

FLOOD HAZARD MITIGATION ELEVATION

September 9, 2021





Roderick Scott, CFM

Board Chair

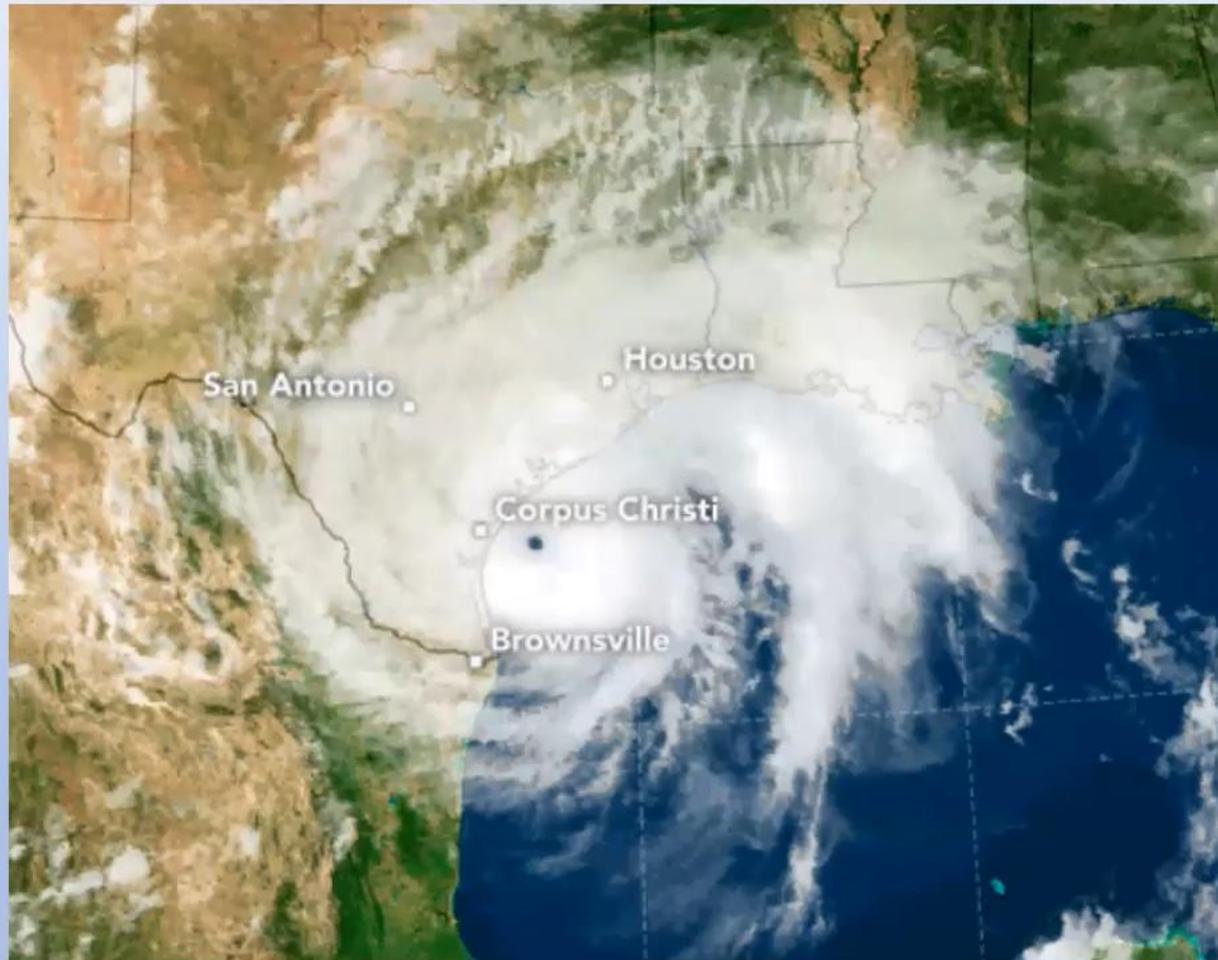
Flood Mitigation Industry Association

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The climate is changing



Storms are getting more frequent and severe



Flood risk is rising



Photo by Joe Raedle/Getty Images

Higher risk = higher insurance rates



Premium to be paid at 4 feet below BFE:

\$9,500 / year
\$95,000 / 10 years



Premium to be paid at BFE:

\$1,410 / year
\$14,100 / 10 years



Premium to be paid at +3 feet above BFE:

\$427 / year
\$4,270 / 10 years

BFE = Base Flood Elevation

FLOOD HAZARD MITIGATION



- **Every dollar spent on elevation saves \$6 dollars in damage repairs**
- **Mitigation saves \$ on flood insurance**



FLOOD HAZARD MITIGATION



- **Mitigation preserves property values**
- **Mitigation preserves property taxes**





FLOOD HAZARD MITIGATION



- **Mitigation creates good construction sector jobs in all of the professional trades**



How many are there out there?



