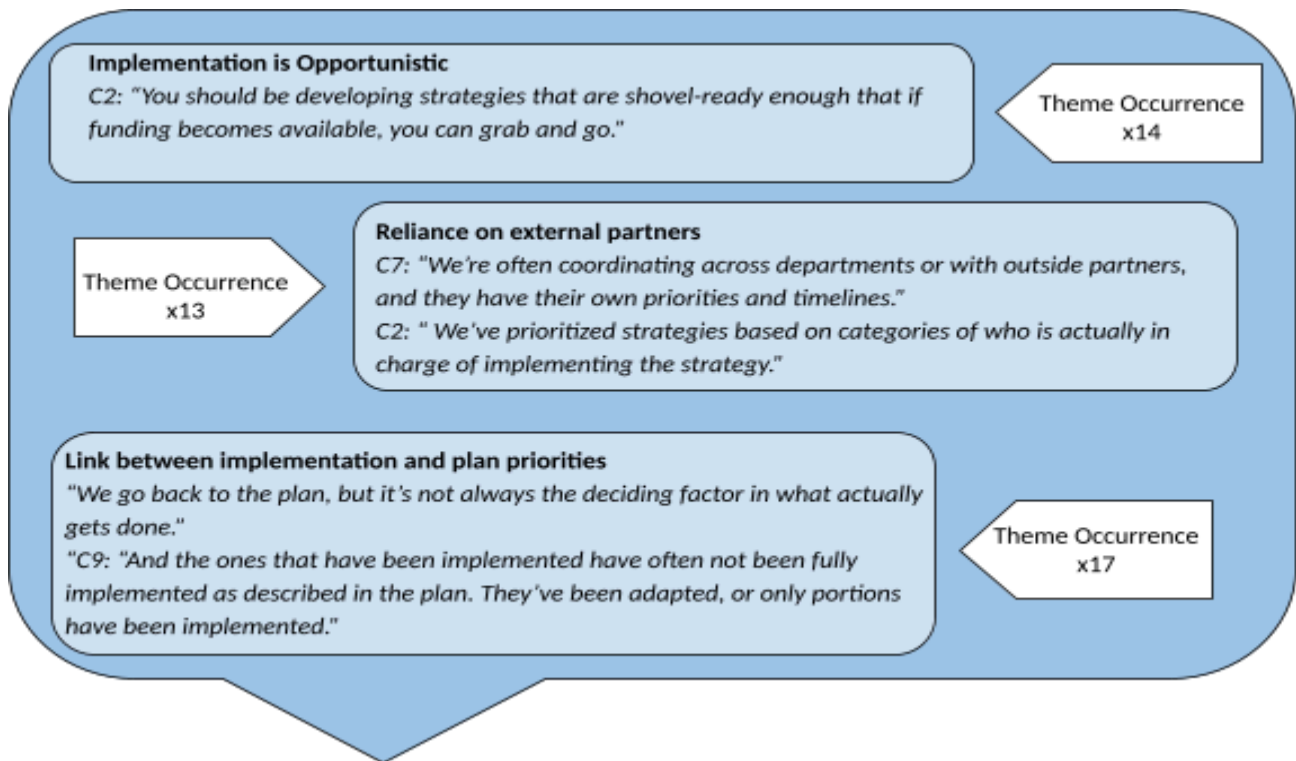


Figure 14. Implementation Themes in Interviews

Theme 4: Public Involvement

Interview participants discussed public involvement in hazard mitigation planning as constrained by capacity and procedural form, and commonly reactive. Public engagement in the planning process was centered on facilitated public meetings, as required by FEMA. Outreach and participation were limited, with the exception of when community members felt directly affected or concerned about hazard events. This, coupled with capacity constraints, created challenges to implementing public feedback. Public engagement is described as late-stage, presentation-focused, and often reactive to hazard events, with staff noting that outreach is time-consuming and does not always produce meaningful input. Best practices and education are often cited as resources to assist in public participation.

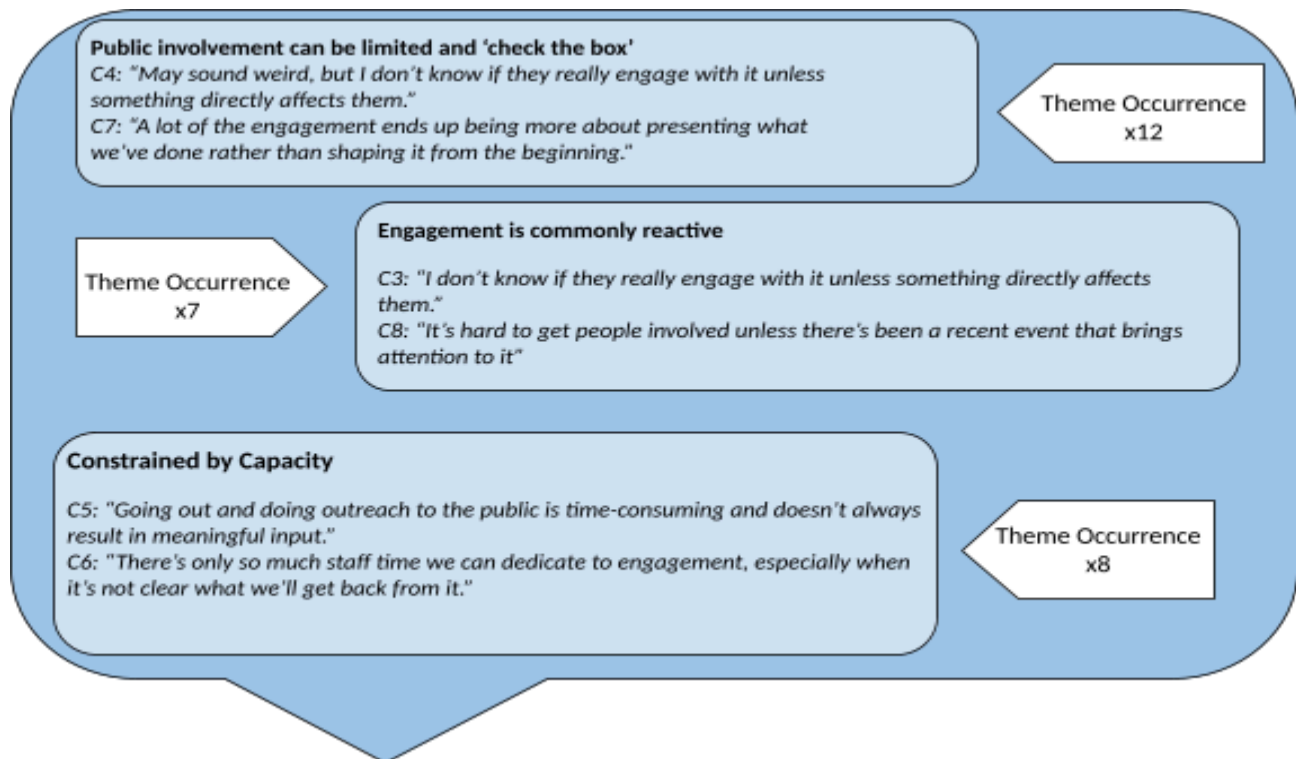


Figure 15. Public Involvement Themes in Interviews

Theme 5: Community Assets

Content from the interviews showed a limited connection to the theme of the Community Asset Approach in hazard mitigation planning. When discussed, participants noted that HMPs don't typically highlight community assets in detail, with community assets operating outside of the current plan frameworks through other plans and medians.

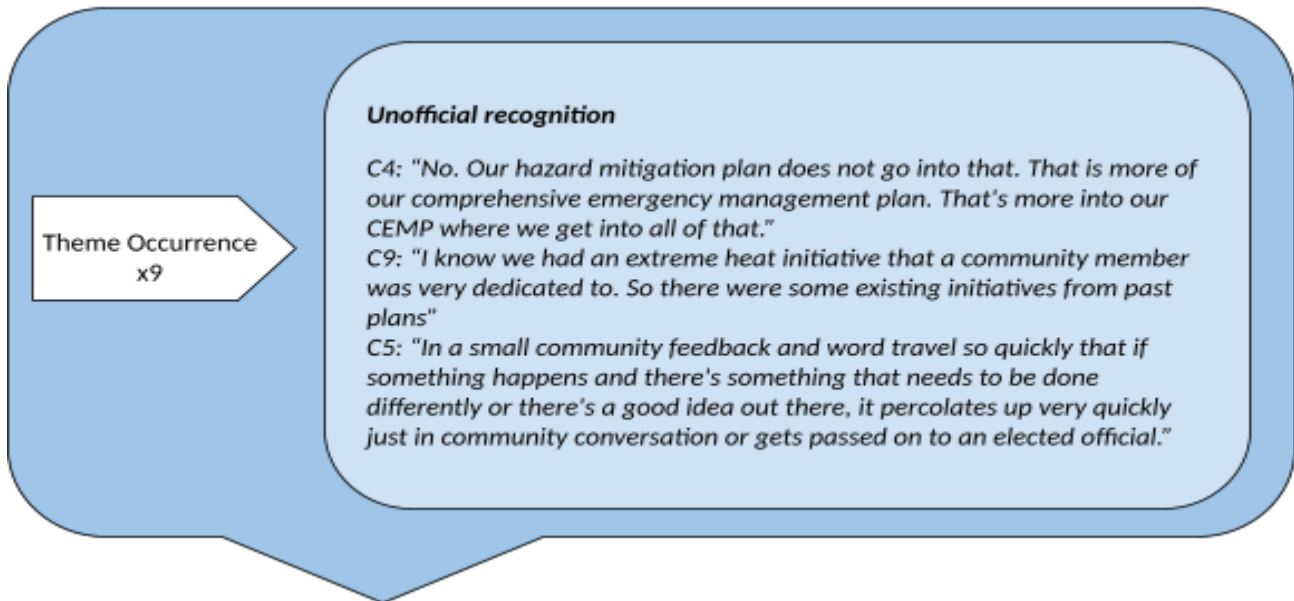


Figure 16. Community Asset Themes in Interviews

Theme 6: Fostering Partnership

Participants discussed partnerships through relationship-based engagement, continual coordination, multi-stakeholder collaboration, and defined formal partnerships in HMPs. Partnerships are an active process involving direct engagement with jurisdictions, communities, subject matter experts, and other stakeholders, played out through group meetings, one-on-ones, and knowledge sharing. Partnerships extended across county lines, agencies, and private entities. Collaboration with partners is central to HMPs, with individual relationships often acting as their catalyst and sustainer. Respondents emphasize continual coordination, one-on-one engagement, and relationship-building, but also note limited involvement of certain actors, such as private entities, and reliance on informal processes.

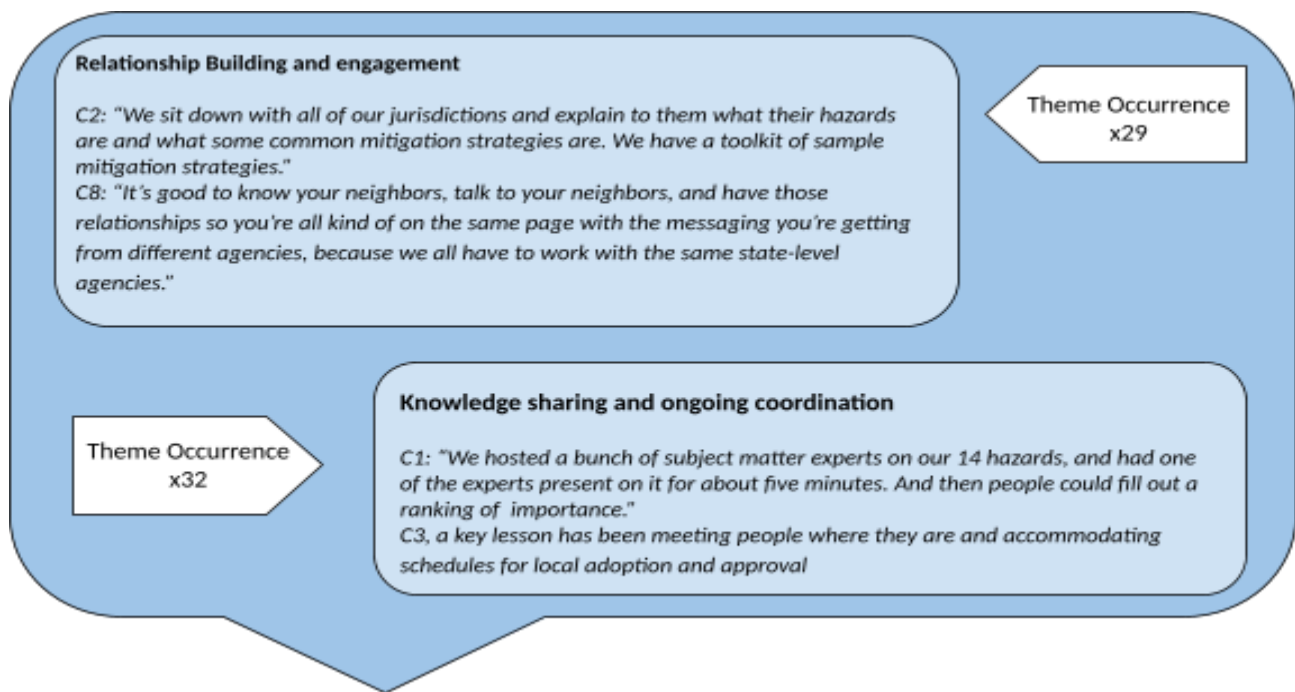


Figure 17: Fostering Partnership Themes in Interviews

4.3 Planner Perspectives on the Components of Usefulness

Figure 18 presents results from the 1-question, post-interview survey (C1–C9) asking how planners rate the importance of the components of usefulness created for our analysis. Respondents evaluated the seven functional elements of HMP usefulness on a scale of 1 to 5, including risk identification, strategy prioritization, implementation, intergovernmental coordination, partnership development, community resilience, and cost reduction.

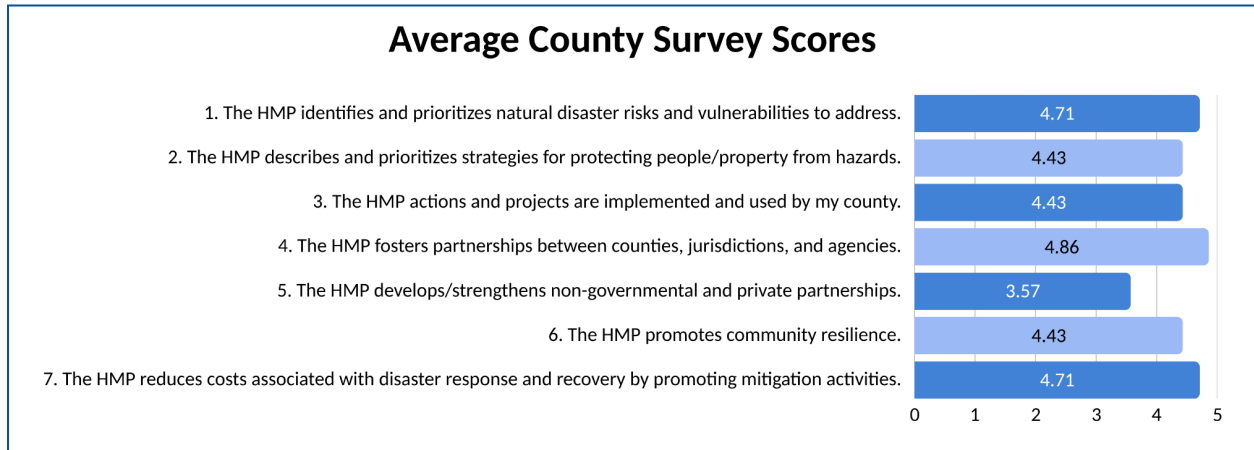


Figure 18. *Planner Survey Results Overview*

Across counties, there was consensus around the importance of action-oriented components. Risk identification and prioritization, strategy development, and community resilience of actions/projects consistently received the highest scores. This may support the idea that the planners interviewed perceive HMPs as a decision-support and action-guiding tool that goes beyond just a compliance document.

Other valued components include interjurisdictional coordination and implementation, with most counties rating these as 4 or 5. Greater variability appeared in partnership development (non-governmental/private) and cost reduction framing, with some counties assigning lower importance. This may suggest uneven integration of external stakeholders and economic framing, likely reflecting differences in local capacity, resources, or planning norms. One outlying county shows systematically lower scores across categories, which may indicate capacity constraints or a more compliance-oriented approach.

The survey operates as a reality check on our component framework, validating its core structure while also highlighting where additional guidance could be provided to bridge the gap between scholarly planning theory and planner practice.

