



Urban Coastal Community Resilience Challenge

Protection of Buildings

Problem

Buildings in flood plains experience different levels of flooding. Some buildings may experience several feet of flooding and require substantial modification to remain viable (e.g., building elevation). Others may only experience a few inches (6-8 inches) and minor modifications to avoid the costs of damage.

Many buildings experience up to 8 of flooding several times per year. To avoid recurring flood damage and insurance claims, effective, affordable and readily deployable remedies are needed.

Also of concern is how these modifications are financed. Are costs shared among home/building owners, the City, and insurance companies (or others)? What are viable and sustainable options for funding these efforts? Homes in Norfolk Vision 2100's "Yellow Areas" are representative of many of these issues ([see Vision 2100](#)).³ These areas are established neighborhoods that experience more frequent flooding.

What We've Heard

Coastal communities seek innovative solutions to maintain the viability of existing buildings facing different levels of flooding.

Although not meant to be comprehensive, below are suggested areas in need of innovative solutions identified by stakeholders in Hampton Roads and other coastal communities. Submissions do not need to be limited to these areas. However, to be eligible for funding from RISE, entrants **must focus on a Hampton Roads need**, while demonstrating the ability to scale to other communities.

- Structural or non-structural alternatives beyond traditional approaches such as costly house elevation that individual homeowners could buy.
- Cost effective protections against the higher frequency, lower magnitude recurrent flooding.
- Alternatives to raising existing homes up above the Base Flood Elevation. For instance:
 - A modular building system that can be adapted to increasing flood levels (e.g., floor levels installed as planes that can one day be mechanically lifted).
 - Retrofit solutions for existing buildings beyond FEMA approved solutions.
- "Rainbomb" detection, warning and applications to protect buildings quickly.
- Quick-reacting, affordable building protection for "rainbomb" (rapid, short-lived) flooding events.
- Innovative financial models to make building modifications and/or protections more affordable to building owners.
- Augmented/virtual reality applications for enhanced resilience infrastructure installation, operation and maintenance as related to buildings.

Note that the RISE funding cannot be used to make modifications or improvements to privately owned properties, but could be used in other areas (e.g., to develop and validate various approaches and business models).

³ <https://www.norfolk.gov/DocumentCenter/View/27768/Vision-2100---FINAL?bidId=>