Engage Estero

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PREPARING FOR FUTURE THREATS TO GREATER ESTERO

GREATER ESTERO COMMUNITY REPORT
QUARTER 4 - 2025

Engage Estero's 4th 2025 Greater Estero Community Report

Exploring the Future Threats to Greater Estero from Climate Change.

Introduction

Engage Estero, with the help of environmental and climate change experts, has produced what we consider an essential document for our greater Estero residents. On **March 17th, 2026 5:00 PM to 7:30 PM** at FGCU's Cohen Student Union Ballroom, 2nd Floor, Engage Estero will be holding a **Public Forum on The Future of Greater Estero!**

During the Meeting, We Will Examine:

- ☑ Growth & Development Plans
- ☑ Arts & Culture Expansion
- ☑ Our Future Healthcare Services
- ☑ Annexation prospects
- ☑ Traffic & Infrastructure
- ☑ Environmental Issues & Water Quality
- ☑ Village Collaborations with FGCU
- ☑ Support for Entrepreneurs
- ☑ Workforce Housing implementation
- ☑ Education (schools and teacher retention)
- ☑ Community Values
- ☑ Resilience /Protection

Undoubtedly, the focus will be on many aspects that relate to what we can expect to see built and developed to meet the needs of a discerning public. However, it is important to understand that, even if we would prefer to forget about the threats we will face from climate change, we must be prepared to safeguard our community and the environment we cherish.

Florida's coastal regions stand at the forefront of climate-related challenges, and understanding these risks requires a combination of scientific data, regional assessments, and community-driven planning. The collected articles and resources provided in the 4th 2025 Greater Estero Community Report begin with foundational climate information from the Florida Climate Center and related scientific datasets.

The information helps establish the environmental context in which sea-level rise and coastal change are unfolding. These sources provide the essential baseline for interpreting both current trends and future projections across the state's diverse coastal ecosystems.

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Building on this scientific foundation, several resources focus specifically on Southwest Florida—a region experiencing accelerated vulnerability due to rising seas, stronger storms, and erosion. Assessments of salt marsh resilience, ecosystem escape pathways, and community exposure reveal how coastal habitats and the people who depend on them are being reshaped.

Local news and regional studies further highlight the immediate concerns facing Southwest Florida communities, emphasizing the real-world impacts of sea-level rise on infrastructure, housing, and natural systems.

To complement these environmental evaluations, several tools and datasets offer practical, visual, and geographic insights into flood risk. Flood zone maps, FEMA map revisions, hazard area classifications, and sea-level visualization platforms enable residents, planners, and decision-makers to better understand where risk is concentrated and how it is projected to expand. These mapping resources serve as critical guides for local governments developing adaptation strategies and for homeowners assessing personal risk.

Economic and policy-focused resources add another essential dimension to the discussion. Studies on the financial impacts of climate change demonstrate the long-term costs Florida may face—from property losses to infrastructure demands—while resilience initiatives from organizations and state programs outline forward-looking approaches to reduce future harm. These sources underscore that climate resilience is not solely an environmental concern but also a fiscal and governance priority.

Finally, the collection includes community-specific guidance for areas such as Estero and Lee County, where localized vulnerability assessments and preparedness recommendations help translate state- and regional-level data into actionable steps. Nature-based solutions, community initiatives, and planning tools illustrate the range of options available to protect Florida's coastline.

Together, these articles form a comprehensive overview of the challenges and opportunities Florida faces as it works to safeguard its environment, economy, and communities from the accelerating impacts of sea-level rise.

We urge you and your friends and neighbors to review the articles provided so that you can stay informed and, with Engage Estero's help, explore carefully what our local council, County Commissioners, and State Government are planning to do to ensure we maintain a safe, vibrant, and economically sound future for all who love living in our slice of paradise!

Part 1

Experts' Assessment of Future Climate Threats to Greater Estero

Prepared by Allan Bowditch, Engage Estero's President.

Introduction

Although few of us enjoy thinking about future risks to our beautiful community in Southwest Florida, we must do so. Our homes represent significant personal investments, and our quality of life depends on the services and amenities we value every day. Understanding the challenges ahead—and the steps we can take to reduce their impact—helps protect both our lifestyle and our long-term economic well-being.

The next 10 years (and beyond) are likely to bring significant challenges to Southwest Florida — including the area around Greater Estero, Florida — due to climate change, sea-level rise, and related economic and social effects. But there are also many concrete actions residents, municipalities, and governments can take to reduce damage and build resilience. Below is an overview of the key threats, their likely impacts over the next decade, and a menu of mitigations and policies (some already well documented as best practices).

Key Threats to SW Florida and Greater Estero (next 10 years)

Sea-level rise, saltwater intrusion, and coastal flooding

- Global warming is driving steady sea-level rise due to melting ice sheets and ocean thermal expansion. For Florida, that means increasing "base water levels," even before storms or tides[1].
- Local studies show that coastal wetlands — salt marshes, mangroves, estuaries — which normally buffer storms and protect shorelines, are already threatened: some marshes are "drowning" because they cannot migrate inland, especially where development or infrastructure blocks their natural migration[2].
- As sea levels rise, saltwater will more easily intrude into groundwater and aquifers, threatening freshwater supply — a significant concern in a porous-bedrock state like Florida[3].
- Even modest sea-level rise greatly increases the risk of "nuisance flooding" — high-tide flooding that affects streets, drainage, and low-lying properties — as well as full-blown storm surge flooding during hurricanes.