The prioritization of risk identification, strategy development, community resilience, and implementation provides practitioner support for the components identified in our analytical framework. These elements were both present in plan documents (per HMP content analysis) and affirmed by practitioners as important to real-world use. The alignment of this empirical data instills confidence that these components are valid and relevant anchors for “useful” HMPs.

Components with greater variability, such as non-governmental/private partnerships and cost reduction, show where our framework may be rooted more heavily in theory or operationalized in practice unevenly. Inconsistent importance ratings do not necessarily invalidate the components, but could suggest that planners may lack the tools, capacity, or incentives to fully integrate them in the planning process. In this sense, the survey helps tease out components that are conceptually important and those that are viewed as practical and actionable.

4.4 Barriers for Planners and Emergency Managers

Our analysis also sought to explore the experience of planners creating HMPs. Planners were asked to identify common barriers that impede their county’s hazard mitigation planning. Their replies covered a breadth of challenges. To help identify core causes and common themes among barriers, we categorized them into one of five umbrella themes:

1. Institutional Capacity & Resource Scarcity
2. Administrative & Regulatory Friction
3. Implementation & Alignment Gaps
4. Stakeholder & Public Engagement Barriers
5. Data Challenges

Table 3 outlines the identified barriers, organized within their umbrella themes. It also includes a sampling of interview excerpts that highlight planners’ experiences with HMP planning. Additional illustrative quotes are included in the text that follows. See Appendix H for a complete table of interview quotes about planner barriers.

Table 3. Barriers Reported by Planners during County Interviews, including Quotes (coded by County, C1-C10)

Barrier Umbrella Theme	Barrier Identified	# of Counties Reporting Barrier	Sampling of Quotes from Interviewees, coded by County
1. Institutional Capacity & Resource Scarcity	High turnover and lost institutional knowledge	4 (40%)	C8: "What I inherited was kind of cryptic." C7: "[The HMP] was a student product, and the county did not maintain, for whatever reason, any of the data that went into it."
	Gaps in staff skills or knowledge of specialized content for HMP	8 (80%)	C5: "The skill that a lot of emergency managers probably don't have is getting everyone in the room together, getting the conversation going, and providing enough structure that you really have a good process." C7: "Not having done any GIS, I didn't know how much they needed to update. ... I'm learning a lot. I guess I know about plans, but not having dealt with GIS, it's a whole new world."
	HMP planning-related funding constraints	5 (50%)	C8: "[When our approved] BRIC grant for \$500,000 [...] was canceled by the current administration, [...] I had zero budget, so what I did was piggyback on every other department's projects."
	Time constraints	8 (80%)	C5: "In the past when we've done updates, we've just been like, let's just get this thing to the point where it's going to get approved and get it out the door and not really worry about how useful or appropriate it is for our community."
2. Administrative & Regulatory Friction	Shifting federal requirements	7 (70%)	C4: "The crosswalk between what FEMA wording wants and how I can then build that into something that can be utilized and understood and put into action at the local level is difficult [...], especially since FEMA and federal agencies change what they're expecting. ... It's the changing requirements that are the hardest to keep up with, especially between FEMA and what the city or the county says they're willing to do and can do."
	Maintaining separate planning requirements	2 (20%)	C9: "There's also the issue of maintaining separate planning requirements, like our separate flood planning tied to the community rating system. That program is kind of at risk now too, so having these extra things and needing to wrap them into our hazard mitigation plan is a challenge."
	Iterative review inefficiencies (revisions loop)	2 (20%)	C1: "[To be] part of our annexes, [the jurisdiction] need[s] to adopt their annex and they need to send an adoption letter to us, which then we'll send to the state, which will then be sent to FEMA, and then back to the state, and then back to us. Then we'll send it back to the annex. ... That adds months onto things."

3. Stakeholder & Public Engagement Barriers	Partner engagement exhaustion	3 (30%)	C8: "Even just within my department, we had the Hazard Mitigation Plan, the Community Wildfire Protection Plan, the Countywide Emergency Management Plan being updated at the same time, and we had the countywide climate resiliency plan too. ... we're all doing our different planning efforts, usually with the same stakeholders."
	Lack of incentives for annexes	2 (20%)	C1: "For [our jurisdictions' writing annexes], the struggle that we really have is, from a good point in their perspective, why do I need to write this plan? I have a CMP, and I feel like we're just regurgitating words and putting it into this so that [we] could be eligible for a grant that [we]'re probably not going to get."
	Public participation challenges, lack of interest/ineffective	5 (50%)	C5: "There's a lot of noise and perception around what needs to be done. I don't want to minimize public involvement because I think it can be important. But recently it's almost more like group therapy than it is productive engagement."
4. Implementation & Alignment Gaps	Misalignment of federal req's and local needs	5 (50%)	C5: "I think where we often struggle in emergency management, and it's not unique here, is the one-size-fits-all approach."
	HMP as planned vs. in practice	1 (10%)	C7: [After an emergency dam breach alarm was accidentally tripped by a private company doing construction:] "The towns downstream were like, is this real? ... They're calling 911. 911 didn't really know about the system. Then they're trying to talk to the emergency management folks who are now trying to call the dam folks, but the number that they have is not the people who are actually at the dam. So there was a period of time where a lot of people were highly stressed, thinking they're about to be inundated with this huge wall of water, and nobody's able to give information. Also, we realized that the company, because this happens to be a private industry, wasn't taking it seriously. They weren't putting anything out publicly, nothing on their webpage, not actively contacting 911 to say it is a false alarm."
5. Data Challenges	Gathering the wide variety of subject matter expertise needed	5 (50%)	C7: "We're just going to do a basic update. We have a preliminary floodplain update that FEMA gave us...Then we have a new report on the hazards from the USGS, but that's not final. DNR is going to have new wildfire mapping coming out, but probably not until this summer. [Our] County had a consultant come in and do climate change coastal and riverine sea level rise analyses, but all the coastal folks haven't agreed to which of the three scenarios will be used."

Barrier Theme 1: Institutional capacity and resource scarcity

All ten counties identified institutional capacity and resource scarcity as primary barriers to hazard mitigation planning. Among them, eight counties specifically reported that gaps in staff skills or knowledge of specialized content for HMPs hindered their planning efforts. Four counties identified high turnover within their emergency management departments as a barrier, which correlated with a significant loss of institutional knowledge. This loss, in turn, created inefficiencies for future planning cycles and further strained already limited resources. Eight counties identified limited time and money as primary barriers, underscoring the difficult position of planners who require additional support but lack the necessary funding to secure it. Quotes from their interviews are included in Table 3, above.

zero progress on it for three and a half years. So what I wish would have happened and

Barrier Theme 2: Administrative and regulatory friction barriers

Moreover, almost all counties (eight) raised administrative and regulatory friction barriers. Highest among these were FEMA's shifting federal requirements for passing HMP review, namely their removal of language around climate change and vulnerable populations, as well as their overall increased stringency for details. One larger county highlighted that general communication and HMP reviews were hindered by the same rigid chain of command. The requirement to route communication and the HMP through multiple layers—from the local level up to County then State then FEMA, and back—created a time-consuming, murky and fragmented loop that further strained limited resources. This county's remarks reflect other

challenging when your local jurisdiction is just trying to squeeze this in amongst lots of

counties' wishes for annexes, and themselves to have a direct line of communication with FEMA instead. Two counties also reflected upon the challenges of providing and receiving feedback on HMPs due to software limitations between partners and jurisdictions.

Barrier Theme 3: Stakeholder and public engagement challenges

Stakeholder and public engagement barriers were the third most common types of barriers for HMP planners. While recognizing it as an important part of the HMP planning process, five (half of the) counties mentioned that public engagement required a heavy lift and offered

"Unless people from the public are impacted by some of these hazards, they're going to be less likely to have it feel like it's a real thing to them."

-Planner from County 3

little reward. All made sure to offer a variety of options for public engagement, but anticipated little to no return on effort. A few counties also highlighted that their partners are often involved in several planning processes for the same county, which can lead to partner exhaustion.

Barrier Themes 4 and 5: Gaps in implementation and alignment, and data challenges

our plan. There are hundreds of pages of factual details that nobody cares about. And yet, if I didn't put

Finally, HMP planners discussed a variety of barriers around gaps in implementation and alignment, as well as data challenges. Notably, five (half of the) counties mentioned misalignment of federal requirements and local needs, and five (half of the) counties discussed the challenges of gathering data around so many subject matters. The large amount

of data needed to prepare HMPs, as well as the variety within that data, presented significant challenges for many counties. In addition to not knowing what information to gather (coded under Barrier Theme 1, Institutional Capacity & Resource Scarcity), planners reported barriers around knowing who to contact for that information and collecting the information itself, such as which information to use when jurisdictions disagreed.

4.5 Existing Resources Identified by Planners

In spite of significant administrative burdens, coastal county HMP planners must navigate the daunting and legally mandated task of developing and updating their Hazard Mitigation Plans. To understand how jurisdictions manage this complex process, we asked them to identify key resources that support their work. Their insights reveal that planners rely heavily on pre-existing

templates, peer networks, and external capacity-building partnerships, particularly with other counties and the WA Emergency Management Division, to get their plans written. Rather than “reinvent the wheel,” planners instead openly share, adapt, and replicate established frameworks with each other. This collaborative approach is a critical mechanism for reducing administrative burdens and expanding local planning capacity.

Our analysis identified 6 main resource themes that shape how local hazard mitigation planning is operationalized. For interview quotes and a list of specific resources, see Appendix I.

- 1) Templates, checklists, and functional plagiarism: Rather than drafting documents from scratch, planners heavily rely on successful HMPs from peer counties and standardized toolkits. Interviewees emphasized that adapting existing frameworks is a vital strategy for maximizing efficiency and dealing with capacity restrictions (e.g., C4, C10). In addition, using internal progress checklists and timeline charts, such as Gantt charts, was a tactical tool for keeping planning partners aligned (C6).
- 2) Stakeholder engagement and public outreach: Capturing diverse input is essential to creating a community-oriented, living document (C3). Planners use collaborative, highly visual techniques, such as whiteboard brainstorming and dot-voting systems, to democratize the project prioritization process with partners and the public (C5, C10). For public outreach, rural counties are more likely to maximize their limited resources by embedding themselves into existing community events and spaces. One county planner recounted tabling at a popular county fair, next to a check-in location for people with limited mobility, which gave them access not only to their general population, but also to a vulnerable sub-set of folks who might have a harder time having their voices heard otherwise (C10). This county also designed the introduction section of their county’s hazard mitigation plan to be concise and jargon-free, with the specific intent of it being an educational tool for public consumption.
- 3) Peer learning and partnerships: Inter-county communication serves as a real-time reality check during planning and update cycles. Planners often consult neighboring counties that are further ahead in the planning process to exchange organizational layouts and baseline data (C8). In addition, a creative partnership with a university course allowed one county to successfully manage heavy research and writing loads, resulting in a thorough hazard mitigation plan.
- 4) Integrating HMP into broader planning & operations: To prevent HMPs from sitting on a shelf as mere compliance documents, innovative planners intentionally tie mitigation planning into broader planning frameworks. This includes using the HMP to satisfy the required climate resilience elements of local Comprehensive Plans under the Growth

Management Act (C10), and embedding hazard-screening protocols directly into Capital Improvement Programs to ensure that future infrastructure projects are systematically screened for hazards (C8).

- 5) Technical assistance from FEMA & state: Technical support from the state helps counties decipher complex federal guidelines. Counties rely on it to bypass administrative bottlenecks (C4) and actively participate in structural forums, such as WA EMD open office hours and steering committee meetings, to align their drafts with shifting FEMA evaluation metrics (C1, C5, C6).
- 6) Knowledge management and institutional continuity: Due to high staff turnover in emergency management, preserving institutional and historical knowledge is critical vulnerability and essential to increasing administrative efficiency. Planners mitigate this by writing detailed, forward-looking comment sections and five-year tracking matrices into the plan text to document ongoing project statuses for future staff (C1, C7). Cultivating relationships with retired staff who possess deep institutional knowledge can also serve as a helpful tool for new planners who are onboarding.

4.6 Requested Resources Identified by Planners

Planners were also asked to identify non-financial resources that the State could provide to help counties overcome their administrative and planning challenges, such as GIS support, templates or centralized dashboards. Our analysis identified the following six primary resource themes that planners wish the State could support. For a complete list of the specific resources requested, with quotes from the interviews, see Appendix J.

- 1) Templates. Planners across counties consistently wanted tried and tested starting points for their own HMP. These included vetted HMPs, mitigation strategy toolkits, risk assessment templates, meeting facilitation guidelines, and best practices documents. The common thread among them is reducing the burden of building an HMP from scratch, especially for smaller and under-resourced jurisdictions navigating FEMA's changing requirements.
- 2) State & FEMA process support. Planners requested clearer, hands-on guidance from WA EMD and FEMA throughout the HMP planning lifecycle. Specifically, they wanted help understanding what reviewers are actually looking for, the ability to submit plans in sections for early feedback, and state staff assistance with shepherding plans through the FEMA review process.

- 3) Training and education. Planners would also like to see structured learning opportunities at a variety of levels, from overview courses for planners new to hazard mitigation, workshops on specific mitigation strategies, and even K-12 programs to build long-term community hazard literacy.
- 4) Technical and subject matter expertise. Planners need access to a slew of specialists they usually can't afford to hire internally, in order to draft and advise on plan content and gaps, and requested that WA EMD assist with finding and providing those specialists.
- 5) Assistance with stakeholder engagement. Planners asked for resources that keep partners engaged over time to make the HMP a living document rather than a one-time compliance exercise. This included guidance on community engagement best practices and advice for getting partner help in updating plans between update cycles.

CHAPTER 5: DISCUSSION & CONCLUSION

5.1 Discussion of Research

Washington's coastal counties face increasing risk from natural hazards, but the planning process meant to reduce that risk is often constrained by limited staff capacity, uncertain funding, changing requirements, and uneven access to technical support. In Chapter 1, hazard mitigation plans are framed as necessary documents for reducing loss of life, property damage, and economic loss, while recognizing that counties can lack the resources needed to create plans that are both FEMA-compliant and useful. Through our literature review and informational interviews, we defined a useful plan as one "capable of being used in a manner serviceable to reducing disaster loss and breaking the cycle of disaster damage, reconstruction, and repetitive damage." This definition of usefulness goes beyond compliance. A useful HMP not only passes review, but is also capable of guiding decisions, supporting implementation, strengthening partnerships, and helping counties reduce long-term disaster risks. This framing shifts the evaluation of an HMP from a checklist of FEMA-required sections, to an assessment of how well those sections operate together as an actionable planning tool.

Our research found that county HMPs generally contained the major sections required by FEMA, such as risk and vulnerability assessments, mitigation strategies, documentation of public involvement, and descriptions of partnerships. However, the level of detail and usefulness of plans varied. Implementation details were often included only in general terms, like a long-, medium-, or short-term timeline, or not at all. These results support Feinberg & Ryan's (2020) findings that many local-level hazard mitigation plans in Washington State lack implementation details. Planning was often siloed; plans contained excessive descriptive hazard information, but the connection between risk assessments and mitigation actions was not always clear. HMPs often did not clearly describe how risk assessment findings led to the identification and prioritization of mitigation actions. These findings reflect a difficulty translating information into action, or fact-based information into policies, which Lyles et al. (2014) highlight as a key component of effective hazard mitigation planning. Without a clear identification method or detailed implementation steps, an HMP may struggle to justify why projects are selected, why some hazards are prioritized, or how limited resources should be allocated. For planners, these gaps compromise the plan's value as a decision-making tool.

The planner interviews support these findings, describing HMP implementation as opportunistic, primarily shaped by funding windows, partner capacity, existing projects, and

staff availability and knowledge. HMPs often operate as reference documents, as opposed to operating guidelines, reviewed by counties when funding opportunities appear or when partners have capacity for related projects. This could suggest that plan usefulness is connected to how well counties are positioned to act when a policy window opens or a funding opportunity arises. An HMP that includes operational details like specific responsible parties, timelines, cost estimates, funding sources, project status, and clear links to other plans is likely to increase the implementation of mitigation actions. These characteristics support the idea that a useful HMP is a living document with “shovel-ready” elements, allowing counties to act quickly and effectively when opportunities arise. These findings echo the implementation principle of hazard mitigation plan quality outlined by Lyles et al. (2014) and Berke et al. (2012).

Our literature review identified partner and stakeholder participation and coordination as key characteristics of successful hazard mitigation planning. Our findings confirm that partnerships are central to HMPs. They can show up as informal, interpersonally relationship-based, and unevenly documented across the studied counties. This emphasizes the need to support county-level planners operating with limited local resources and capacity. Planners often rely on state staff, consultants, subject matter experts, local departments, and jurisdictions to gather information and promote projects. The county plans sometimes discuss these relationships, often through steering committees, but do not include details about the individual contributions, partnerships, and their importance. This creates a disconnect between how hazard mitigation planning works in practice and how that work appears in the final document.

