State of Washington

Washington Military Department

EMERGENCY MANAGEMENT DIVISION

RFI25-013

REQUEST FOR INFORMATION (RFI)

for a

Feasibility Study for a Functional Recovery Building Code Standard

ANNOUNCEMENT

The Washington Military Department (WMD) is in the process of developing specifications for a feasibility study for a functional recovery building code standard and is requesting input from the vendor community.

Responders to this Request for Information (RFI) are encouraged to provide information about their methodologies and prior experience with social science research projects in emergency management, public safety, economic continuity, and critical infrastructure. This information is vital for assessing which solutions will meet the future needs of the residents of Washington State.

This RFI is issued solely for information and planning purposes and shall not constitute a solicitation. Non-response to this RFI will in no way precludes any vendor from participating in any future offerings or procurement requests developed as a result of this RFI. Responses to this notice shall not constitute offers and shall not be accepted by WMD to form a binding contract. Respondents are solely responsible for all expenses associated with their response and any associated travel or other presentation expenses, as applicable, to this RFI.

BACKGROUND

Washington State has the second highest earthquake risk in the United States. In the next 50 years, there is roughly an 84% chance of a magnitude 7.0 or greater earthquake occurring, and a 15-25% chance of a magnitude 8.0 or greater earthquake occurring. Washington faces risk from numerous earthquake sources, such as deep slab earthquakes, the Cascadia Subduction zone, and many surface

faults, including the Chelan and Seattle faults. Washington will face crippling infrastructure damage when the next earthquake occurs; buildings will be rendered unusable, bridges and overpasses will collapse, and there will be significant damage to power, water, wastewater, hospitals, and other critical infrastructure systems.

Current Washington State building codes (2021) for new construction primarily focus on life safety protection for typical structures. For new critical and essential facilities, a seismic importance factor is used to increase design forces for buildings and for select equipment systems to enhance the capability of these facilities to function following a design earthquake. More stringent lateral drift limitations are also imposed for the same purpose. However, functionality targets are not specified.

This means current building codes are designed to preserve the lives of the people in the building, it does not mean that the structure can be used or inhabited following an event such as an earthquake that affects its structural integrity. This limitation became evident after the 2001 Nisqually earthquake, which, at a 6.8 magnitude, caused significant disruptions due to structural and nonstructural damage. Nisqually highlighted that buildings meeting the minimum life safety standards could still experience substantial damage, leading to prolonged downtime and recovery periods.

In 2018, Congress re-authorized the National Earthquake Hazard Reduction Program (NEHRP) and called for moving the goal of seismic mitigation beyond life safety to a functional recovery standard of preserving or quickly restoring the basic intended function of buildings after an earthquake. A functional recovery standard would be a great leap forward in building resilience in Washington State and significantly improve recovery times. First responders operating out of facilities built to this standard would be able to respond. School buildings built to this standard could be used as shelters. Hospitals and medical facilities built to this standard would not collapse and could be functional right after an earthquake, saving lives.

PROJECT GOALS:

WMD, through the WA Emergency Management Division (WA EMD), plans to conduct a feasibility study to determine the need for and adoption of a Functional Recovery Building Code Standard. This will include defining the specific building code standards, costs, and implementation methods needed to achieve this goal. For the purposes of this study, functional recovery improves community resilience by ensuring essential facilities and functions rapidly recover after a seismic disaster.

This study will explore functional recovery building codes, standards, and guides that are in development in the United States and review existing literature on functional recovery as a concept and its policy implementation options. Input on priorities for recovery of facilities and services are essential will be gathered from representative communities throughout Washington State. Develop practical implementation options that include potential cost and policy recommendations.

This study plans to cover the entire population of WA, approximately 7.9 million people. The Washington State Enhanced Hazard Mitigation Plan (SEHMP) identifies 52% of the state population as living in the Greater Seattle area, including the counties of King, Pierce, and Snohomish. These areas, along with Clark and Kitsap Counties, are the most densely populated. The state is becoming more urbanized, which means that the effects on the built environment from an earthquake or the secondary impacts from earthquake-triggered fire or flooding are increasing. As a functional recovery performance level is centered on the prioritization of a community's needs during and after disasters, its application could vary across communities in Washington. This study seeks to explore these potentials differences

by assessing communities' geolocation, primary economic drivers, and type (rural, urban, suburban, etc.).

