

FY 22 HMA – Grant Application Review Summary

Subapplication Number	EMA-2022-BR-001-0029		
Project Title	BRIC		
Applicant Name	North Carolina Department of Public Safety		
Subapplicant Name	County of Scotland		
Project Type	Structural Retrofit		
Recommendation	Yes with Conditions		
Federal Cost (FEMA GO)	\$983,449	Phased Project	Yes
BCR (subapplication)	1.05	Duplicate Project	No
BCR (reanalysis)	0.00	Benefits (reanalysis)	\$0

Summary

This is a technical feasibility and cost-effectiveness review in support of the National Technical Review process. Additional Environmental Planning and Historic Preservation (EHP), eligibility and completeness, and funding limitation considerations may affect the selection of this subapplication for further consideration and funding. No contact was made with the applicant or subapplicant; this review is solely based on information provided in the subapplication.

Scope of Work

The scope of work is well-defined and clearly explains the activities necessary to complete the work. The subapplicant has submitted a subapplication for the structural retrofit of one property at 1403 West Boulevard, Laurinburg, North Carolina, located in Flood Zone X. The building would be demolished and reconstructed further from the river, elevated 20 inches, and hardened to withstand a Category 4 hurricane. The subapplication also references the addition of 16,000 sq ft to the emergency operation center, but this is not part of the proposed project.

Technical Feasibility

Project Schedule

The schedule duration is 25 months. The schedule does not include all items in the scope of work but appears reasonable. The schedule does not include permitting, inspections, and project closeout.

Cost Estimate

The cost estimate includes sufficient line items consistent with the scope of work; however, the values in the budgets provided as supporting documentation do not match the values listed in the subapplication cost estimate. The source of the line items included in the subapplication cost estimate is not clear. The budgets also include costs for the expansion of the emergency operations facility, but the subapplication cost estimate did not appear to include these costs.

Technical Design Information

The following information and documentation were provided to support the project:

Item	Documentation	Comment
Design Codes and Standards	Scope of work	The project will be designed per 2015 International Building Code (IBC) to withstand Category 4 hurricane force winds with a Building Code Effectiveness Grading Schedule of 3.

Item	Documentation	Comment
Design Drawings	N/A	Documentation was not provided to support the project's design.
Before-Mitigation Level of Protection	Scope of work narrative	Before mitigation, the level of protection was a Category 3 hurricane rating and vulnerability to flooding.
After-Mitigation Level of Protection	Scope of work narrative	After mitigation, the level of protection will be elevation to the 100-year floodplain and resistance of Category 4 hurricane windspeeds.
Flood Hazard Data	N/A	The site is not in the Special Flood Hazard Area.
Independent Solution	Scope of work narrative	The project does not rely on the completion of another project to mitigate damage.

Based on the documentation provided, the project is technically feasible and effective at reducing risk to individuals and property from natural hazards. However, the scope of work is not clear, and the cost estimate does not match the supporting documentation. The following conditions were identified:

- Verify that the cost estimate reflects the full cost to implement the project, and that the cost estimate matches the supporting documentation. If they do not match, amend the cost estimate to match the supporting documentation.
- The cost estimate should not be submitted as a lump sum. Amend the cost estimate to contain sufficient detailed information. Refer to HMA Guidance, Part IV, Section H.1. for guidance on creating a cost estimate.
- Verify the eligibility of the cost estimate line items.
- Provide documentation to support that the design is in line with industry standards (including the International Building Code).
- Provide documentation to support the proposed level of protection. Demonstrate how the proposed relocation and elevation will reduce flood risk.
- No confirmation was provided indicating that the future 16,000 sq ft expansion would be designed to the same level of protection as the proposed mitigated 4,800 sq ft building. The retrofitted and repaired building components would provide less than the desired level of protection to the structure if the remainder of the building envelope is susceptible to damage at current code level wind loads. Additional documentation should be provided to verify that any future expansions will be designed to the same design and performance criteria as the proposed mitigation action and/or that future expansions will be structurally independent to avoid potential damage to the proposed building funded as part of this project.
- Provide a list of missing technical data that will be collected and a list of minimum deliverables to be completed during Phase 1.

Provide the following Phase 1 deliverables to verify technical feasibility of the proposed project:

- Vulnerability assessment and/or other relevant technical data.