A similar gap appears between public involvement and community assets. Chapter 2 lays out that a useful HMP serves the whole community and addresses the limits of relying solely on vulnerability indices or technical assessments for determining risk. The ‘community-asset approach’ is one way to incorporate public participation directly into the planning process and empower communities (Freitag, 2014). This approach helps planners understand what communities value and need in the face of a hazard event. However, our research showed that despite the benefits outlined by Freitag et al. (2014), the ‘community-asset approach’ was not utilized in the HMPs of coastal counties in Washington State.

Public engagement is often documented in HMPs, reflecting an awareness of the importance of community participation consistent with Pearce’s findings (2003). Some plans also acknowledged the importance of developing a public engagement plan that considers its audience and accessibility. Although not formally included in the codebook, we observed that some plans mentioned providing surveys in multiple languages to engage with more members

of the community. Accessibility is an important consideration for planners going forward to improve the success of public engagement. It was not always clear how public engagement shaped mitigation action priorities and vulnerability assessments. Assets were included as something essential to community resilience, but were not typically identified by communities through public engagement. Discussions with planners revealed that the Community Asset Approach shows up more strongly in county level Comprehensive Emergency Management Plans (CEMP's) through the use of the "whole community approach" where "residents, businesses, non-profit organizations, emergency management practitioners, organizational and community leaders collectively identify and assess the needs of their respective communities and determine the best ways to organize and strengthen their assets, capacities, and interests" (Kitsap, CEMP). This approach shows up in many of the studied counties' CEMPs, and holds implications for the need to more closely integrate Hazard Mitigation Planning processes with other county-level plans.

Our findings also show that the burden on planners themselves is a key barrier to creating useful HMPs. This is consistent with our literature review, which identified administrative burden as a primary barrier for planners. Implementation of actions, community engagement, and risk assessments often depend on institutional capacity, coordination, and monitoring/updating plans. Our analysis revealed how these constraints show up for planners in a variety of ways, including staff turnover, institutional knowledge loss, limited time, changing requirements, data challenges, dependence on consultants, and difficulty navigating the state/FEMA review process. These results support the findings of Frazier et al. (2013) who identified resources, institutional capacity, and political challenges as key obstacles to producing and implementing effective plans. The barriers identified help explain why plans may lack implementation details, a clear connection of risk assessments to actions, and effective public engagement.

5.2 Limitations of Research

Our research is not without limitations. Within our content analysis, one key challenge was navigating discrepancies that existed across plans due to the staggered planning cycle. Because counties are in different phases of planning at a given time, some plans included for analysis were written under previous FEMA guidelines that no longer reflect the requirements and guidelines used to develop our codebook. This made code development and the coding process challenging and, at times, subjective, as the explicit applicability of codes was often dependent on when plans were written. Additionally, coders were operating under significant time

constraints given the breadth of our research and the volume of content included for analysis. Our codebook included 132 codes and, across the 15 plans included in our content sample, coders analyzed over 7,400 pages of content. Limitations from time constraints and content volume are also reflected in our unit of analysis. We attempted analysis first using sentences, then paragraphs, before selecting plan sections as the final unit of analysis. This was done to eliminate redundancy in coding while allowing large amounts of content to be evaluated. As such, our content analysis serves to identify broader patterns and themes across plans, but further research is likely needed for more in-depth analyses of the patterns identified through our research.

Across qualitative research, interview samples are considered significant when researchers reach thematic saturation. This happens when interviews no longer produce new themes or insights consistently. With the sample in this study being limited to 10 coastal county planners, this analysis was not able to reach a saturation of themes. The findings capture important patterns and considerations, but they should not be generalized to all counties in Washington State. Research on qualitative saturation suggests that to reach a primary range of themes, there needs to be between 9 and 17 interviews, with more significant saturation occurring at 16 to 24 interviews (Hennink et al, 2022).

There was limited literature that directly explained how to define “usefulness” in Hazard Mitigation Plans. Given the limited literature, this report may not cover all aspects of how HMPs function in practice. Our framing of usefulness was created to help guide research that would be salient for planners and a resource for WA EMD to gain insight into how the HMP process plays out in their designated coastal counties.

5.3 Areas for Future Research

Community Asset Approach: There is limited application of the Community Asset Approach in current HMPs in coastal WA counties. Further research could investigate how to support planners in incorporating this specific approach. Other research could also further explore how the application of the community asset-based approach could help planners better account for social vulnerability across all elements of the planning process and proposed mitigation actions.

Planning cycles and plan integration: Hazard mitigation plans are updated every five years. Many related plans, like comprehensive plans, shoreline master plans, climate plans, capital improvement plans, and emergency management plans operate on alternate timelines.

Additional research could inspect how and when counties are best positioned to combine HMP planning into other planning processes.

Impacts of FEMA funding cuts to local planning and hazard mitigation: Many counties depend on federal funding to support their mitigation planning. Impacts of federal funding cuts will likely be especially impactful on smaller or rural coastal counties, where staff capacity is already limited and political will is low. Future research could examine how federal funding changes influence plan timelines, implementation, consultant reliance, etc.

5.4 Conclusion

This report shows that Washington's Coastal counties are compliant with FEMA requirements, but compliance alone does not ensure local actionability. Many elements varied widely in depth and specificity across HMPs, including connection of risk assessments and mitigation actions, public input and community engagement, partnership support, implementation details and planner burdens. HMPs were frequently treated as static reference documents used to obtain federal funding, rather than active tools for planning or project development. Transforming an HMP into a useful blueprint means shifting the perspective from viewing the plan as a compliance document for FEMA funding to instead seeing HMPs as a vehicle that enables counties to “reduce disaster loss and break the cycle of disaster damage, reconstruction, and repetitive damage.” To achieve this, HMPs must be designed in a way that makes required components simpler to integrate, easier to update, and more practical for decision makers to use.

The recommendations made in Chapter 6 build on the evidence compiled in our analysis. Our analysis highlighted that planners could focus on clearly linking hazard identification, community concerns, vulnerability, and partner input to mitigation actions; developing mitigation actions with more operational details and integrating HMP planning with other planning efforts. WA EMD could assist by expanding technical assistance, centralizing resources, strengthening partnerships, and providing resources for public engagement. The recommendations are intended to help HMPs become more actionable, connected to community priorities and partner networks, and easier to maintain as living documents that support long-term resilience. To enhance the usefulness of our report, a planner oriented HMP “cookbook” was created as a general guidance document for WA EMD. Together, the following recommendations and cookbook are designed to make county HMPs easier to write, update, and use.

CHAPTER 6: BREATHING NEW LIFE INTO HAZARD MITIGATION PLANS

Hazard mitigation plans have long been written with the prospect of FEMA funding in mind. But what if they were written for their own intrinsic value instead? Is it possible to increase the usefulness of a hazard mitigation plan while reducing the administrative burden they place on planners? These were challenges we sought to address as we conducted our research and developed the educational materials presented in this chapter. They were created in an iterative process, using the literature and our research findings, with the feedback we received from our client and planners from 10 coastal counties in Washington.

6.1 Recommendations for Washington Emergency Management Division

- Develop workshops and guidelines, or promote a study on how to effectively conduct public engagement. Create template surveys to distribute to communities for hazard prioritization and identifying community assets that matter to them. Create materials that list best practices and standard procedures for Outreach methods.
- Develop a relationship with the Department of Commerce, grant writing professionals, and/or collaborate with a university graduate program to advise and develop guidelines on funding mechanisms and opportunities.
- Collaborate with university and planning professionals to develop strategies for combining the HMP planning process with other county-level plans (Capital Improvement Plans, Comprehensive Plans, Climate Plans, Shoreline Master Plans, Comprehensive Emergency Management Plans).
- Avoid multiple layers and steps of communication. Where possible, invite planners to conversations with FEMA and program managers concerning their county hazard mitigation plans.
- Developing directories for technical support would make it easier for planners to find the appropriate help at the right stage of the planning process. Directories can point towards FEMA contacts, state program managers, WA agency staff, grant writing support, GIS/Data sources. Having this information centralized can reduce the time counties spend searching for assistance.

6.2 Recommendations for County Planners

- **Connect risk to action:** Explicitly demonstrate how hazard identification and partner and stakeholder feedback directly inform mitigation priorities. Bridge community-expressed concerns, understandings of social vulnerability, and assessments of risk and vulnerability through mitigation strategy development and execution.
- **Make actions “shovel-ready”:** For each project, include responsible parties, partners, timelines, cost estimates, priority, and potential funding sources to position the project for immediate implementation when funding becomes available.
- **Design for repeatable use:** Use plain language, standardized formats (tables/ checklists), and accessible file types. Always document your planning process and rationale for your steps and ensure that the HMP and supporting planning notes and data are easily retrievable for future planners by utilizing cloud storage or external hard drives with a physical filing system.
- **Integrate with other plans and administrative events:** Link HMP actions and planning processes with other county-level plans (e.g., Comprehensive, Capital Improvement, and Shoreline Management Plans). Piggybacking on existing meetings and events where identified partners and stakeholders are present can help increase engagement and participation and reduce partner planning fatigue, saving resources and time.
- **Treat the HMP as a living document:** Track and document progress of HMP actions throughout the 5-year planning cycle to make the eventual update more efficient. When the opportunity arises to contribute to the planning process document the efforts undertaken and who was involved, even when outside the official planning cycle.
- **Engage with school districts:** For increasing general public engagement establish workshops, guest speakers, and join events at local schools. Ensure that information reaches student households by providing paper summaries of what was taught, these copies should clearly describe how parents can give feedback to mitigation actions and the overall HMP. Consider adding a QR code for quick access.

6.3 Hazard Mitigation Planning “Cookbook”

As part of the capstone project, WA EMD requested a county planner field guide to assist in reducing planner burden and navigation resources (see Appendix K). Dubbed the “cookbook” for its easy-to-use, step-by-step instructional nature, the cookbook stems from the findings in our research and is informed by both the content analysis and planner interviews. It is designed

to reduce burden by translating the HMP planning process into a clearer, more usable format. Each section is organized around a specific planning task:

- Task 1: Determining the Planning Area
- Task 2: Building the Planning Team
- Task 3: Creating an Outreach Strategy
- Task 4: Assessing Community Capabilities
- Task 5: Conducting a Risk Assessment
- Task 6: Developing a Mitigation Strategy
- Task 7: Keeping the Plan Current
- Common Barriers
- Resources and Appendices

Within each task, the cookbook identifies the “ingredients” planners need, where to find them, simple steps for completing the task, and key considerations for making the process more manageable and useful.

The cookbook is primarily oriented towards countywide Hazard Mitigation Plans where planners coordinate with multiple jurisdictions, stakeholders, partners and communities and treat coordination as a way to share resources, clarify roles and strengthen partnerships. The primary audience for the cookbook is professionals stepping into the HMP planning role for the first time, or any WA coastal planners who may want more centralized guidance and resources. The goal is to assist planners in creating an HMP that is actionable, supportive and useful.

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Appendix A

HMP Content Analysis Codebook

Theme: General Public Involvement

Theme: General Public Involvement				
SUBTHEME:	CODENAME:	DEFINITION:	CODING INSTRUCTIONS:	EXAMPLES:
Assessment	Level of Engagement Achieved	<p><u>Assessment</u>: The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Level of Engagement Achieved</u>: The extent to which the county's outreach methods, discussed in the plan's public outreach strategy, successfully solicited the general public's participation for mitigation planning.</p>	1= Plan states the level of involvement from the general public for a given public outreach method used	"The survey was live from March 6, 2024, and closed May 10, 2024. A total of 619 responses were received"
Methods	Community Events	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Community Events</u>: County's public outreach strategy utilizes attendance or hosting events open to communities to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"The public outreach and engagement strategy was developed to maximize public involvement in the MJHMP planning process. The strategy included promotion and outreach at community events"
Methods	Conference Calls	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Conference Calls</u>: County's public outreach strategy utilizes conference calls to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"The County and its planning partners did extensive outreach and used different methods to increase involvement, such as scheduling conference calls that allowed participation by agencies and individuals"

Methods	Newsletters	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Newsletters:</u> County's public outreach strategy utilizes newsletters to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"A note about the survey was included in TRL's June digital newsletter"
Methods	News Releases	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>News Releases:</u> County's public outreach strategy utilizes news releases (including press releases) to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"The survey was promoted via a press release"
Methods	Online Survey	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Online Survey:</u> County's public outreach strategy utilizes online survey(s) to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"The survey link was posted on the County webpage"
Methods	Paper Survey	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Paper Survey:</u> County's public outreach strategy utilizes paper survey(s) to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"Additionally, printed copies of the survey were distributed at tabling events"

Methods	Public Comment	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Public Comment</u>: County's public outreach strategy utilizes public comment to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"Local communities contributed to plan development by reviewing and commenting on the draft plan"
Methods	Public Meetings	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Public Meetings</u>: County's public outreach strategy utilizes public meetings to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"Local communities participated in the planning process by attending public meetings"
Methods	Radio	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Radio</u>: County's public outreach strategy utilizes radio to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"The public outreach strategy for involving the public in this plan emphasized the following elements: Use of local radio station segments (Friday interviews)"
Methods	Social Media	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Social Media</u>: County's public outreach strategy utilizes social media platforms (e.g. Instagram, Facebook, X, etc.) to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"All the plan partners were encouraged to notify their constituents about the survey through their agency social media accounts"

Methods	Townhalls	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Townhalls:</u> County's public outreach strategy utilizes townhalls to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"In order to involve the public in the 2021 Plan update, the Division of Emergency Management maintained a 24/7 online virtual town hall meeting on their website"
Methods	Website Engagement	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Website Engagement:</u> County's public outreach strategy utilizes a designated website, created and operated by the county, to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"The webpage also provided the opportunity to submit comments online, and contact information was included for additional comments or questions via email. The website was updated throughout the planning process and provided notifications and access to MJHMP materials."
Methods	Workshops	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Workshops:</u> County's public outreach strategy utilizes workshops to solicit participation from the general public in hazard mitigation planning.</p>	1= Mentioned in plan	"Fire Mitigation and Abbreviated Hazard Mitigation Workshop: During the month of May 2024, four presentations and question/answer sessions were given to members of the public in four different locations in Clallam County. The focus of these presentations was wildfire risk, response, and preparedness."
Methods	Continued Public Engagement	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Continued Public Engagement:</u> County's strategy for continuing to seek public engagement and feedback after the plan has been approved; during the plan's implementation, monitoring, and evaluation.</p>	1= Mentioned in plan	"Regular updates will not only highlight the progress of specific mitigation actions but also offer concise summaries of completed and ongoing efforts. In addition, whenever updates or addendums are introduced to the RHMP, King County will actively open channels for public input. This ensures that the community remains a vital and engaged participant in the planning process. Residents, local stakeholders, and other interested parties will be encouraged to provide comments, voice concerns, and offer valuable feedback on proposed changes to the plan."