WMD intends for this study to explore:

- Functional recovery building code, standards, and guides that are being developed, have been proposed or adopted in other countries, states, or local jurisdictions with a high risk of earthquakes, or are developed by public or private organizations with expertise in earthquake performance standards and safety;
- The levels of functional recovery supported by current state local building and construction codes;
- The objectives, feasibility, necessary measures, and estimated costs and benefits of adopting and implementing statewide functional recovery building code standards, and how this assessment is impacted by whether the standards:
    - (A) Are mandatory or voluntary;
    - (B) Apply to only certain types of structures or prioritize certain types of structures;
    - (C) Apply to existing structures in addition to new construction;
    - (D) Are intended to apply to only specific seismic hazard levels; or
    - (E) Include nonstructural components as well as structural systems;
- The recovery time needed for various functions and services within each community
- The appropriate target recovery-based performance for existing assets and how it compares with that of new assets
- How statewide standards for functional recovery would fit into an all-hazards approach for state emergency response and recovery, specifically focusing on the nonstructural needs;
- Funding opportunities that provide for the coordination of state and federal funds for the purposes of improving the state's preparedness for functional recovery following a significant earthquake or tsunami;
- Equity considerations for the development of statewide building code standards for functional recovery;
- Assess what seismic hazard level should be associated with functional recovery (MCE ~2,500 year recurrence interval vs the design level earthquake ~500 year recurrence interval etc.)
- Gather and assess Washington's current technical standards to identify any gaps/opportunities to achieve functional recovery goals and costs to close gaps or pursue opportunities;
- Assess and prioritize which buildings to include (Risk Category IV, schools, lifelines etc.),
- Conduct asset mapping of essential facilities and services for representative communities;
- Identify the appropriate performance target for structural and nonstructural components necessary to achieving functional recovery for given recovery time goals;
    - Identify the nonstructural infrastructure system backups for water, power, wastewater, communication, etc. (i.e. generator, portable water system)
    - Identify necessary personnel, plans, and procedures
- Define what is practical and identify means for implementation;
- Assess impacts of implementation and no implementation;
- Conduct a cost estimate for implementation (including education and outreach) and compliance; and
- Develop actionable recommendations.

PROJECT NEEDS:

1. **Codes and Standards Analysis**
   - **1.1** Conduct a literature review and compile a comparative analysis of existing and proposed functional recovery code standards in the United States of America.
   - **1.2** Analyze Washington State current building codes and perform a gap analysis to identify how they address or fall short of supporting national functional recovery standards/goals.
   - **1.3** Assess WA needs for functional recovery standards.
     - **1.3.1** Provide recommendations and justification for specific seismic hazard levels to use for functional recovery design.
     - **1.3.2** Model and compare building performance under different seismic hazard levels to inform decision-making.
     - **1.3.3** Identify sample communities in WA (rural, urban, suburban, small, large, etc.).
     - **1.3.4** Conduct focus groups within the identified communities to gather input on what buildings are highest priority/most essential for community resilience.
     - **1.3.5** Create a list of structural and nonstructural systems/components requirements for building use/occupancy that is identified as highest priority/most essential. Include recovery time goals and specifications.
   - **1.4** Identify and assess requirements that fall outside of structural/non-structural categories, including: personnel, organization actions, equipment, processes, and preparedness steps necessary to meet recommended WA functional recovery standards.

