

Below is a **comprehensive “Mitigation & Funding Matrix”** you can attach to each user’s PDF report. It maps the key recommended home-hardening measures (drawn from FEMA P-series guides) to the federal, state, and private funding programs or rebates that can help cover them.

Wildfire Hardening Measures & Incentives

Measure	Description	Potential Funding / Rebates
Defensible-Space Clearing	Remove combustible vegetation within 30 ft of structures	<ul style="list-style-type: none"> • USFS Community Wildfire Defense Grant– Up to \$50 K for community-scale thinning and clearing • CalFire Vegetation Management (CA only)– \$200–\$3 000 per property
Roof Replacement (Class A Shingles)	Replace >15 yr roof with Class A fire-resistant covering	<ul style="list-style-type: none"> • FHA Title I Property Improvement Loan (up to \$25 000) • PACE Financing (Energy & resilience upgrades) • Local Firewise USA™ Grants (through Fire Safe Councils, \$2 000–\$5 000)
Ember-Resistant Vent Covers	Install ¼" metal-mesh covers on all attic/soffit vents	<ul style="list-style-type: none"> • FEMA Hazard Mitigation Grant Program (HMGP) / BRIC (75–90 % federal share via local EMA) • Firewise USA™ Grants (\$1 000–\$2 000)
Non-Combustible Gutter Guards	Install metal guards or regularly clean gutters	<ul style="list-style-type: none"> • CalFire Home Hardening Rebate (CA only, up to \$3 000) • Home Depot Pro + Trade rebates on gutter guards (varies by region)
Hardened Siding & Decks	Use fiber-cement, stucco, or metal; replace wood decks	<ul style="list-style-type: none"> • State Energy Office Rebates (fiber-cement often qualifies under resilient siding incentive) • PACE Financing

Flood Mitigation Measures & Incentives

Measure	Description	Potential Funding / Rebates
Elevate Utilities & Appliances	Raise HVAC, water heater above Base Flood Elevation (BFE)	<ul style="list-style-type: none"> • NFIP ICC (Increased Cost of Compliance) up to \$30 000 • FEMA Flood Mitigation Assistance (FMA) (75 % federal share) • Pre-Disaster Mitigation (PDM) grants

Automatic / Dry Floodproofing Vents	Install engineered vents to equalize hydrostatic pressure	• FMA / PDM / BRIC
Home Elevation	Elevate entire structure on piers or fill	• HMGP (triggered by declared disaster; 75 % federal)• FMA / BRIC
Seal & Flood-Resistant Materials	Apply sealants, use flood-rated wallboard, flooring, insulation	• FEMA P-312 Retrofits Checklist Grants (via local EMA)• State Flood Mitigation Grants (FL Mitigation Fund, NY DHSES Hazard Mitigation)
Backflow Prevention Valves	Install valves to block sewer backup	• Local Water Authority Rebates (varies by district)

Wind / Hurricane Retrofit Measures & Incentives

Measure	Description	Potential Funding / Rebates
Roof Deck Reinforcement	Strengthen roof-to-wall and deck-to-roof connections	• FEMA HMGP / BRIC
Impact-Resistant Windows & Doors	Install ANSI/ASTM D typhoon-rated glazing or shutters	• FEMA HMGP / BRIC • PACE Financing • Insurance Premium Credits (State Farm, Allstate: up to 15 % discount)
Garage Door Upgrades	Replace with wind-rated door and track systems	• FEMA HMGP/FMA • Insurance Credits
Secondary Water Resistance	Add secondary underlayment beneath shingles	• Local Resilience Grants (e.g. TX Windstorm Insurance Association grants)

Earthquake Resilience Measures & Incentives

Measure	Description	Potential Funding / Rebates
Foundation Bolts & Bracing	Anchor home to foundation with bolts and shear panels	• FEMA PDM / BRIC (via local EMA)• California Earthquake Authority (CEA) Brace + Bolt : \$3 000–\$4 000 per home

Soft-Story Retrofit	Strengthen ground-floor “soft” walls with shear walls/jacks	• BRIC (multi-unit or community projects)
Non-Structural Anchorage	Strap bookcases, secure water heaters, TVs with seismic straps	• Local Office of Emergency Services (OES) Grants (e.g., WA Seismic Grant Program)• FEMA P-530 Safe Room Rebate (where available)
Mitigate Dampers & Foundations	Install seismic dampers or reinforce cripple walls	• BRIC / PDM

Cross-Cutting / Tax Incentives & Loans

Program	Covers	Notes
PACE Financing	Energy & resilience retrofits	Low-interest, repaid via property tax; available in 30+ states
FHA Title I Property Improvement Loan	Home hardening & energy efficiency upgrades	Up to \$25 000, 20-year term
IRS § 179D / § 45L Tax Deductions	Energy-efficient windows, doors, insulation	May apply to some wind/hurricane upgrades
SBA Mitigation Disaster Loans	Structural mitigation after declared disaster	Low-interest, long-term

How to Use in Your Report

1. **Match** each user’s “Quick Wins” to 2–3 measures above.
2. **List** the relevant programs (federal, state, local) next to each action.
3. **Link** to application portals:
 - ICC & NFIP: <https://www.fema.gov/flood-insurance>
 - HMGP/PDM/FMA/BRIC: contact your State Hazard Mitigation Officer (<https://www.fema.gov/grants/mitigation>)
 - CEA Brace + Bolt: <https://www.earthquakeauthority.com/Residential-Retrofit/Brace-Bolt>

- PACE: <https://pacenation.org/maps/>
4. **Highlight** immediate next steps (e.g., “Contact your local fire safe council to apply for USFS grants”).

This matrix ensures every homeowner sees tailored, fundable recommendations—and clear paths to unlock up to tens of thousands of dollars toward making their home truly disaster-resistant.