Methods	Incorporation in Hazard Prioritization	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Incorporation in Hazard Prioritization:</u> County includes general public engagement within the approach used for hazard prioritization.</p>	1= Plan mentions using input from general public for hazard prioritization	"Throughout the process the public was given opportunities to review plan drafts, ask questions, and provide input on hazards. They were also invited to provide feedback on hazard identification and hazard ranking"
Methods	Incorporation in Vulnerability Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Incorporation in Vulnerability Assessment:</u> County includes general public engagement within the approach used for conducting a vulnerability assessment.</p>	1= Plan mentions using input from general public within vulnerability assessment methods/methodology	"The results from the Stakeholder Risk Rating and printed/electronic Public Community Surveys were reviewed and compared with the historical and quantitative hazard information reviewed during the 2022 Kitsap County THIRA development"
Methods	Incorporation in Asset Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Incorporation in Asset Assessment:</u> County includes general public engagement in the approach used for conducting an asset assessment.</p>	1= Plan mentions using input from general public as asset assessment method	"Community Workshop: Group 1 discussed vulnerability assessment focus areas of economic development and land use, and public health and community wellbeing. Group 2 discussed focus areas of built infrastructure and natural environment, and water resources. Participants provided information on which physical assets (specific areas, critical facilities, infrastructure) are most vulnerable/at risk"
Methods	Incorporation in Mitigation Goals	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Incorporation in mitigation Goals:</u> County includes general public engagement in the approach used for developing mitigation goals.</p>	1= Plan mentions using input from general public as mitigation goal development method	"This questionnaire was designed to help identify areas vulnerable to one or more natural hazards. The answers to its questions helped guide the planning partners in selecting goals, objectives and mitigation strategies"

Methods	Incorporation in Mitigation Activity ID	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Incorporation in Mitigation Activity ID:</u> County includes general public engagement in the approach used for identifying potential mitigation activities.</p>	1= Plan mentions using input from general public as mitigation activity identification method	"Mitigation action submittal web form: DEM prepared a web form for community members to submit mitigation actions. This form was completed by some community members but comments were returned as opposed to mitigation actions. The web form tool did not yield mitigation actions which were usable as submitted, however the information conveyed the residents opinions which were used to inform the planning group for decision making about mitigation actions"
Methods	Incorporation in Mitigation Activity Prioritization	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Incorporation in Mitigation Activity Prioritization:</u> County includes general public engagement in the approach used for determining mitigation activity priority.</p>	1= Plan mentions using input from general public as mitigation activity prioritization method	"KCOEM uses public input to help prioritize which strategies listed in this plan should be implemented"

Theme: Risk and Vulnerability

SUBTHEME:	CODENAME:	DEFINITION:	CODING INSTRUCTIONS:	EXAMPLES:
Assessment	Drought Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Drought Hazard Area:</u> County identifies the geographic location within the planning jurisdiction where drought occurs.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas
Assessment	Earthquake Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Earthquake Hazard Area:</u> County identifies the geographic location within the planning jurisdiction where earthquakes occur.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas

Assessment	Extreme Weather Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Extreme Weather Hazard:</u> County identifies the geographic location within the planning jurisdiction where extreme weather occurs.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas
Assessment	Flood Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Flood Hazard Area:</u> County identifies the geographic location within the planning jurisdiction where flood occurs.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas
Assessment	Landslide Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Landslide Hazard Area:</u> County identifies the geographic location within the planning jurisdiction where landslides occur.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas
Assessment	Sea Level Rise Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Sea Level Rise Hazard Area:</u> County identifies the geographic location within the planning jurisdiction where sea level rise occurs.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas
Assessment	Tsunami Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Tsunami Hazard Area:</u> County identifies the geographic location within the planning jurisdiction where tsunamis occur.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas

Assessment	Volcano Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Volcano Hazard Area:</u> County identifies the geographic location within the planning jurisdiction where volcano disruptions occur.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas
Assessment	Wildfire Hazard Area	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Wildfire Hazard Area:</u> County identifies the geographic location within the planning jurisdiction where wildfire occurs.</p>	1= Hazard area is identified in plan	GIS Maps (e.g. HAZUS); written descriptions of hazardous areas
Assessment	Drought Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Drought Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."
Assessment	Drought Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Drought Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Drought Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Drought Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Drought Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>

Assessment	Earthquake Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Earthquake Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."
Assessment	Earthquake Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Earthquake Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Earthquake Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Earthquake Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Earthquake Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Extreme Weather Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Extreme Weather Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."
Assessment	Extreme Weather Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Extreme Weather Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Severe Weather Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>

Assessment	Extreme Weather Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Extreme Weather Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Flood Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Flood Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."
Assessment	Flood Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Flood Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Flood Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Flood Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Flood Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Landslide Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Landslide Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."

Assessment	Landslide Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Landslide Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Landslide Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Landslide Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Landslide Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Sea Level Rise Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Sea Level Rise Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."
Assessment	Sea Level Rise Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Sea Level Rise Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Sea Level Rise Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Sea Level Rise Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Sea Level Rise Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>

Assessment	Tsunami Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Tsunami Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."
Assessment	Tsunami Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Tsunami Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Tsunami Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Tsunami Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Tsunami Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Volcano Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Volcano Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."
Assessment	Volcano Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Volcano Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Volcano Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>

Assessment	Volcano Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Volcano Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Wildfire Priority Low	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Wildfire Priority Low:</u> County's determined level of urgency for addressing the natural hazard is low.</p>	1= Hazard priority rating includes "low"	"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a low level."
Assessment	Wildfire Priority Medium	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Wildfire Priority Medium:</u> County's determined level of urgency for addressing the natural hazard is moderate.</p>	1= Hazard priority rating includes "medium"	<p>"Wildfire Priority: Medium"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>
Assessment	Wildfire Priority High	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Wildfire Priority High:</u> County's determined level of urgency for addressing the natural hazard is high.</p>	1= Hazard priority rating includes "high"	<p>"Based on the potential impact, the Planning Team determined the CPRI score to be 3.85, with overall vulnerability determined to be a high level"</p> <p>"Based on the potential impact, the Planning Team determined the CPRI score to be 2.55, with overall vulnerability determined to be a medium-high level"</p>

Assessment	Exposure of Socially Vulnerable Populations	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Exposure of Socially Vulnerable Populations:</u> County identifies the planning area(s) where population(s) with a reduced ability to anticipate, cope with, resist, and recover from a disaster are located and exposed to hazards.</p>	1= Plan identifies the location(s) of socially vulnerable populations exposed to a given hazard	<p>GIS maps, other visuals, written descriptions (e.g.):</p> <p>"In King County, approximately 41% of the 57,737 residents living in mapped flood hazard areas are Black, Indigenous, and other People of Color (BIPOC). The Green/Duwamish watershed is the only major river watershed in King County in which more BIPOC residents (59%) than white residents (41%) reside in mapped flood hazard areas. Other watersheds exhibiting a high percentage of BIPOC community members residing in flood hazard areas include the Sammamish (43%), Cedar (36%), and White River watersheds (38%)"</p>
Assessment	Evacuation Clearance Time Estimates	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Evacuation Clearance Time Estimates:</u> County provides estimate(s) of how long it will take residents to clear an area endangered by a given hazard and reach a safe location.</p>	1= Plan includes estimate of evacuation clearance time(s) for a given hazard	"Evacuation Walk Maps for Aberdeen, Hoquiam and Cosmopolis, Westport, Grayland, and North Ocean Shores. All are available on the County's website at: Tsunami Evacuation Maps and Wave Simulations (graysharbor.us)"
Criteria	Determinant of Social Vulnerability	<p><u>Criteria:</u> The standards or metrics used to evaluate, judge, and/or select something.</p> <p><u>Determinant of Social Vulnerability:</u> Plan cites characteristics used to indicate when a group typically has a reduced ability to anticipate, cope with, resist, and recover from a disaster are included in the plan.</p>	1= Plan mentions a determinant of social vulnerability	"People with disabilities, the elderly, and people who lack transportation are vulnerable to floods as they require assistance to evacuate"
Criteria	SV in Hazard Prioritization	<p><u>Criteria:</u> The standards or metrics used to evaluate, judge, and/or select something.</p> <p><u>SV in Hazard Prioritization:</u> Social vulnerability is used as an evaluative metric for determining hazard prioritization.</p>	1= Social vulnerability is included within the hazard prioritization methods/methodology section as an evaluative measure for hazard priority	"The matrix is broken up into three categories that equate to total risk. Risk depends on all three factors: the hazard that can cause damage, exposure to the hazard and the vulnerability of the exposed population.

Methods	SV in Vulnerability Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>SV in Vulnerability Assessment:</u> Social vulnerability is included in the approach used for conducting a vulnerability assessment, rather than as a separate evaluation.</p>	I= Social vulnerability included within the vulnerability assessment methods/methodology section	"Vulnerability Assessment: This section outlines the vulnerabilities in different sectors. It identifies which groups or resources are most at risk and why. Stats and Specifics on What Is at Risk: Specific data, such as population demographics, infrastructure condition, or environmental features, are included here"
Methods	Hazard Prioritization Methods	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Hazard Prioritization Methods:</u> The county's strategy for evaluating the level of urgency for addressing a given hazard.</p>	I= Plan includes the county's method for ranking the priority of hazards	<p>"The HMCR Steering Committee prioritized the identified hazards by assigning each hazard a ranking based on probability of occurrence and potential impact. These rankings were assigned based on a group discussion, knowledge of past occurrences, and familiarity with the vulnerabilities of Clallam County and the planning area. Four criteria were used to establish priority:</p> <ul style="list-style-type: none"> • Probability (likelihood of occurrence) • Location (size of potentially affected area) • Maximum Probable Extent (intensity of damage) • Secondary impacts (severity of impacts to community)"
Methods	Evacuation Estimate Methods	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Evacuation Estimate Methods:</u> County plan includes the approach used for calculating the estimated time it will take residents to clear the area endangered by a given hazard and reach a safe location.</p>	I= Method for calculating evacuation clearance time estimate(s) is stated	"As part of the various ongoing studies, an analysis was also conducted utilizing Hazus to help determine evacuation travel times. Hazus incorporates an estimate of pedestrian travel time based on either input from the USGS Pedestrian Evacuation Analyst (Level 2) or a streamlined analysis based on the local road network based on the USGS methodology (Level 1). The model incorporates standard walking speeds and reduction factors based on demographics or other variables that can be modified by the user. The 2017 Westport Study scenario utilized a Level 3 {@Evac_TimeAnalysis} Evacuation Time Analysis. Those travel times were then combined with tsunami travel time, warning time and community reaction time parameters to provide an estimate of potential casualties. Based on data resulting from the various studies, Evacuation Travel Time were developed"

Theme: Community Assets

SUBTHEME:	CODENAME:	DEFINITION:	CODING INSTRUCTIONS:	EXAMPLES:
Actions	Annex Use of Asset Based Approach	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Annex Use of Asset Based Approach:</u> Plan indicates that an annex used an asset-first approach, placing priority on important community assets, to guide mitigation planning.</p>	1= Plan mentions that asset based approach was used by annex	"The primary interest was on how residents could contribute to mitigation and resilience goals for their city. Residents in Medina will serve as the steering committee for the mitigation plan update and will help identify and prioritize mitigation strategies based on at risk, high-priority community assets"
Actions	County Use of Asset Based Approach	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>County Use of Asset Based Approach:</u> Plan indicates that the county used an asset-first approach, placing priority on important community assets, to guide mitigation planning.</p>	1= Plan mentions that asset based approach was used by the county	"The Road Services Strategic Plan lays out system needs and anticipated service levels and an asset management approach to road maintenance and improvement"
Assessment	Exposure of Critical Facilities	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Exposure of Critical Facilities:</u> County's evaluation of the specific structures or infrastructure—essential for protecting public health, safety, and welfare—located within the planning jurisdiction and exposed to a given hazard.</p>	1= Exposure of critical facility(ies) to a given hazard are identified	GIS maps; other visuals; written descriptions
Assessment	Emergency Shelter Demand & Capacity Data	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Emergency Shelter Demand & Capacity Data:</u> County's evaluation of the need for emergency shelters and the ability to accommodate these needs in the event of a disaster.</p>	1= Plan includes estimates for shelter demand or capacity	"As such, based on the 2018 Hazus outputs, analysis for the 100-year probabilistic earthquake indicates that 21 people will seek temporary shelters, while 31 households will be displaced due to the earthquake. Analysis for the 500-year probabilistic earthquake indicates that 207 people will seek temporary shelters, while 302 households will be displaced due to the earthquake. For the Cascadia M9.0 scenario, the model indicates that 155 households will be displaced, with 113 individuals seeking temporary shelter,"

Assessment	Location of Emergency Shelters	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Location of Emergency Shelter:</u> County identifies where emergency shelters—formal or community-organized—are located.</p>	1= Emergency shelter location is identified	GIS maps; other visuals; written descriptions
Assessment	Exposure of Community Lifelines	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Exposure of Community Lifelines:</u> County's evaluation of the fundamental systems and services in a community (including: safety and security; food, hydration, and shelter; health and medical; energy; communications; transportation; hazardous materials; and water systems) located within the planning jurisdiction and exposed to a given hazard</p>	1= Exposure of community lifeline(s) to a given hazard are identified	<p>Identification examples: GIS maps; other visuals; and/or written descriptions</p> <p>Community lifeline examples: water pipeline systems; transportation networks; communication systems; police department operations; etc.</p>
Assessment	Exposure of Historic Resources	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Exposure of Historic Resources:</u> County's evaluation of the assets that tell the story of a planning area or community within the planning jurisdiction and exposed to a given hazard.</p>	1= Exposure of historic resource(s) to a given hazard are identified	<p>Identification examples: GIS maps; other visuals; or written descriptions</p> <p>Historic resource examples: battlefield; shipwreck; historic district or neighborhood; etc.</p>
Assessment	Exposure of Natural Resources	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Exposure of Natural Resources:</u> County's evaluation of the resources, recognized for their intrinsic, ecological value, located within the planning jurisdiction and exposed to a given hazard.</p>	1= Exposure of natural resource(s) to a given hazard are identified	<p>Identification examples: GIS maps; other visuals; or written descriptions</p> <p>Natural resource examples: habitat and ecosystems; forests; wetlands; etc.</p>

Assessment	Exposure of Cultural Resources	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Exposure of Critical Resources:</u> County's evaluation of the assets within the planning jurisdiction that are of the local culture, unique, or cannot be replaced and exposed to a given hazard.</p>	1= Exposure of cultural resource(s) to a given hazard are identified	<p>Identification examples: GIS maps; other visuals; or written descriptions</p> <p>Cultural resource examples: museums; concert halls; stadiums; etc.</p>
Assessment	Exposure of Unclassified Asset	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Exposure of Unclassified Assets:</u> County evaluates the exposure of asset(s) to a given hazard, but does not specify the asset type (i.e. critical facility, community lifeline, historic resource, cultural resource, natural resource).</p>	1= Exposure of unclassified asset(s) to a given hazard are identified	<p>Identification examples: GIS maps; other visuals; or written descriptions</p> <p>Unclassified asset examples: "buildings," "parcels," "land," etc.</p>
Methods	Critical Facility Exposure in Vulnerability Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Critical Facility Exposure in Vulnerability Assessment:</u> County's assessment of critical facility hazard exposure is included in the approach used for conducting a vulnerability assessment.</p>	1= Vulnerability assessment methods/methodology includes critical facility exposure	"The vulnerability assessment considers risks to critical facilities listed in Section 3.0, Community Profile"
Methods	Community Lifelines Exposure in Vulnerability Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Community Lifelines Exposure in Vulnerability Assessment:</u> County's assessment of community lifeline hazard exposure is included in the approach used for conducting a vulnerability assessment.</p>	1= Vulnerability assessment methods/methodology includes community lifeline exposure	<p>"The Emergency Management Program assesses the risk and vulnerability of the following:</p> <ul style="list-style-type: none"> • Operations: lifelines that have limited capacity and resources to properly respond to a hazard event"

Methods	Historic Resources Exposure in Vulnerability Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Historic Resources Exposure in Vulnerability Assessment:</u> County's assessment of historic resource hazard exposure is included in the approach used for conducting a vulnerability assessment.</p>	1= Vulnerability assessment methods/methodology includes historic resource exposure	Plan's vulnerability assessment methods/methodology indicates that evaluating the exposure of historic resources within the planning jurisdiction was part of the approach for conducting a vulnerability assessment
Methods	Natural Resources Exposure in Vulnerability Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Natural Resources Exposure in Vulnerability Assessment:</u> County's assessment of natural resource hazard exposure is included in the approach used for conducting a vulnerability assessment.</p>	1= Vulnerability assessment methods/methodology includes natural resource exposure	<p>"The Emergency Management Program assesses the risk and vulnerability of the following:</p> <ul style="list-style-type: none"> • Environment: Environments limitation to preventing degradation during and following a disaster"
Methods	Cultural Resources Exposure in Vulnerability Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Cultural Resources Exposure in Vulnerability Assessment:</u> County's assessment of cultural resource hazard exposure is included in the approach used for conducting a vulnerability assessment.</p>	1= Vulnerability assessment methods/methodology includes cultural resource exposure	Plan's vulnerability assessment methods/methodology indicates that evaluating the exposure of cultural resources within the planning jurisdiction was part of the approach for conducting a vulnerability assessment
Methods	Unclassified Asset Exposure in Vulnerability Assessment	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Unclassified Asset Exposure in Vulnerability Assessment:</u> County's assessment of unclassified asset hazard exposure is included in the approach used for conducting a vulnerability assessment.</p>	1= Vulnerability assessment methods/methodology includes unclassified asset exposure	<p>"The Emergency Management Program assesses the risk and vulnerability of the following:</p> <ul style="list-style-type: none"> • Property: Properties limit to withstanding and maintaining integrity to a hazard event"

Methods	Recommendation of Asset Based Approach	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Recommendation of Asset Based Approach:</u> County recommended the use of an asset first approach to guide mitigation planning.</p>	1= Asset based approach recommended by county	"Second, jurisdictions were asked to consider an asset-based approach"
Resources	Resources for Asset Based Approach	<p><u>Resources:</u> The assets, materials, or capabilities, whether tangible (e.g. money, raw materials, etc.) or intangible (e.g. staff knowledge, time devoted to work, etc.) possessed or needed by the county.</p> <p><u>Resources for Asset Based Approach:</u> County provides resource (such as worksheet, training and educational opportunities, etc.) for employing an asset based approach.</p>	1= Resource provided by county	"The half-day workshop series took participants from developing risk problem statements (December 2018), through identifying community assets and strategies to protect those assets (July 2019), to funding projects (August 2019). Using problem statements developed in the first workshop, participants identified assets and then developed strategies that could protect their assets in workshop 2"