2. **Options and Cost Analysis**
   - **2.1** Develop functional recovery building code/standards options for WA based upon identified needs and priorities. This should include the necessary actions and estimated costs and benefits of adopting and implementing each option.
     - **2.1.1** Evaluate implementation challenges, benefits, and compliance differences between voluntary and mandatory standards.
     - **2.1.2** Identify structure's use and service to prioritize; assess feasibility, cost, and benefits of different levels of standards
     - **2.1.3** Develop building prioritization framework based on community need/prioritization, function, risk, and critical services.
     - **2.1.4** Assess critical nonstructural systems and provide a plan for incorporating them into functional recovery standards.
     - **2.1.5** Prepare detailed cost estimate including training, inspection, QA/QC, outreach efforts, and building upgrades.
     - **2.1.6** Propose practical pathways (phased, region-specific, etc.) for implementing functional recovery codes across Washington State.
     - **2.1.7** Identify costs and who would bear the costs
   - **2.2** Assess how functional recovery standards could support broader emergency management plans; specifically nonstructural system requirements.
   - **2.3** Conduct impact analysis comparing implementation versus no action (economic, social, recovery timelines, etc.).

3. **Implementation and Funding**

   3.1 Research and compile funding opportunities (state, federal, private) available to support implementation; include eligibility and matching requirements.

   3.2 Analyze potential equity impacts; recommend equitable implementation strategies including underserved communities.

4. **Recommendations**
   4.1 Summarize findings into a prioritized set of practical, fundable, and equitable policy and implementation recommendations.

Timeline and Cost:

- Phase 1 (Oct 2025 – June 2026) - $200,000
- Phase 2 (Jul 2026 – 2028) - ?

QUESTIONS:

The information gathered through this RFI may inform the development of a possible future RFP. Do not include anything that would be considered a trade secret, or sensitive matter when answering these questions.

1. Based on the goals of the feasibility study, what gaps can you identify that the feasibility study should also include and what is your reasoning?
2. Based on the budget and timing of Phase 1, what would you consider feasible and what would be pushed off to Phase 2?
3. What should the feasibility study exclude and why?
4. Are there any challenges you foresee this study running into?
5. Describe the most cost-effective strategy for accomplishing the project goals.
    a. Detail the methodology
6. Are there alternative methodologies to consider?
    a. What are their associated costs?
7. Would the project need to be divided up into phases?
    a. How much would each phase cost?
    b. How long would each phase take to complete?
8. How many participants are needed for each community category in order for the results to be statistically significant?
9. What new technology has emerged in the last few years that would be relevant to this study?
10. What are the main pricing factors and components for this study (transportation, labor rates, distance, cost of material, etc.) that would affect feasibility of the recommendations?
11. Based on the tasks listed in this RFI, what are the minimum qualifications and expertise that the bidders should be expected to have?
12. Please describe your general approach to delivery services. What is your timeline for delivery? How do you optimize the delivery process to reduce travel time and total trips?
13. Identify any barriers for your business to bid on this opportunity.
14. Please provide any information you believe is relevant for WMD to consider in developing a solicitation for goods/services.
15. As part of the RFI response, please identify any areas of confusion or challenges in meeting any of the listed performance requirements.

DELIVERY OF RESPONSES:

Responses to this RFI should be submitted electronically to the RFI Coordinator listed below no later than **June 27, 2025 11:59PM Pacific Time.**

A response to this RFI is not a mandatory requirement for participation in any subsequent solicitations released by the State of Washington. The results of this RFI may be used in development of future solicitations. All vendor communications concerning this RFI must be directed to the RFI Coordinator.

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PUBLIC RECORDS

All documents (written and electronic) submitted as part of this RFI are public records. Unless statutorily exempt from disclosure, such records are subject to disclosure if requested. See RCW 42.56, Public Records Act. Businesses are strongly discouraged from unnecessarily submitting sensitive information (e.g., information that businesses might categorize as 'confidential,' 'proprietary,' 'sensitive,' 'trade secret,' etc.). For the purposes of this RFI no information considered confidential or proprietary should be included.

NO OBLIGATION TO CONTRACT

Release of this RFI in no way obligates the State of Washington to award a contract.

AMENDMENTS

The Military Department reserves the right to change the RFI timeline or other portions of this RFI at any time. All amendments will be posted on WEBS.

TO SUMMARIZE

WMD appreciates your thoughts and input and would also welcome any additional thoughts and comments related to this commodity.