- Engineering design (typically 30/60/90) and cost estimate.
- Technical body of information needed to support the desired level of effectiveness/protection or amount of risk reduction.

Cost-Effectiveness

The Benefit-Cost Analysis (BCA) was completed using the FEMA BCA Toolkit based on historical damages for one nonresidential structure.

The following was found during review of the submitted BCA:

Cost Estimation

Input	Value	Evaluation
Project Useful Life (PUL)	50 years	This value is consistent with the FEMA standard value for public building retrofits.
BCA Toolkit Initial Project Cost	\$1,044,937.43	This amount is not consistent with the subapplication's project cost estimate. The subapplication cost estimate without management costs is \$1,244,937.43.
Annual Maintenance Cost	\$5,000	This amount is reasonable. Maintenance costs for structural retrofit projects are expected to be minimal.
BCA Toolkit Total Project Cost	\$1,113,941	This amount is calculated based on the initial project cost, the annual maintenance costs, and the PUL.

Historical Damages

Input	Evaluation
Facility Type	The facility type of critical facility building was used in the BCA. This input is consistent with the proposed project in the subapplication.
Analysis Duration	No documentation was provided to support an analysis duration of 30 years.
Before-Mitigation Damages	The before-mitigation damages were based on loss of function for the emergency operations facility. A signed letter from a public official stated that the facility had experienced 20 days loss of function each year from 2010 to 2021. The unknown frequency calculator was used to determine the recurrence intervals. The damages were based on an annual operating budget of \$3,000,000, which was not supported by documentation.
After-Mitigation Damages	No after-mitigation damages were included in the BCA; however, residual risk remains and should be included.

BCA Assistance

This subapplication qualified for additional BCA assistance. Additional information is needed to show the project as cost effective. Additional benefits may include reduced risk of physical damages, loss of function and life safety, where applicable. Ecosystem services and social benefits may also be considered.

Based on the documentation provided, the project's cost-effectiveness could not be determined. The following conditions were identified:

- Additional information is needed to show the project as cost effective. Additional benefits may include reduced risk of physical damages, loss of function and life safety, where applicable. Ecosystem services and social benefits may also be considered.

Provide the following Phase 1 deliverable needed to verify cost-effectiveness:

- Refinement of the BCA.

Conclusion

Based on the information provided, the project is technically feasible, and additional information is needed to confirm the cost effectiveness. It is recommended for further consideration with the following conditions:

- Verify that the cost estimate reflects the full cost to implement the project, and that the cost estimate matches the supporting documentation. If they do not match, amend the cost estimate to match the supporting documentation.
- The cost estimate should not be submitted as a lump sum. Amend the cost estimate to contain sufficient detailed information. Refer to HMA Guidance, Part IV, Section H.1. for guidance on creating a cost estimate.
- Verify the eligibility of the cost estimate line items.
- Provide documentation to support that the design is in line with industry standards (including the International Building Code).
- Provide documentation to support the proposed level of protection. Demonstrate how the proposed relocation and elevation will reduce flood risk.
- No confirmation was provided indicating that the future 16,000 sq ft expansion would be designed to the same level of protection as the proposed mitigated 4,800 sq ft building. The retrofitted and repaired building components would provide less than the desired level of protection to the structure if the remainder of the building envelope is susceptible to damage at current code level wind loads. Additional documentation should be provided to verify that any future expansions will be designed to the same design and performance criteria as the proposed mitigation action and/or that future expansions will be structurally independent to avoid potential damage to the proposed building funded as part of this project.
- Provide a list of missing technical data that will be collected and a list of minimum deliverables to be completed during Phase 1.
- Additional information is needed to show the project as cost effective. Additional benefits may include reduced risk of physical damages, loss of function and life safety, where applicable. Ecosystem services and social benefits may also be considered.

Provide the following Phase 1 deliverables needed to determine technical feasibility and cost-effectiveness:

- Vulnerability assessment and/or other relevant technical data.
- Engineering design (typically 30/60/90) and cost estimate.
- Technical body of information needed to support the desired level of effectiveness/protection or amount of risk reduction.
- Refinement of the BCA.
- Additional documentation required to support compliance with eligibility, technical feasibility, cost-effectiveness, and EHP requirements.

This review is an evaluation of the project's technical feasibility and cost-effectiveness. Additional EHP, eligibility and completeness, and funding limitation considerations may affect the selection of this subapplication for further consideration and funding.