Theme: Plan Implementation

SUBTHEME:	CODENAME:	DEFINITION:	CODING INSTRUCTIONS:	EXAMPLES:
Actions	Funded Mitigation Activities	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Funded Mitigation Activities:</u> Plan describes county mitigation activity(ies) that have formally been allocated funding for implementation.</p>	1= Plan indicates that funding has been allocated for a mitigation activity	<p>"The project was selected for funding pending FEMA approval of the Hazard Mitigation Plan update"</p> <p>"In 2021, Thurston County secured a grant from the Washington Department of Natural Resources and US Geological Survey through the 3D Elevation Program to acquire QL1 LiDAR data for the entire county. This data will greatly improve the county's ability to update its wetland inventory, landslide hazard areas, and river channel migration zones more accurately"</p>

Actions	Plan Use	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Plan Use:</u> County explicitly mentions that the HMP or previous HMP was used for disaster mitigation, response, or recovery.</p>	1= Plan indicates that current or previous plan was used	<p>Inclusion of completed projects under previous HMP, written description of use (e.g.):</p> <p>"Since the 2018 Hazard Mitigation Plan (HMP) was approved, the County and its planning partners have completed many initiatives identified throughout this document in an attempt to serve the population, sustain community lifelines, reduce impact to the socially vulnerable, and increase economic growth throughout the planning area. Chapter 16 identifies the current status of the strategies contained in the previous plan"</p>
Assessment	Capability Assessment	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Capability Assessment:</u> County's inventory of agency missions, programs, and policies available for carrying out hazard mitigation planning, and an analysis of its capacity to carry them out.</p>	1= Capability assessment included	Plan includes capability assessment section or otherwise includes an inventory of agency missions, programs, and policies, and an analysis of its capacity to carry them out
Assessment	Timeline for Implementation	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Timeline for Implementation:</u> Estimate(s) for how long a mitigation activity will take to carry out fully.</p>	1= Implementation timeline identified	<p>Timeline: Ongoing;</p> <p>Timeline: 2-5 years;</p> <p>Timeline: Short-term</p>
Assessment	Assessment of Obstacles for Implementation	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Assessment of Obstacles for Implementation:</u> County's evaluation of the barriers impacting the ability to carry out prioritized mitigation activities.</p>	1= Implementation obstacle is identified	"The top obstacles to implementing HMP projects and programs include lack of staff time, lack of funding, and lack of familiarity and expertise"

Assessment	Assessment of Losses Avoided	<p><u>Assessment:</u> The final determination made following a systematic process of gathering and reviewing information.</p> <p><u>Assessment of Losses Avoided:</u> County provided estimate(s) of the losses avoided following a disaster as a result of a mitigation activity they implemented.</p>	1= Estimate is provided	Plan includes evaluation of the damages and costs a community would have suffered following a hazard event if a mitigation project had not been implemented
Criteria	SV in Mitigation Activity Prioritization	<p><u>Criteria:</u> The standards or metrics used to evaluate, judge, and/or select something.</p> <p><u>SV in Mitigation Activity Prioritization:</u> Social vulnerability is an evaluative metric for determining mitigation activity prioritization.</p>	1= Social vulnerability is included within the mitigation activity prioritization methods/methodology section as an evaluative metric for activity prioritization	<p>"The below criteria will be used to establish priorities. These priorities will be applied to projects annually for submission to FEMA Hazard Mitigation Grants.</p> <p>The updated scoring matrix broken into categories, like previous iterations. These categories are Economics and Equity; Multi-Jurisdictional; Multi-Beneficial; Community Resilience and Long- Term Vulnerability Reduction; Climate, Environment and Sustainability; Effectiveness; Urgency; and Shovel-Ready"</p>
Criteria	Community Asset in Activity Prioritization	<p><u>Criteria:</u> The standards or metrics used to evaluate, judge, and/or select something.</p> <p><u>Community Asset in Activity Prioritization:</u> Exposure of community-prioritized assets is an evaluative metric for determining mitigation activity prioritization.</p>	1= Asset priority identified through public engagement is included as an evaluative measure for determining mitigation activity prioritization	County uses public engagement to identify the highest priority assets and includes exposure to these assets as a criteria for determining mitigation activity priority
Goals	SV Reduction Key Goal	<p><u>Goals:</u> Specific targets, aims, or desired results the county expresses wanting, or commits efforts, to achieve.</p> <p><u>SV Reduction Key Goal:</u> County identifies increasing the capacity of populations with diminished ability to anticipate, cope with, respond to, and recover from disasters in primary mitigation goals.</p>	1= SV reduction is reflected in a primary plan goal	"The plan's overarching goal is to create a framework that reduces the impact and susceptibility of the identified hazards on people, property, and the environment, prioritizing historically underserved communities"

Goals	Goal for Equitable Cost Distribution	<p>Goals: Specific targets, aims, or desired results the county expresses wanting, or commits efforts, to achieve.</p> <p>Goal for Equitable Cost Distribution: Allocating mitigation costs—financial and otherwise—in a fair and just manner that takes account of and seeks to address existing inequalities is reflected in a stated goal.</p>	1= Equitable cost distribution is mentioned within a plan goal	The hazard mitigation plan sets a goal of distributing costs of mitigation activities in a way that accounts for existing inequalities, providing greater public funding for low-income and historically underserved households while requiring higher contributions from wealthier property owners, in order to reduce financial barriers to participation in mitigation efforts
Goals	Independent Mitigation Activities	<p>Goals: Specific targets, aims, or desired results the county expresses wanting, or commits efforts, to achieve.</p> <p><u>Independent Mitigation Activities</u>: County identifies intent to pursue strategies for carrying out mitigation activities without external funding.</p>	1= Plan references intent to pursue strategy(ies) for independent mitigation activities	<p>Evaluation of whether a mitigation activity can be carried out without external funding; Intent to pursue mitigation tactics without external funding (e.g.):</p> <p>"It was important to the planning partnership to look at initiatives that will work through all phases of emergency management. Some of the initiatives outlined in this plan are not grant eligible—grant eligibility was not the focus of the selection. Rather, the focus was the initiatives' effectiveness in achieving the goals of the plan and whether they are within each jurisdiction's capabilities"</p>
Goals	Reason for Plan Development	<p>Goals: Specific targets, aims, or desired results the county expresses wanting, or commits efforts, to achieve.</p> <p><u>Reason for Plan Development</u>: County's cited reason for creating the HMP.</p>	1= Plan identifies reason for developing the HMP	"A planning partnership made up of Island County and local governments worked together to create this Island County Multi-Jurisdiction Hazard Mitigation Plan Update to fulfill the DMA requirements for all fully participating partners"
Methods	Plan to Address Capacity Gaps	<p>Methods: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Plan to Address Capacity Gaps</u>: Identified strategies for reducing the discrepancy in the jurisdiction's current capacity and the capacity required to meet specific mitigation goals or objectives.</p>	1= Capacity gap(s) are identified with means for addressing them	"Multiple mitigation measures are priority projects to expand on Clallam County's capabilities, including new plans and programs. Examples of opportunities to expand capabilities include the following mitigation actions:"

Methods	Implementation Process Description	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Implementation Process Description:</u> Identification of the steps needing to be taken to carry out a mitigation activity.</p>	1= Implementation step(s) are identified	<p>"Implementation Plan/Actions:</p> <ul style="list-style-type: none"> • KC EM will work with DNRP, WLRD and the Climate Preparedness team to identify partners. • Continue to partner with WA DNR and DLS to map WUI areas – ultimately use this map to target strategy priorities. • Socialize results of WUI mapping efforts with comprehensive plan staff and look into planning policies that could limit density or development in fire-prone areas. • Convene multiagency committee once WA DNR WUI maps are closer to being finalized"
Methods	Plan Enforcement	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Plan Enforcement:</u> Strategy for ensuring mitigation activity(ies) are carried out to completion.</p>	1= Plan identifies method for plan enforcement	<p>"To enhance implementation, key partners and county departments will be invited to clarify processes and next steps. Additionally, KCOEM will work to build public-private partnerships by engaging nonprofits and corporations with aligned missions to help secure future mitigation funding. As part of its leadership role in the countywide planning effort, KCOEM will also distribute federal Notices of Funding Opportunity (NOFOs). Proposals submitted by partners will be assessed according to the prioritization process identified in this plan and the county will, where possible, support those partners submitting grant proposals. This will be a key strategy to implement the plan. King County Office of Emergency Management (KCOEM) will schedule annual check-ins to evaluate and revise the identified hazards risk analysis along with each hazards impact and vulnerability analysis."</p>
Methods	Designation of Implementation Responsibilities	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Designation of Implementation Responsibilities:</u> The role/person responsible for carrying out a mitigation activity.</p>	2= Plan identifies the role or person responsible for overseeing activity implementation	<p>Mitigation activity includes the role/person responsible for overseeing implementation (e.g.):</p> <p>Lead agency/department: DEM, director</p>

Methods	Mitigation Activity Prioritization Methods	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Mitigation Activity Prioritization Methods</u>: The approach used for evaluating the relative importance for implementing a given mitigation activity.</p>	1= Plan identifies mitigation activity prioritization methods	Cost benefit analysis, use of FEMA prioritization indices, county-created prioritization indices, community survey results, etc.
Methods	Hazard Priority in Activity Prioritization	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Hazard Priority in Activity Prioritization</u>: Hazard prioritization is included in the approach used for mitigation activity prioritization.</p>	1= Hazard priority is included in the mitigation activity prioritization methods/methodology section as an evaluative measure for activity prioritization	"Hazard rankings and associated probability are considered as part of the mitigation prioritization, discussed in Section 5.0: Mitigation Strategy"
Methods	SV in Mitigation Goal Development	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p>SV in Mitigation Goal Development: Social vulnerability is included in the approach used for developing mitigation goals.</p>	1= Plan identifies that social vulnerability was included in mitigation goal development methods	Methods for developing mitigation goals incorporate social vulnerability data into the process by considering the needs of at-risk populations when identifying and prioritizing hazard mitigation goals.
Methods	SV in Mitigation Activity ID	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>SV in Mitigation Activity ID</u>: Social vulnerability is included in the approach used for identifying potential mitigation activities.</p>	1= Plan identifies that social vulnerability was included in mitigation activity identification methods	"The findings of the SVP analysis were considered on a hazard-by-hazard basis in Section 4.0: Hazards Assessment, and informed specific mitigation actions presented in Section 5.0: Mitigation Strategy."

Methods	Plan for Equitable Cost Distribution	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Plan for Equitable Cost Distribution:</u> County identifies strategy for allocating mitigation costs—financial and otherwise—in a fair and just manner that takes account of and seeks to address existing inequalities.</p>	1= Plan identifies plan for equitable mitigation cost distribution	County includes methods or steps for distributing costs of mitigation activities in a way that accounts for existing inequalities
Resources	Identification of Implementation Costs	<p><u>Resources:</u> The assets, materials, or capabilities, whether tangible (e.g. money, raw materials, etc.) or intangible (e.g. staff knowledge, time devoted to work, etc.) possessed or needed by the county.</p> <p><u>Identification of Implementation Costs:</u> County provides estimate of the total cost of carrying out a given mitigation activity.</p>	1= Cost estimate included	Dollar amount of estimated cost; cost range (i.e. low, medium, high); etc.
Resources	Identification of Funding Sources	<p><u>Resources:</u> The assets, materials, or capabilities, whether tangible (e.g. money, raw materials, etc.) or intangible (e.g. staff knowledge, time devoted to work, etc.) possessed or needed by the county.</p> <p><u>Identification of Funding Sources:</u> County describes potential internal and external funding sources for supporting activity implementation.</p>	1= Plan identifies potential funding source(s) for mitigation activity(ies)	Federal and/or state grants, local budget, existing resources, etc.

Category: Fostering Partnership

THEME:	CODENAME:	DEFINITION:	CODING INSTRUCTIONS:	EXAMPLES:
Actions	Internal Cross-Collaboration within County Departments	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Internal Cross-Collaboration within County Departments:</u> County agencies, departments, and teams work together to support hazard mitigation planning.</p>	1= Plan identifies internal cross collaboration	Plan identifies multiple county teams or agencies that work together for planning, implementation of mitigation activities, etc.

Actions	Collaboration with Annexes	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Collaboration with Annexes:</u> County works in partnership with the jurisdictions and organizations listed as an annex to support hazard mitigation planning.</p>	1= Plan identifies collaboration with annexes	Plan identifies annexes included in the HMP and planning process and/or avenues through which collaboration with annexes occurred
Actions	Collaboration with Tribal Entities	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Collaboration with Tribal Entities:</u> County works with Tribes to support hazard mitigation planning.</p>	1= Plan identifies collaboration with Tribal entities	Plan identifies Tribe(s) included in the HMP and planning process and/or avenues through which collaboration with Tribe(s) occurred
Actions	Collaboration with Neighboring Counties	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Collaboration with Neighboring Counties:</u> County works with nearby counties to support hazard mitigation planning.</p>	1= Plan identifies collaboration with neighboring county(ies)	Plan identifies collaboration with neighboring county(ies) during the planning process; plan identifies that resource sharing between counties occurred; plan identifies another county as collaborator or lead on a mitigation activity, etc.
Actions	Collaboration with Local Businesses	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Collaboration with Local Businesses:</u> County works with entities that engage in commercial, industrial, or professional activities by producing, buying, or selling goods and services—located within the planning jurisdiction—to support hazard mitigation planning.</p>	1= Plan identifies collaboration with local business(es)	Local business listed as a stakeholder or collaborator in the planning process; local business listed as collaborator or lead on a mitigation activity; etc.
Actions	Local Community-Based Organization Partnerships	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Local Community-Based Organization Partnerships:</u> County identifies collaboration with non-profit, locally driven group(s) formed to address the localized needs of residents to support hazard mitigation planning.</p>	1= Plan identifies collaboration with local community based organizations	Local community-based organizations (faith-based organizations, community-based healthcare nonprofits, etc.) listed as a stakeholder or collaborator in the planning process; listed as providing technical support; included in capabilities assessment; etc.
Actions	University Partnerships	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>University Partnerships:</u> County identifies collaboration with any university(ies) to support hazard mitigation planning.</p>	1= Plan identifies collaboration with university(ies)	University identified as stakeholder and/or collaborator in the planning process; cited as resource for technical support; included as collaborator or lead on a mitigation activity; etc.

Actions	Nonprofit Partnerships	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Nonprofit Partnerships:</u> County identifies collaboration with any nonprofit(s) outside of local community-based organizations to support hazard mitigation planning.</p>	1= Plan identifies collaboration with NGOs	Nonprofits (Red Cross, Habitat for Humanity, Humane Society, etc.) identified as stakeholder and/or collaborator in the planning process; cited as resource for technical support; included as collaborator or lead on a mitigation activity; etc.
Actions	Consistency with State Plan	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Consistency with State Plan:</u> County demonstrates evaluation of the State Enhanced Hazard Mitigation Plan through data and plan consistent with that used in the state's Enhanced Hazard Mitigation Plan.</p>	1= Plan identifies evaluation of State plan or otherwise references consistency with it	"The Washington State Enhanced Hazard Mitigation plan has established criteria on which it defines jurisdictions as being vulnerable to drought, changing the 2018 methodology from that in previous plan editions. To that degree, the State's plan identifies Island County is among the counties referenced as being in a "low" status with respect to vulnerability to drought in the Washington State Enhanced Hazard Mitigation Plan"
Methods	Technical Assistance Provided by State	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Technical Assistance Provided by State:</u> Specialized guidance, training, or capacity-building services provided by the State to counties to manage grants, prepare for disasters, and/or implement mitigation strategies.</p>	1= Plan identifies technical assistance provided by State agency(ies)	Plan indicates using support (data, personnel, guidance, etc.) provided by the State (e.g. WDNR, WSDOT, WAEMD, etc.) to aid the mitigation planning process; to support implementation of a mitigation activity; etc.
Methods	Integration With FEMA Mitigation Programs and Initiatives	<p><u>Methods:</u> The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Integration With FEMA Programs and Initiatives:</u> County plan elements serve as means for addressing localized needs and priorities while also considering and satisfying requirements for FEMA's mitigation programs and initiatives.</p>	1= Plan identifies how local planning efforts coincide with FEMA programs or initiatives	Plan indicates integration of local planning efforts with the National Flood Insurance Program; Community Rating System; etc.