- FL has the 4rd highest number of National Flood Insurance Program- NFIP loss claims in the US
- FL only has around 30% flood insurance coverage on buildings in flood zones
- The total FL numbers may be +350,000 high flood risk pre-flood map buildings in FEMA flood zones!



Satellite view of SE TX post Hurricane Harvey



FEMA flood maps

FEMA Flood Map Service Center: Search By Address

Enter an address, place, or coordinates: ?

2623 Herschel St, Jacksonville, FL 32204

Search



Whether you are in a high risk zone or not, you may need [flood insurance](#) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](#) to reduce flood risk damage.

Search Results—Products for JACKSONVILLE, CITY OF

Show ALL Products »

The flood map for the selected area is number **12031C0362J**, effective on **11/02/2018** ?

DYNAMIC MAP



PRINT MAP/
FIRMette

MAP IMAGE



DOWNLOAD
FIRM PANEL

Changes to this FIRM ?

- Revisions (0)
- Amendments (3)
- Revalidations (0)

<https://msc.fema.gov/nortal/home>



FEMA flood maps



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<https://msc.fema.gov/portal/home>

How much is it going to cost?



- It is an investment
- Cost Benefit = Add the value of the building, plus the cost of past damages, plus the cost of future damages, the lost property value, the lost property taxes and the cost of replacing the building and then subtract the cost of the project



How much is it going to cost?



Federal income tax
credits for
adaptation of
historic income
producing
buildings



THE SECRETARY
OF THE INTERIOR'S
STANDARDS FOR
REHABILITATION &

GUIDELINES
ON **FLOOD
ADAPTATION** FOR
REHABILITATING
HISTORIC
BUILDINGS



U.S. Department of the Interior
National Park Service
Technical Preservation Services

How much is it going to cost?



- We must be able to finance our mitigation projects
- Cost Benefit = must be equitable to all!



How do we do this?



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ELEVATE
before it's too late!

IASM
International Association
of Structural Movers

The International Association of Structural Movers (IASM) is the 501c-4 professional organization comprised of member companies involved in projects to elevate and/or relocate buildings for flood hazard mitigation.
(803) 951-9304 | Info@iasm.org | iasm.org

COMBATING RISING FLOOD INSURANCE COSTS

Flooding is increasing across the US, requiring communities to examine alternatives to the cycle of repetitive flooding. The cost of the flood recovery cycle is VERY EXPENSIVE, not only monetarily, but everyone involved has lifetime challenges as they navigate flood recovery. This is now compounded by rapidly rising flood insurance policy rates on all older buildings built before the first flood insurance rate map for the community. Elevation can help offset those rates *dramatically*.

FLOOD INSURANCE PREMIUMS:

Elevation Level	Annual Premium	10-Year Total Premium
4 ft below BASE FLOOD ELEVATION	\$9,500/yr	\$95,000/10 yrs
level with BASE FLOOD ELEVATION	\$1,410/yr	\$14,100/10 yrs
3 ft above BASE FLOOD ELEVATION	\$427/yr	\$4,270/10 yrs

WHY ELEVATE?

- ENGAGES MULTIPLE CONSTRUCTION TRADES & LABOR**
- ENVIRONMENTALLY RESPONSIBLE**
the recycling and reuse of existing buildings results in a reduction of TONS of solid waste to landfills
- SAVES NATURAL RESOURCES**
every 1,000 sq ft of wood frame building uses approximately 250 TREES
- PRESERVES HISTORIC BUILDINGS**
- STABILIZES THE REAL ESTATE MARKET & PROPERTY VALUES**
- REDUCES RECOVERY EXPENDITURES**
every \$1 invested in elevation saves \$7 in recovery expenditures
- SIGNIFICANTLY REDUCES**
• THE RISK OF FLOODING
• FLOOD INSURANCE POLICY RATES
- PRESERVES PROPERTY TAX REVENUES**
which support schools & government operations, infrastructure & public safety, & bonding for public projects
- REVERSES THE CYCLE OF FLOODING**
- KEEPS THE COMMUNITY TOGETHER**
Tearing down homes to create green space not only results in the loss of property taxes critically needed to fund public services and schools, you lose the families that built the community. This option should often be the last alternative.