Methods	Technical Assistance Provided by Federal Agency	<p><u>Methods</u>: The systematic or established procedure, technique, or strategy for carrying out an action, assessment, and/or achieving a goal.</p> <p><u>Technical Assistance by Federal Agency</u>: Specialized guidance, training, or capacity-building services provided by a federal agency or agencies to counties to manage grants, prepare for disasters, and implement mitigation strategies.</p>	1= Plan identifies technical assistance provided by federal agency(ies)	Plan indicates using support (data, personnel, guidance, etc.) provided by a federal agency (USGS, EPA, USDOT, FEMA) to aid the mitigation planning process; to support implementation of a mitigation activity; etc.
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Category: Mitigation Activities

THEME:	CODENAME:	DEFINITION:	CODING INSTRUCTIONS:	EXAMPLES:
Actions	Local Planning and Regulations	<p><u>Action</u>: A thing done or needing to be done.</p> <p><u>Local Planning and Regulations</u>: County identifies their government authorities, policies or codes that influence the way land and buildings are developed and built.</p>	1= Plan identifies county local planning and regulation activity(ies)	Subdivision regulations; development review; building codes and enforcement; NFIP CRS; capital improvement programs; open space preservation; stormwater management regulations and master plans
Actions	Structure and Infrastructure	<p><u>Action</u>: A thing done or needing to be done.</p> <p><u>Structure and Infrastructure</u>: County identifies their activities involving modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p>	1= Plan identifies county structure and infrastructure activity(ies)	Acquisitions and elevations of structures in flood-prone areas; utility undergrounding; structural retrofits; floodwalls and retaining walls; detention and retention structures; culverts; safe rooms
Actions	Natural Systems Protection	<p><u>Action</u>: A thing done or needing to be done.</p> <p><u>Natural Systems Protection</u>: County identifies their activities involving green infrastructure and low impact development, nature-based solutions, engineering with nature and bioengineering to incorporate natural features or processes into the built environment.</p>	1= Plan identifies county natural systems protection activity(ies)	Sediment and erosion control; stream corridor restoration; forest management; conservation easements; wetland restoration and preservation; land conservation; etc.

Actions	Education and Awareness	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Education and Awareness:</u> County identifies their actions that keep residents informed about potential natural disasters. Many of these types of actions are eligible for funding through the FEMA HMA program.</p>	1= Plan identifies county education and awareness activity(ies)	Fire safety programs; presentations to school groups or neighborhood organizations; websites with maps and information; Mailings to residents in hazard-prone areas; etc.
Actions	Preparedness and Response	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Preparedness and Response:</u> County identifies their actions for increasing the ability to protect people and property during and immediately after a hazard or hazard event.</p>	1= Plan identifies county preparedness and response activity(ies)	"Identify and organize County hazard GIS data so that it is readily available in the event of a hazard."
Actions	All Hazards Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>All Hazards Addressed:</u> County sites the mitigation activity as addressing all hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that "all hazards" are addressed by a mitigation activity; plan cites "all hazards approach" to mitigation activities
Actions	Drought Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Drought Addressed:</u> County sites the mitigation activity as addressing drought hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses drought hazards
Actions	Earthquake Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Earthquake Addressed:</u> County sites the mitigation activity as addressing earthquake hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses earthquake hazards
Actions	Extreme Weather Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Extreme Weather Addressed:</u> County sites the mitigation activity as addressing extreme weather hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses extreme weather hazards
Actions	Flood Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Flood Addressed:</u> County sites the mitigation activity as addressing flood hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses flood hazards

Actions	Landslide Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Landslide Addressed:</u> County sites the mitigation activity as addressing landslide hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses landslide hazards
Actions	Sea Level Rise Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Sea Level Rise Addressed:</u> County sites the mitigation activity as addressing sea level rise hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses sea level rise hazards
Actions	Tsunami Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Tsunami Addressed:</u> County sites the mitigation activity as addressing tsunami hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses tsunami hazards
Actions	Volcano Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Volcano Addressed:</u> County sites the mitigation activity as addressing volcano hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses volcano hazards
Actions	Wildfire Addressed	<p><u>Action:</u> A thing done or needing to be done.</p> <p><u>Wildfire Addressed:</u> County sites the mitigation activity as addressing wildfire hazards.</p>	1= Identifies hazard addressed by activity	Plan cites that a mitigation activity addresses wildfire hazards

Appendix B

Interview Protocol and Questions

Interview Protocol

[Interviewer 1:] Thank you for taking the time to meet with us today. My name is [Interviewer 1] and this is my colleague, [Interviewer 2]. We're part of a team of graduate students at the University of Washington who are working with the WA Emergency Management Division on a project about hazard mitigation planning in WA coastal counties.

Before we begin, we'd like to go over a bit of the background and purpose of this study and provide some important information about your participation.

During this interview, we will be asking you questions about your experiences and perspectives on the hazard mitigation planning process for [County name]. The goal of this research is to gather information that could help emergency managers and planners improve their own hazard mitigation plans and planning process. Your responses are anonymous and confidential, and you may skip any questions that you do not wish to answer. The interview will take about 45 minutes.

To be as accurate as possible, we would like to record this interview using Zoom transcription. The recording and Zoom transcription will only be used to help us refer back to your answers during our own transcription of the call. Once we have transcribed your answers, we will permanently delete the recordings. You may ask to pause or stop the recording at any time. Since we're on Zoom, if you prefer audio only, you are welcome to turn your camera off.

Are you comfortable with the interview being recorded? Are you also comfortable with the interview being transcribed using Zoom?

(if yes, start recording)

-verbal consent

-hit record

Do you have any questions about the study, how this information will be used, or your participation in this interview?

-time for questions

If questions come up later, please feel free to let us know at any point during the interview or send us an email afterwards.

During this interview, [Interviewer 2] will be facilitating the conversation, and I will be taking notes of your responses.

[Interviewer 2 asks the following interview questions. Interviewer 1 takes notes.]

Interview Questions:

[Theme of the following questions: introduction]

1. What is your role in updating and implementing your county's HMP?
 - a. (Optional prompt): How long have you been involved in this process?
 - b. (Optional prompt): Has your role changed over time, and if so, how?

[Theme of the following questions: identify whether county's HMP is a "living document" to address research question about usefulness]

2. Tell me about a recent time you remember using your county's HMP. What was the situation, and how did you use it?
 - a. (If they **don't** recall a time they used the HMP) Do you recall a time when someone else in your county government, such as an elected official or other departments or programs, used it?
 - i. (If they don't recall a time someone else used it) What are your thoughts on why the HMP hasn't been used?
 - b. (If they **do** recall a time) What other decisions has your HMP supported in the last five years?
 - c. (If they can't recall anyone using it): Is there any plan that guides hazard mitigation actions in your county?
3. We're interested in how you balance meeting FEMA requirements and creating a plan that works for your county. In your experience, is there a gap between an HMP that passes FEMA review and one that is useful locally? What makes that difference?
4. Following up on that, which specific parts of the HMP do you find most helpful for making decisions for reducing disaster risk? Are there parts that simply don't meet your needs?

[Theme of the following questions: identify HMP elements that trigger implementation to address research question about implementation]

For the next questions, we want to understand how elements in your HMP guide implementation.

5. How do you decide on which mitigation actions to include in your HMP? How do those actions get prioritized?

6. Looking at the projects that have successfully been implemented, was there a specific element in the HMP, like a certain map, dataset or project description, that helped pave the way for those projects?
7. Which community engagement practices have actually improved the content of your HMP as opposed to just checking a box for public participation?
8. Did the communities you engaged with identify any places or resources that were important to them that were not initially identified in an HMP process?

[Theme of the following questions: identify barriers to hazard mitigation planning to address research question about how to alleviate administrative burden]

The following questions are interested in learning about some of the barriers you face in hazard mitigation planning.

9. Other than the common barriers of time and money, what are the key challenges you've faced in creating an HMP? Do you have any suggestions to overcome those challenges?
10. What non-financial resources could the State provide to help you overcome these challenges (eg, GIS support, templates, centralized dashboards)?

[Theme of the following questions: identify resources that planners have available to them, as well as resources they would like to have to address research question about how to alleviate administrative burden]

11. If you were to give advice to someone who's writing an HMP for the first time, what would you tell them?
12. When you first started, what resources do you wish you had known about?

[Theme of the following question: opportunity for open-ended feedback or questions]

13. Do you have any questions, comments, or suggestions for us as we look into improving HMP guidelines for Washington's coastal counties?

[Theme of the following question: Components of usefulness]

14. Finally, please answer this Zoom survey that asks you to assess how important different components are to creating your hazard mitigation plan:

[Zoom survey:] We use the following 7 components to assess the usefulness of a Hazard Mitigation Plan. On a scale of 1 to 5, with 1 being "not" to 5 being "very," please rate how important you think these components are to creating a Hazard Mitigation Plan that is useful for your county to implement.

- i. The HMP identifies and prioritizes natural disaster risks and vulnerabilities to address.

- ii. The HMP describes and prioritizes strategies for protecting people/property from hazards.
- iii. The HMP is implemented and used by my county.
- iv. The HMP fosters partnerships between counties, jurisdictions and agencies.
- v. The HMP develops/strengthens non-governmental and private partnerships.
- vi. The HMP promotes community resilience.
- vii. The HMP reduces costs associated with disaster response and recovery by promoting mitigation activities.

That concludes the interview. If you have any questions, feel free to email us. Otherwise, thank you very much for your time.

[Copy the Zoom survey results. Make sure the Zoom recording and transcription are save

Appendix C

Post-Interview Survey About 7 Dimensions of HMP Usefulness

We use the following 7 components to assess the usefulness of a Hazard Mitigation Plan. On a scale of 1 to 5, with 1 being “not” to 5 being “very,” please rate how important you think these components are to creating a Hazard Mitigation Plan that is useful for your county to implement.

1. The HMP identifies and prioritizes natural disaster risks and vulnerabilities to address.
2. The HMP describes and prioritizes strategies for protecting people/property from hazards.
3. The HMP is implemented and used by my county.
4. The HMP fosters partnerships between counties, jurisdictions and agencies.
5. The HMP develops/strengthens non-governmental and private partnerships.
6. The HMP promotes community resilience.
7. The HMP reduces costs associated with disaster response and recovery by promoting mitigation activities.

Appendix D

Interview Content Analysis Codebook

Theme	Definition	Coding Instructions
Vulnerability Assessment	<p>Vulnerability is susceptibility to physical injury, harm, damage, or economic loss. It depends on an asset's construction, contents, and economic value of its functions. Vulnerability assessments provide the extent of injury and damages that may result from a hazard event of a given intensity in a given area, evaluating exposure and risk of areas within a jurisdiction.</p>	<p>1 = discussion of or allusion to vulnerability assessment included</p>
Implementation	<p>Plan elements that describe or support the execution of mitigation strategies.</p> <p>E.g. Current mitigation projects underway, funding allocated to a given project, delegation of responsibility for implementation, etc.</p>	<p>1 = discussion of or allusion to implementation included</p>
General Public Involvement	<p>Methods for seeking out participation in hazard mitigation planning from the general public residing in local communities.</p>	<p>1 = discussion of or allusion to general public involvement included</p>
Community Assets	<p>Things that are important to members of a community that they wish to keep, sustain, and build upon.</p> <p>E.g. People, physical structures and places, community services, businesses, roads, etc.</p>	<p>1 = discussion of or allusion to community assets included</p>

Mitigation Activities	<p>Sustained actions taken to reduce or eliminate long-term risk to people and property from hazards and their effects.</p> <p>E.g. Constructing floodwalls, improving drainage, retrofitting buildings, etc.</p>	1 = discussion of or allusion to mitigation activities included
Fostering Partnership	The active process of establishing and maintaining collaborative relationships among government, private sector, non-profits, and communities to enhance disaster resilience.	1 = discussion of or allusion to fostering partnership included
Barriers for Planners	Accounts of barriers in the planning, writing, and updating process for hazard mitigation plans.	1 = discussion of or allusion to barriers for planners included
Existing Resources for Planners	Perspectives from Planners on what resources they have that assist the HMP process.	1 = discussion of or allusion to a resource for HMP planning that they have used or heard of someone using included
Resources Requested by Planners	Perspectives from Planners on what assistance or resources the state could provide to assist the HMP process.	1 = discussion of or allusion to a resource for HMP planning that they wish to have access to included
Plan Use & Process Perspectives	Use cases of an HMP described by planners. Including unique perspectives of HMP planning processes and general comments from planners.	1 = any comment included that provides additional context or ideas from planners about plan use or process

Appendix E

Coded Interview Responses - Components of Usefulness

The following table demonstrates how often the six components, or “themes,” of usefulness arose in our interviews. Each theme is further divided into sub-themes to provide nuance around how these components appeared, and is accompanied by supporting quotes from the planners.

Interview Theme	Sub-Theme Identified	Quote Count	Quotes from Interviewees, coded by County (C1-C10)
1. Risk and Vulnerability	Context-based assessments	8	C5: “We do a very ad hoc cost-benefit analysis.” C1: “But then we took two other factors, and those weren’t necessarily part of any formal model; they were just things we thought were important.” C4: “Are we just carrying it forward because it was already there?”
	External guidance	6	C7: “FEMA did update things last time, so we’re mostly aligning with what they’re asking for.” C1: “Talking with so many counties, asking for advice, kind of seeing what other people are doing—that’s a big part of how we approach it.”
	Linking risk assessments with mitigation actions	3	C4: “All the other mitigation efforts come from partners or things we were already doing, not necessarily from the vulnerability analysis itself.” C8: “Translating that into specific actions is where it gets more difficult.”
2. Implementation	Implementation is opportunistic	14	C2: “You should be developing strategies that are shovel-ready enough that if funding becomes available, you can grab and go.”
	Reliance on external partners	13	C7: “We’re often coordinating across departments or with outside partners, and they have their own priorities and timelines.” C2: “ We’ve prioritized strategies based on categories of who is actually in charge of implementing the strategy.”

	Linkage between Implementation and plan priorities	17	C10 “We go back to the plan, but it’s not always the deciding factor in what actually gets done.” C9: “And the ones that have been implemented have often not been fully implemented as described in the plan. They’ve been adapted, or only portions have been implemented.”
3. Public Involvement	Public involvement can be limited and ‘check the box’	12	C4: “May sound weird, but I don’t know if they really engage with it unless something directly affects them.” C7: “A lot of the engagement ends up being more about presenting what we’ve done rather than shaping it from the beginning.”
	Engagement is commonly reactive	7	C3: “I don’t know if they really engage with it unless something directly affects them.” C8: “It’s hard to get people involved unless there’s been a recent event that brings attention to it”
	Constrained by capacity	8	C5: “Going out and doing outreach to the public is time-consuming and doesn’t always result in meaningful input.” C6: “There’s only so much staff time we can dedicate to engagement, especially when it’s not clear what we’ll get back from it.”
4. Community Assets	Unofficial Recognition	9	C4: “No. Our hazard mitigation plan does not go into that. That is more of our comprehensive emergency management plan. That’s more into our CEMP where we get into all of that.” C9: “I know we had an extreme heat initiative that a community member was very dedicated to. So there were some existing initiatives from past plans.” C5: “In a small community, feedback and word travel so quickly that if something happens and there’s something that needs to be done differently or there’s a good idea out there, it percolates up very quickly just in community conversation or gets passed on to an elected official.”
5. Mitigation Activities	Process-based and informal	16	C8: “We’ll put those wishlist items in there, like if funding comes in we would like to do XYZ project, but I also want departments to identify what projects they’re doing

			<p>now, identify what mitigation projects they were doing within those projects, and then we are going to scope those out and put those timelines into our plan”</p> <p>C1: “The toughest question to answer is how are we going to rank or prioritize strategies based on all of this input? And something that I think the county does really well is they have the 15 determinants of equity.”</p>
	Adapted and informed by past events and experiences	8	<p>C1: “After-action (reports) when it comes to disasters that happen, and reflecting on the mitigation strategies that exist, looking at not only the strategies in our base plan, but the strategies in the annexes.”</p> <p>C4: “We did some (drills and analysis) with earthquake warning, well, earthquake slash tsunami warning, and that had a lot to do with the Inner Coastal Tsunami Working Group.”</p>
	Cross-jurisdictional and Coordination	12	<p>C1: “Disasters don’t know boundaries. So, working together benefits all.”</p> <p>C9: “You need to loop departments in earlier, both in grant writing and in initiative development and risk assessment, because getting people involved earlier could help both participation and implementation... It’s also just good for knowledge sharing.”</p>
6. Foster Partnership	Relationship building and engagement	29	<p>C2: “We sit down with all of our jurisdictions and explain to them what their hazards are and what some common mitigation strategies are. We have a toolkit of sample mitigation strategies.”</p> <p>C8: “It’s good to know your neighbors, talk to your neighbors, and have those relationships so you’re all kind of on the same page with the messaging you’re getting from different agencies, because we all have to work with the same state-level agencies.”</p>
	Knowledge sharing and ongoing coordination	32	<p>C1: “We hosted a bunch of subject matter experts on our 14 hazards, and had one of the experts present on it for about five minutes. And then people could fill out a ranking of importance.”</p> <p>C3, a key lesson has been meeting people where they are and accommodating schedules for local adoption and approval</p>

<https://docs.google.com/spreadsheets/d/1m7bFfCopPe9RlOj0Dygs-5RX2rqd7MZvbO8Ziu6z-0M/edit?usp=sharing>

Appendix F

Inter-coder Reliability Data

Inter Coder Reliability Data

n columns	264.00							
n variables	132.00							
n coders per var	2.00							
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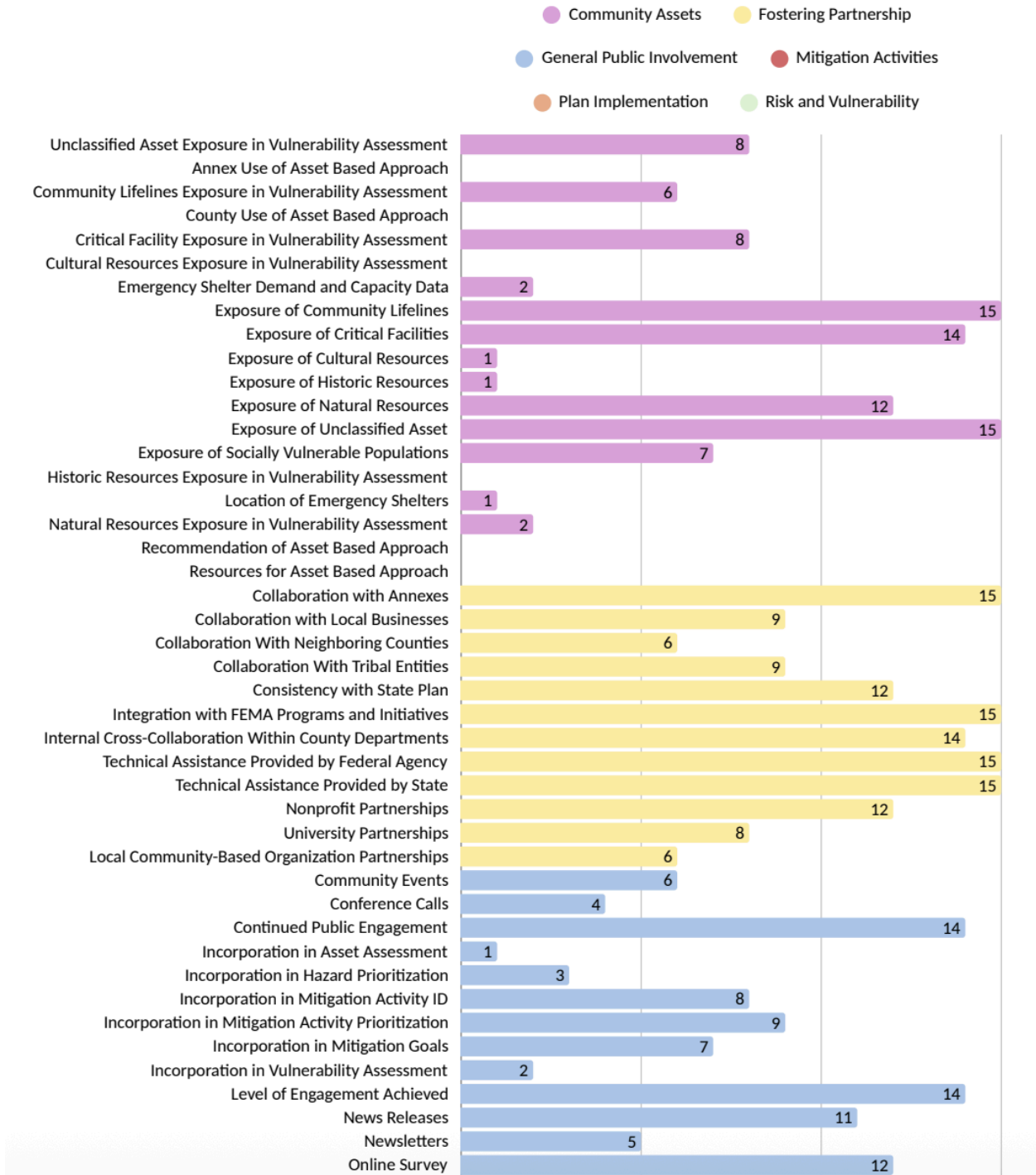
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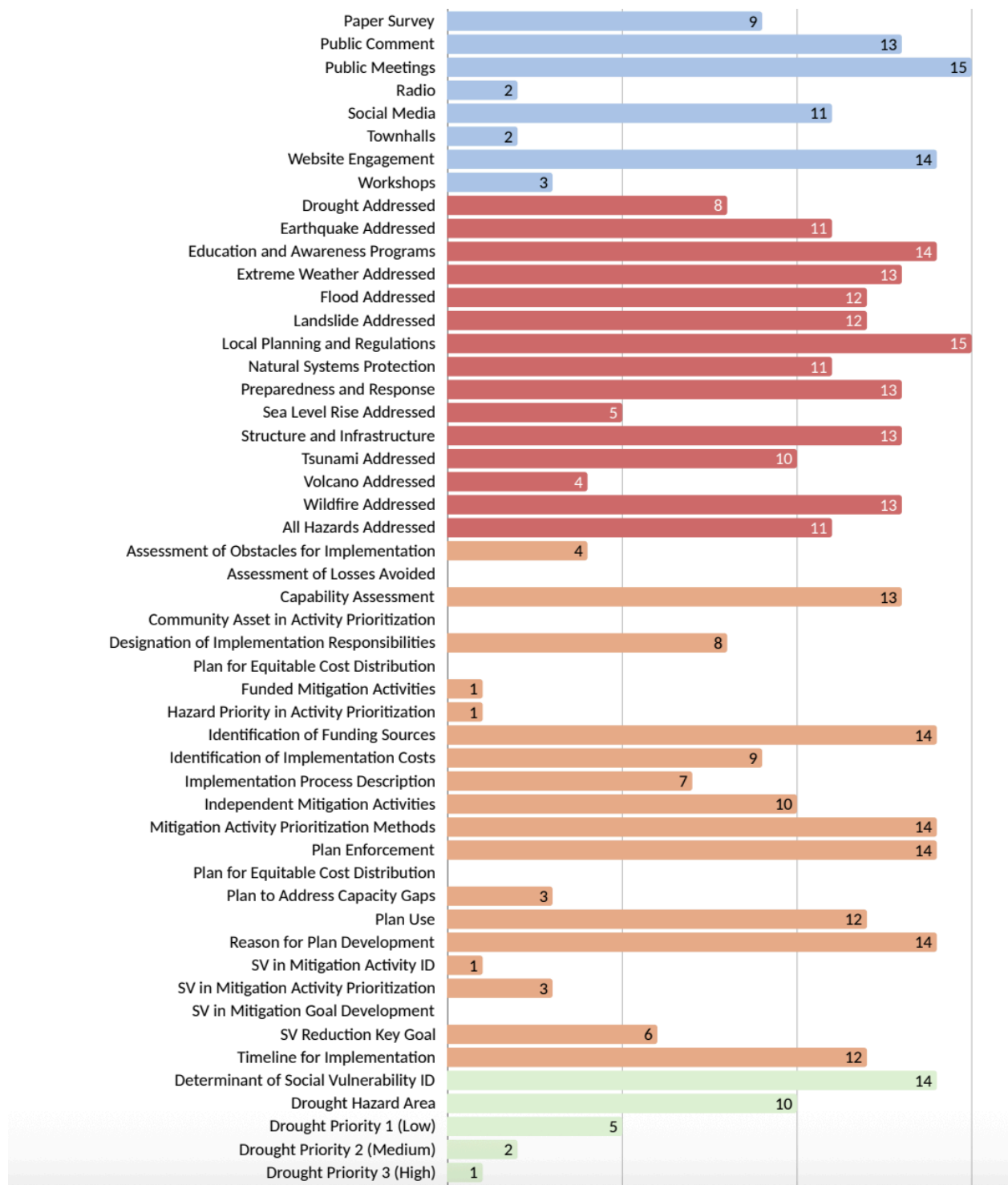
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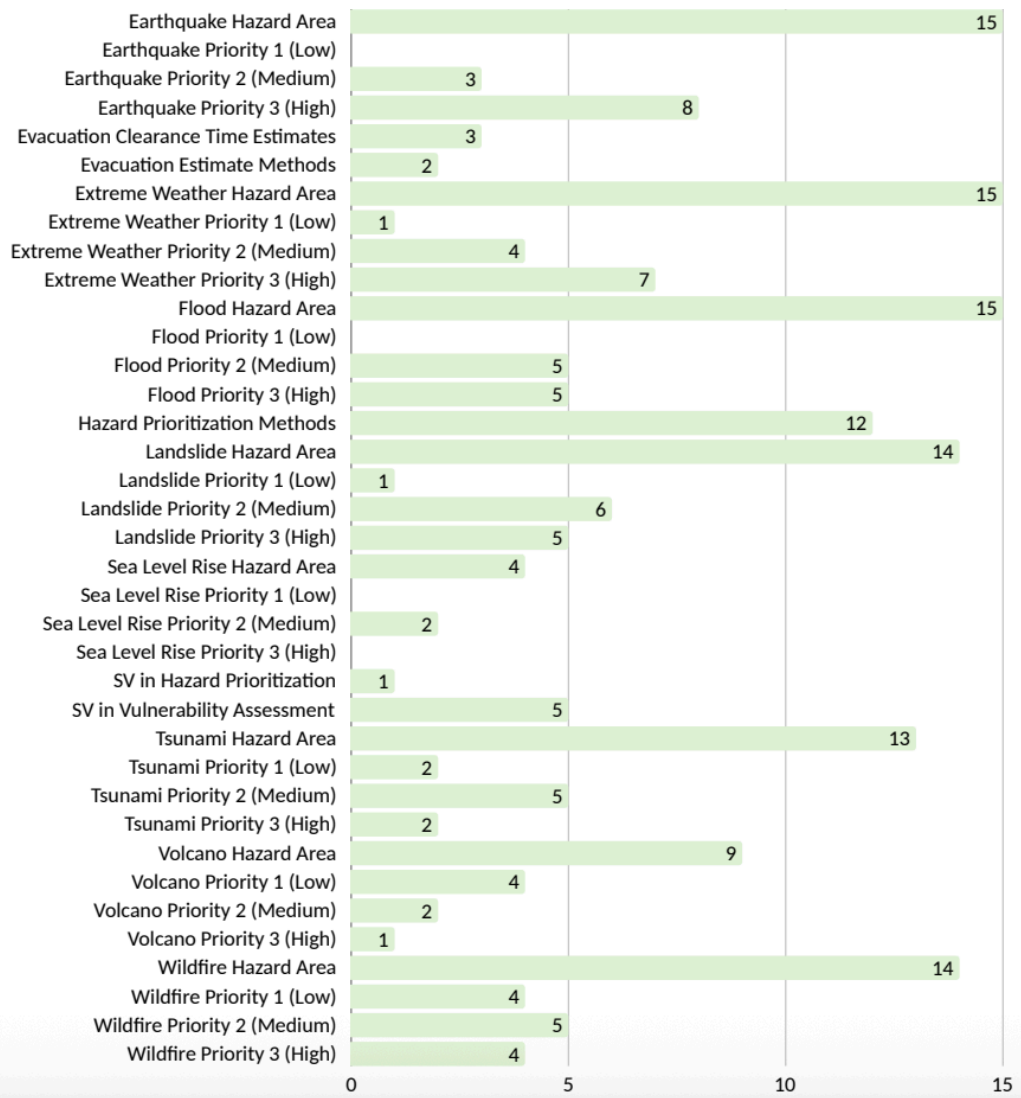
Appendix G

Full Codebook Results

Number of County HMPs with code







Appendix H

Coded Interview Responses - Barriers to Planning

The following table identifies the administrative barriers reported by planners during county interviews, including quotes from them (coded by county, C1-C10).

Barrier Umbrella Theme	Barrier Identified	# of Counties Reporting Barrier	Quotes from Interviewees, coded by County (C1-C10)
1. Institutional Capacity & Resource Scarcity	High turnover and lost institutional knowledge about HMP planning process	4 (40%)	<p>C8: "What I inherited was kind of cryptic."</p> <p>C1: "I literally had to call and go through all these people they had turned over, and they were like, we've never heard of that before. ... There's so much emergency management turnover that happens."</p> <p>C7: "[The HMP] was a student product, and the county did not maintain, for whatever reason, any of the data that went into it."</p>
	Gaps in staff skills or knowledge of specialized content for HMP	8 (80%)	<p>C5: "The skill that a lot of emergency managers probably don't have is getting everyone in the room together, getting the conversation going and providing enough structure that you really have a good process."</p> <p>C7: "Not having done any GIS, I didn't know how much they needed to update. ... I'm learning a lot. I guess I know about plans, but not having dealt with GIS, it's a whole new world."</p> <p>C2: "Just because you create a mitigation strategy does not necessarily mean that strategy has been created with people who are knowledgeable about what hazard mitigation is or how to effectively reduce risk. That's a huge gap we see in our planning process."</p> <p>C10: "Getting funding. That is something I didn't know about. I didn't know how to get FEMA hazard</p>

			mitigation funding. I didn't realize that we had to have a declaration at the county to be able to go in and try and apply to get the money. I didn't know that. If I didn't know that, probably most people wouldn't know that.”
	HMP planning-related funding constraints	5 (50%)	C8: “[When our approved] BRIC grant for \$500,000 [...] was canceled by the current administration, [...] I had zero budget, so what I did was piggyback on every other department’s projects.” C5: “It's very hard because mitigation is often expensive to implement without an actual disaster that galvanizes political and public opinion. ... To me it's often about economy of scale. [As] a small jurisdiction, my mitigation plan is far simpler than [a much bigger county's], but it's not one one-hundredth as simple, even if my department budget is one one-hundredth of theirs.”
	Time constraints	8 (80%)	C5: “In the past when we've done updates, we've just been like, let's just get this thing to the point where it's going to get approved and get it out the door and not really worry about how useful or appropriate it is for our community.” C7: “For someone [writing a hazard mitigation plan for] the first time, if that’s all they’re doing, they need a year and a half or two years to do it. A huge amount of time.” C2: “They’re overwhelmed capacity-wise. Some jurisdictions have told us they can maybe give us two hours over a few months. ... Many partners do not have enough time to help update the plan and may have only one person doing it.”
2. Administrative & Regulatory Friction	Shifting federal requirements	7 (70%)	C4: “The crosswalk between what FEMA wording wants and how I can then build that into something that can be utilized and understood and put into action at the local level is difficult [...], especially since FEMA and federal agencies change what they're expecting. ... It's the changing requirements that are the hardest to keep up with, especially between FEMA and what the city or the county says they're willing to do and can do.” C1: “We wrote the plan basically with all of that guidance, and then as soon as we finished it, [FEMA] were like, ‘you don’t have to do that anymore.’ ... People [are] nervous about what they should and shouldn’t say.” C5: “Having a plan that's subject to the whim of politics and not science is pretty challenging when your local jurisdiction is just trying to squeeze this in amongst lots of other things.”

	Maintaining separate planning requirements	2 (20%)	C9: "There's also the issue of maintaining separate planning requirements, like our separate flood planning tied to the community rating system. That program is kind of at risk now too, so having these extra things and needing to wrap them into our hazard mitigation plan is a challenge."
	Iterative review inefficiencies (HMP revisions loop)	2 (20%)	C1: "[To be] part of our annexes, [the jurisdiction] need[s] to adopt their annex and they need to send an adoption letter to us, which then we'll send to the state, which will then be sent to FEMA, and then back to the state, and then back to us. Then we'll send it back to the annex. ... That adds months onto things." C1: "It's a challenge when you're playing telephone. We act as the voice for all the jurisdictions as the County, and the state acts as the voice for us as they're the connection to FEMA. ... There can be so much disconnect." C4: "Version control becomes, so I'll send a version out to everyone and then I'll get their edits back and I'll have the master with all the edits in, but somebody will edit something that affected somebody else's. And the problem comes when the county is a Microsoft platform, and if you don't have a county login, you can't get into that. So I now have to host it outside of the county, which is frowned upon. I have used the state's Basecamp for it, but again then I have to have all my partners go to Basecamp and sign in, and it's just clunky. So I keep that version control. It takes me a little longer, but until there is a platform that allows external users in without all of the clunkiness or the barriers, it really isn't useful."
3. Stakeholder & Public Engagement Barriers	Partner engagement exhaustion	3 (30%)	C8: "Even just within my department, we had the Hazard Mitigation Plan, the Community Wildfire Protection Plan, the Countywide Emergency Management Plan being updated at the same time, and we had the countywide climate resiliency plan too. So all of us across departments in the county, and just across this one department, were all doing our different planning efforts, usually with the same stakeholders."
	Lack of incentives for annexes	2 (20%)	C1: "For [our jurisdictions writing annexes], the struggle that we really have is, from a good point in their perspective, why do I need to write this plan? I have a CMP, and I feel like we're just regurgitating words and putting it into this so that [we] could be eligible for a grant that [we]'re probably not going to get."
	Public participation challenges (lack of interest or ineffective)	5 (50%)	C5: "There's a lot of noise and perception around what needs to be done. I don't want to minimize public involvement because I think it can be important. But recently it's almost more like group therapy than it is productive engagement." C1: "A lot of the ones from the public survey we got were just absurd comments from people that are hard to filter through."