Get financing arranged



Grants – Check with
local government



Get financing arranged



- Equity loan – banks
- FHA203K loan/mortgage



Get financing arranged



Cash



Get financing arranged



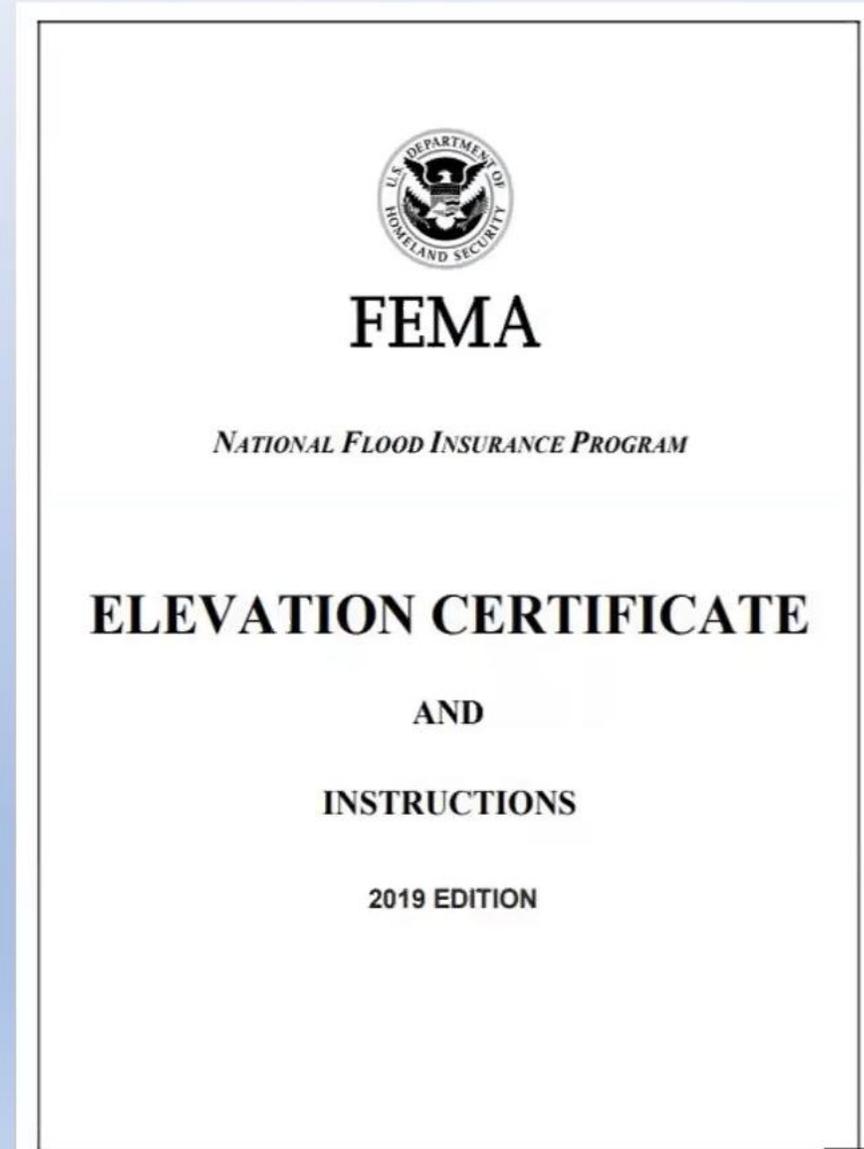
Future revolving loan
program –
STORM Act 2021