			<p>C3 : “When we sent it out and asked for public comment, I got two. And that surprised me that I got that many. It's just hard to get the public to engage in what is a dry process. Unless people from the public are impacted by some of these hazards, they're going to be less likely to have it feel like it's a real thing to them.”</p> <p>C6: “We went from two four inch binders to probably now four four inch binders if you print it out. ... You're not going to get much public input just because of the sheer size of [the HMP].”</p>
4. Implementation & Alignment Gaps	Misalignment of federal requirements and local needs	5 (50%)	<p>C5: “I think where we often struggle in emergency management, and it's not unique here, is the one-size-fits-all approach.”</p> <p>C4: “The problem with the FEMA review is the FEMA review is looking to make sure that checkboxes are marked, not really how applicable they are to the local community.”</p> <p>C6: “I want to make sure I tick the boxes but at the same time I don't want to miss out on something that is actually really important.”</p> <p>C10: “The planning requirements from FEMA are onerous. They're not tied to what we're trying to do with hazard mitigation. They're just not. You can look at our plan. There are hundreds of pages of factual details that nobody cares about. And yet, if I didn't put them in, I wouldn't pass FEMA scrutiny. ... There's just so much stuff that we don't need, and we shouldn't have to do. We should be focusing our time and resources on things that actually matter. ... [For example,] the history doesn't change. ... I should be able to just cite it and stick it in an appendix from the original hazard mitigation plan.”</p>
	Lack of stakeholder planning or clear role responsibilities	2 (20%)	<p>C6: “an agency that isn't us one of the issues that comes up is the fact that Seattle City Light does not have alarm sirens even though if their dams go it will definitely have some major impact”</p>
	HMP as planned vs. in practice	1 (10%)	<p>C7: [After an emergency dam breach alarm was accidentally tripped by a private company doing construction:] “The response to that didn't go quite as well as it could have. The towns downstream were like, is this real? ... They're calling 911. 911 didn't really know about the system. So then they're trying to talk to the emergency management folks who are now trying to call the dam folks, but the number that they have is not the people who are actually at the dam. So there was a period of time where a lot of people were highly stressed, thinking they're about to be inundated with this huge wall of water, and nobody's able</p>

			to give information. Also we realized that the company, because this happens to be a private industry, wasn't taking it seriously. They weren't putting anything out publicly, nothing on their webpage, not actively contacting 911 to say it is a false alarm."
5. Data Challenges	Lack of FEMA standard for quantifying risk	1 (10%)	C1: "[A]t the end of the day the risk assessment is basically all vibes. It's really hard to get real concrete numbers."
	Gathering the wide variety of subject matter expertise needed for the HMP	5 (50%)	<p>C7: "We're just going to do a basic update. We have a preliminary floodplain update that FEMA gave us... then we have a new report on the hazards from the USGS, but that's not final. DNR is going to have new wildfire mapping coming out, but probably not until this summer. [Our] County had a consultant come in and do climate change coastal and riverine sea level rise analyses, but all the coastal folks haven't agreed to which of the three scenarios will be used. And we can't have [one city] using one scenario, [and another city] using another one."</p> <p>C5: "The basic challenge is that different things have become so large and complex that you have to hire a consultant."</p> <p>C6: "In some cases, it's too many resources, you know. All the different data sources, all the different guides that are out there, all the different variety of contractors and their different ways of doing it ... how do you winnow that down to what you need for your particular entity?"</p>

Appendix I

Coded Interview Responses - Existing Resources for Planning

The following table combines resources that planners reported using for hazard mitigation planning during their county interviews. They have been categorized into one of six umbrella themes, and some have been further organized by sub-theme for added nuance. Finally, quotes from the interviews support the themes and offer additional insight into the resources that planners use.

Resource Umbrella Theme	Sub-theme Identified	Quotes from Interviewees, coded by County (C1-C10)
1. Templates & checklists		<p>C10: "Take the whole Saturday. Find a really good hazard mitigation plan from another county and read it. Then read the FEMA guidelines, because you have to know what they are, and then put on a piece of paper what the plan is for you to actually be able to meet those goals. and put it in English, not what FEMA is saying so that you understand what you need to do."</p> <p>C4: "If you do not have a multi-hazard mitigation plan or a hazard mitigation plan of any sort, run to everyone that has one and pull all of their stuff. Don't be afraid to plagiarize. Do not think you have to write this thing on your own."</p> <p>C2: "We have a toolkit of sample mitigation strategies that we've made for a wide variety of hazards in our area and from a wide variety of jurisdictions' perspectives. They can take those as templates."</p> <p>C6: "We did a basic template in terms of the hazard risk analysis part... and then the basic template for the annex... We boiled it down to about as simple as we could get it so that we could walk people through it."</p> <p>C6: "The checklist is a great tool that's something I'm currently married to in terms of making sure we've got all our i's dotted." (In other words, include a checklist at the end of the HMP, with a Gantt chart of mitigation strategies, who's working on them, and the progress that's being made.)</p>
2. Stakeholder engagement	Who to invite	<p>C6: "Consider the number of planning partners that you want to include and then double it and reach out further. I think my initial list was 200 emails that we started inviting."</p> <p>C3: "Gathering input from a diverse group of stakeholders and making sure that they knew that input was valued allowed for us to achieve those goals"</p>

and planning best practices	How to run meetings with stakeholders	<p>C5: “When I think about the mitigation planning process, ... I have a meeting with all of my key stakeholders and we have a facilitated discussion around what are our risks, what are our challenges, and then let's brainstorm some ideas on how we're going to mitigate against those, and it can be any number of things. ... to me it's like the classic, put the ideas up on some whiteboards and everyone gets five dots and you kind of get to vote on what are the top things.”</p> <p>C3: “I think the planning process is probably the most integral part. I think we have had a very focused, well-attended planning process, which has given us a living, breathing document that we have been able to work through.”</p>
	How to gather and prioritize input	<p>C10: “The counties and the cities scored their own projects. And the special districts, they scored their own projects. We basically used a scoring system.”</p> <p>C5: “To me it's the classic, put the ideas up on some whiteboards and everyone gets five dots and you get to vote on what are the top things.”</p>
	Where to do public outreach	<p>C10: “Because we're a small, rural county, we know where our people show up for events. So we showed up for 4 days at the county fair.”</p> <p>C10: “In the hazard mitigation plan, we wrote [the introduction] so that the public could just read 18 pages and understand why we're doing it, why it's important and why they need to be doing preparation with respect to all of the hazards we have in our county.”</p>
3. Collaboration and peer learning		<p>C8: “Find your subject matter experts and make them help you develop the content. This is not something that can be done in a vacuum. It's not something that should be done by one person. This is a group project.”</p> <p>C8: “I talked to [another] County a lot because they were about a year ahead of me in their update process. We shared templates. There was a lot of ‘This is how I'm going to do it, how are you going to do it?’ We ended up with slightly differently structured plans, but that sharing was really helpful.”</p> <p>C7: “We received grant money during the last [HMP], so a professor at [a local] University got the project for their class and they really helped.”</p> <p>C10: “A lot of times, you look outside of your state to find things. Research is easy, so I looked around. You can tell when something is good. You know, you start reading it, you can understand it, for one thing. It's written in English.”</p>

<p>4. Integrating HMP into broader planning & operations</p>		<p>C10: “Well, we use [our county HMP] whenever we're trying to go for grants, that's number one. We're using it currently to satisfy an element of our comprehensive planning. and so, in our comprehensive plan, under the Growth Management Act, we're going to be attaching it as part of our comprehensive plan.”</p> <p>C10: “I got money using the Climate Commitment Act to do my hazard mitigation planning in Washington state. That had never happened before. But because it dovetailed with the comprehensive planning, and because there was this new climate resilience element, I was able to basically marry our doing our climate resilience and our hazard mitigation planning together. I don't think there's any other county in the state who did that. But if I didn't have that money, we would have had a very, very, very hard time trying to check all the boxes that FEMA requires us to do.”</p> <p>C8: “One of our biggest changes this time around was integration into capital planning, and we made a lot of good headway for this county in integrating that into our capital improvement program. We wanted to make sure it's not just a standalone document.”</p> <p>C8: “Our biggest thing is having that very strong connection between mitigation and capital projects, which we have not had previously. We added in that extra layer of saying, “Hey, when you're proposing a capital project, you have to screen for hazards and you have to come up with projects that could mitigate those hazards.”</p>
<p>5. Technical assistance from FEMA & state</p>		<p>C4: “We utilize the state resources in their hazard mitigation plan unit when they come down. They do help us, and if I have problems or things, I normally get to spend at least a couple days with them, and I pick when those are so that I can strategically have them where my known bottlenecks or pinch points are so that I can get past those faster.”</p> <p>C6: “I love going to open office hours [with Kevin Zerbe at WA Emergency Management Division (EMD)] even if it's just to listen to everybody else's questions because I may not know the question to ask and if somebody else does it's like ‘oh let me write that down because that was a really good point.’ ... Being able to talk through some of that stuff with what the state people are actually expecting is helpful to be able to figure out what it is that you actually need to be paying the most attention to.”</p> <p>C5: “The team at EMD, they seem to be doing what I think is going to be most helpful, which is they're willing to take a look at my plan and kind of give me a metric of what do I need to change and shift based on their understanding of FEMA's current requirements, and where can we simplify. That's really helpful.”</p> <p>C1: “Ellen [Chappelka of WA EMD] was great. She helped. She went to multiple of our steering committees and was super helpful because she basically was guiding us through our steering committee, like, ‘This is what you need to be focusing on.’”</p>

6. Knowledge management and institutional continuity		<p>C1: “[when there's a lot of turnover] not[e] if things are in progress, how they're started, comment sections of what that might look like.”</p> <p>C7: “There's a checklist at the end that has all the projects that everyone's working on. And then it has each of the five years into the next update to put down where they are on that project. Then there's a comments area.”</p> <p>C10: “I spoke to a very smart guy, his name is Jim Buck, and he had done the prior hazard mitigation plan. Without him, I pretty much wouldn't have known anything. But he had the historical knowledge to tell me what I should be thinking about. So, it was making sure that I had somebody who actually had lived it and done it.”</p>
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Appendix J

Coded Interview Responses - Requested Resources for Planning

The following table combines resources that planners requested from the State (i.e., the Washington Emergency Management Division) to assist them with their hazard mitigation planning efforts. They have been categorized into one of six umbrella themes, and some have been further organized by sub-theme for added nuance. Finally, quotes from the interviews support the themes and offer additional insight into planners’ operational resource needs.

Resource Umbrella Theme	Resource Identified	Quotes from Interviewees, coded by County (C1-C10)
1. Templates	<ul style="list-style-type: none"> -Sample HMP that’s been approved, or template based on an approved HMP -Mitigation strategies for coastal resilience -Templates for running SME review/assessment meeting, including structure of meeting, PPT, deliverables -Mid-cycle HMP evaluation -Risk assessment templates -Initiative templates -How-to doc on using Hazus 	<p>C7: “Knowing that somebody liked it beforehand so that I don’t need to go in and make massive structural changes to it. ... a template, someplace to start because they’re nebulous in some ways of what and how to do it.”</p> <p>C2: “A coastal resilience toolkit for mitigation strategies for storm surge, flooding, sea-level hazards, tsunamis, erosion, landslides, and similar hydrological hazards, would save a lot of time. If that toolkit included a few strategies that have been done before, like mix-and-match examples, and explained how to do them and what subject matter experts you would need to tailor them to your jurisdiction, that would be a great tool.”</p> <p>C5: “I can imagine a template for how to run your initial subject matter expert review and assessment meeting, or whatever we want to call it. Recommended, like here’s your introduction and here it is, even like here’s a PowerPoint template that talks you through some of the basics, where you kind of put that tool in people’s hands.”</p> <p>C9: “And then templates are very helpful. Risk assessment templates, initiative templates, recommendations of best practices, all of that is helpful.”</p> <p>C3: “Having templates and guides for how the plan should look in the end would be really helpful, because we know that FEMA’s requirements are constantly changing. Just having somebody at the state level keep up with those changes would be helpful.”</p>

	-Planning practices	
2. HMP review	-Help from FEMA -Help from WA EMD -Dashboard showing progress updates (for process transparency)	C5: "if the other folks at EMD are willing to sort of shepherd my plan through the FEMA review process, that's pretty great." C6: "With ours being so large -I mean we went from two four inch binders to probably now up to four four inch binders if you print it out- I think being able to submit it in sections would probably be good. I know Kevin [Zerbe from WA EMD] has said that he'll take whatever I can give him at this point so that he can start looking over them ahead of time."
3. Maintenance	More partners involved in process	C4: "The resource that would be helpful and useful would be having more of those partners involved and wanting to make sure that it stays current."
4. Education	-For K-12 on local hazards -Seminars -Workshop on (nature-based) mitigation strategies	C8: "Educational opportunities and training opportunities. Especially for smaller jurisdictions, if I don't have the bandwidth as one person to help them, then maybe the state could have a seminar on how you could develop mitigation strategies or different types of strategies." C8: "Internally we're trying to get our surface water management folks to put on a workshop about natural-based mitigation strategies, but if the state could supplement that sort of work, then all of the education doesn't necessarily have to fall on individual planners like me. I'm not a subject matter expert in all these different types of mitigation strategies. I relied on my internal county partners for a lot of that. That kind of training would be very valuable, especially to smaller jurisdictions who might not know about a lot of different types of mitigation." C10: "They could set up a class, much like they do the short planning class, or maybe what should you be doing when you're first doing your hazard mitigation planning? What should you be thinking about? And literally have more of a formal course on that. That might be a good idea, including getting funding." C2: "K-12 education on local hazards. That could be pretty impactful in the long term for helping people understand their risk. It could also be a gateway into career opportunities. A lot of people don't know what hazard mitigation is, or what urban planning is, or what GIS is, or what emergency management is. That education would help develop more subject matter experts in 10 to 20 years."

5. Guidance/best practices	<ul style="list-style-type: none"> -Community engagement -What to focus on to pass FEMA review -Planning practices to help make HMP a living document 	<p>C8: "I also think having more information about how something is going to get scored or reviewed would help. For example, 'You need to meet this, this, and this to meet FEMA standards.'"</p> <p>C9: "I do think some guidance on best practices for community engagement would help."</p>
6. GIS Mapping Resources from the State		<p>C9: "Any tools surrounding data mapping would help, especially if you're focusing on the coastal side. Even if it's just sharing, 'Hey, you might not know about this, but this is a really great tool,' I find that stuff really helpful."</p> <p>C7: "Mapping is kind of a big thing. And I know for them it would be hard to be as granular as the county can be. But if there were some way to help support the county GIS to make it less work."</p> <p>C6: "We have a GIS department that is more than happy to help with all of the mapping data kind of things. A list of specific data sources that they want us to use would probably be good."</p>
7. Technical assistance	<p>Funding</p>	<p>C10: "Some technical advice [around funding] might be a good thing for some of the smaller counties because there's only two ways to get funding. You get a FEMA grant to do hazard mitigation planning or you get really, really creative, and you get lucky."</p> <p>C6: "The grant for hiring contractors for planning was a monumental undertaking so if they could make that process easier somehow."</p>
	<p>Subject Matter Expertise</p>	<p>C10: "If they're not going to be able to provide us money, maybe they could provide us some technical assistance. I mean somebody who understands tsunamis and Cascadia subduction events, somebody who could look at what we're writing and say, well, you missed something. That kind of technical assistance."</p>

Appendix K

County Planner Cookbook

The county planner “Cookbook” serves as a living document, intended to be updated by WA EMD and FEMA as needed to accommodate changes in local planning requirements and available resources. The following is the latest version as of June 2026.