Get elevation certificate



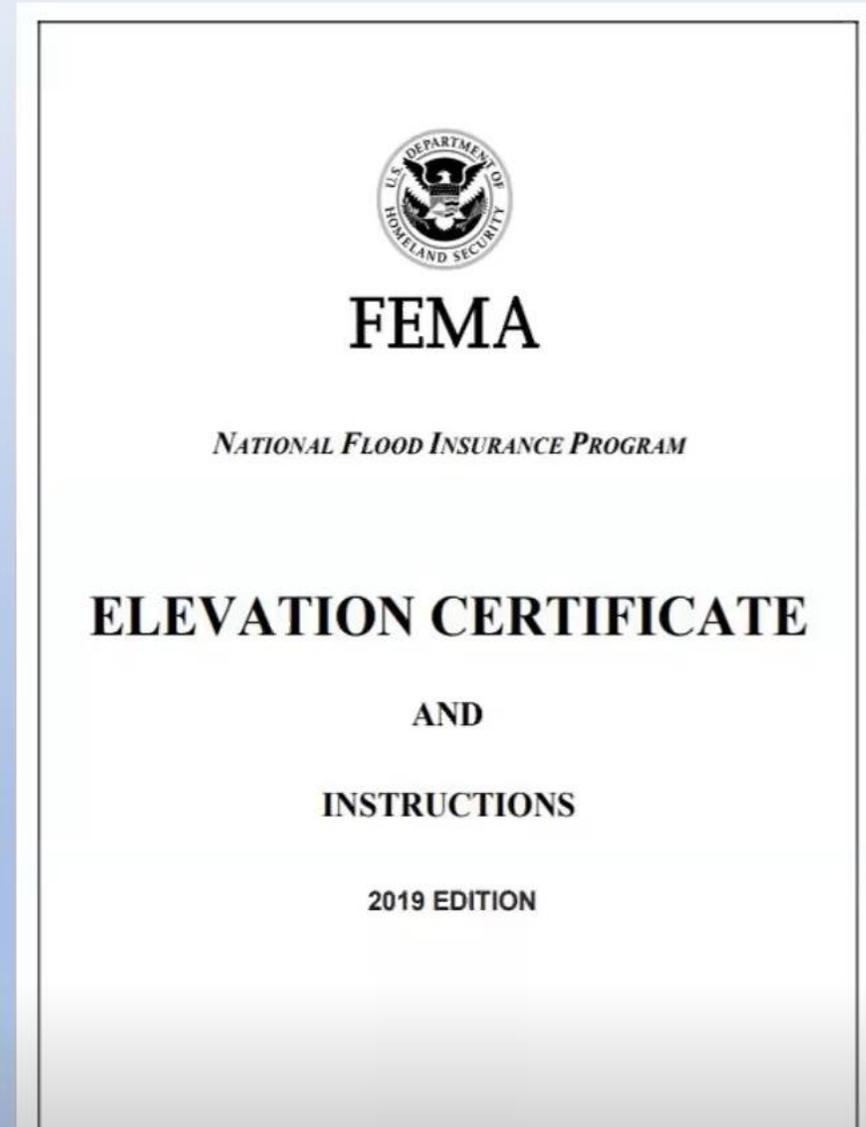
- Important document if you are located in a FEMA flood zone
- Elevation Certificate helps FEMA set the flood insurance rates



Get elevation certificate



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- Elevation Certificate helps FEMA set the flood insurance rates



Get elevation certificate



Exercise

1. Take the number in B9 (Base Flood Elevation-BFE), 10ft

2. subtract the number in 'a' and that is how far below the minimum FEMA flood map elevation the home is:

5ft is the minimum required elevation

ALWAYS CHECK WITH LOCAL BUILDING DEPARTMENT

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
B1. NFIP Community Name & Community Number			B2. County Name		B3. State
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth)
					AE-10

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	5	<input type="checkbox"/> feet	<input type="checkbox"/> meters
b) Top of the next higher floor	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
c) Bottom of the lowest horizontal structural member (V Zones only)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
d) Attached garage (top of slab)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
f) Lowest adjacent (finished) grade next to building (LAG)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
g) Highest adjacent (finished) grade next to building (HAG)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters

Contracts/preparation



- General contractor selected
- Temporary housing secured





Contracts/preparation



- Prepare the site and building, relocate important vegetation, trees trimmed



Contracts/preparation



- Prepare the site and building, relocate important vegetation, trees trimmed



The Elevation Project



Benchmark nearest
utility pole for accurate
elevation height of BFE
plus Freeboard



Disconnect utilities



Disconnect utilities



The Elevation Project



Elevation



The Elevation Project



Elevation



The Elevation Project



Foundation work



The Elevation Project



Foundation work



The Elevation Project



Foundation work



The Elevation Project



Re-connect utilities



The Elevation Project



Foundation/finish work



The Elevation Project



Finishing the landscaping



You must get started or suffer more

Roderick Scott



**1840's Founders Home now commercial space.
Located in the VE-Zone. Designated a Severe
Repetitive Loss by FEMA with around \$100,000
loss from Ida.**

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1840's Founders Home now commercial space. Located in the VE-Zone. Designated a Severe Repetitive Loss by FEMA with around \$100,000 loss from Ida.



SUMMARY



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- Elevation is a proven method of flood risk reduction
- We know how to do the work
- The big issue is – How do we finance all this work and get it done before the flood insurance chases us from our homes and businesses?
- This effort will take all of us working together: public, private and non profit

Together we can do this!



**FLOOD MITIGATION =
FLOOD RESILIENCE**



RAP
RIVERSIDE
AVONDALE
PRESERVATION