What this means for Estero/SW Florida (2025–2035)

- More frequent flooding, especially in low-lying neighborhoods or coastal properties, even without storms.
- Increased risk during tropical storms/hurricanes: higher storm surges, deeper flooding, more property damage.
- Saltwater encroachment could threaten wells or drinking water, affecting residents, agriculture, and recreation.
- Loss/degradation of coastal wetlands, marshes, mangroves, and estuaries — with cascading ecological, economic, and social consequences.

Stronger storms, intensifying hurricanes, and increased storm surge

- Warmer ocean and sea-surface temperatures (a consequence of global warming) feed more powerful hurricanes, with greater potential for destructive wind, rainfall, and storm surge.
- Because of coastal geomorphology on Florida's Gulf coast — including a wide, shallow continental shelf — storm surge can be amplified, pushing more water onshore than in steeper, narrow-shelf coasts[4].
- Combined with rising sea levels, even Category 1 or 2 storms might produce flood depths or surge levels previously associated with stronger storms.

Implications for the region:

- Higher risk to build infrastructure: homes, roads, sewage/water systems, especially those near the coast or in flood zones.
- Escalating insurance costs, potential loss in property values, and difficulty obtaining mortgages or flood insurance. Already, many coastal businesses and residents worry about this[5].
- Greater economic disruption, especially for industries tied to tourism, marine activities, and real estate — all central pillars of SW Florida's economy.

Ecosystem degradation and loss of natural coastal buffers

- Coastal ecosystems — mangroves, salt marshes, tidal wetlands, estuaries — are at risk of "drowning" or being squeezed: when sea-level rises, and inland migration is blocked by development or complex infrastructure.
- Loss of these ecosystems reduces the natural protection they afford against storm surge, erosion, and flooding, increasing vulnerability across the region[6].
- Declines in marine habitats will disrupt fisheries, biodiversity (birds, fish, marine mammals), water quality, and recreational uses — all of which are important for both ecology and the local economy.

Economic and social stress: Property risk, insurance, infrastructure strain, and human displacement

- As flooding, storms, and sea-level rise intensify, property values in vulnerable coastal and low-lying areas may decline; insurance premiums may soar, or coverage may become unavailable.
- Infrastructure (roads, stormwater drainage, wastewater/sewage systems, freshwater supply) will face increasing stress or failure risks, especially during repeated flood events or saltwater intrusion.
- Communities may see displacement (from repeated flooding), loss of tourism revenue, loss of commercial/marine activity — leading to economic decline and hardship for vulnerable populations[7].

- Municipal budgets (and county/state) could be overwhelmed by the need for repairs, new infrastructure, flood protection — threatening long-term fiscal health unless planning is proactive[8].

What Residents, Municipalities, County & State Should Do — Adaptation & Mitigation Strategies

Please see below several concrete steps — some technical, some political/social — that can help reduce or manage the impacts over the next decade.

1. Protect, restore, and expand natural coastal buffers (nature-based solutions)

- Prioritize protection of existing salt marshes, mangroves, estuaries, and wetlands. Prevent development or hardening (bulkheads, seawalls) in critical buffer zones.
- Where feasible, restore degraded wetlands, remove invasive species, re-establish tidal flows, and allow marshes to migrate inland ("rolling easements" or conservation corridors) so they can adapt to rising seas.
- Support "green" or "hybrid" infrastructure — such as restored mangroves + natural tidal marshes + oyster reefs — rather than only "gray" infrastructure (concrete seawalls). These natural buffers can absorb storm surge and reduce wave energy — often more effectively and sustainably than seawalls.

Why this matters: Studies show that healthy mangroves and wetlands significantly reduce flood damage and storm surge impacts — reducing property damage, protecting communities, and preserving biodiversity.

2. Update zoning, land use, and building codes — plan for "climate-aware development."

- Municipalities and county governments (and developers) should revise zoning laws and building regulations to discourage or restrict new construction in high-risk areas (low-lying coastal zones, marsh buffers, floodplains).
- Require new construction to meet resilience standards: elevated foundations, storm-resistant design, proper drainage, flood-resilient materials.
- Where possible, promote "managed retreat" or relocation for the most vulnerable properties (especially barrier islands, low-lying neighborhoods) — or incentivize conversion of those zones to conservation/open space.

Such proactive land-use planning reduces long-term risk, avoids repeated disaster rebuilds, and protects both people and ecosystems.

3. Invest in resilient infrastructure & flood-management systems

- Upgrade stormwater drainage, sewage and wastewater, freshwater supply systems to cope with saltwater intrusion, flooding, and increased groundwater pressures.
- Construct hybrid or gray-green flood defenses where needed (e.g., levees, flood barriers, sea-walls — but only in places where natural buffers aren't sufficient or feasible; and ideally combining with natural shoreline restoration).
- Use modern climate-risk modeling (e.g., flood-map projections, tide/gauge data, storm-surge modeling) to guide infrastructure investments and municipal planning.

According to resilience-economics studies, every dollar invested in resilient infrastructure can save many more dollars in future disaster recovery costs.

4. Policy, governance, and coordinated long-term planning

- Establish a coordinated resilience governance structure (at municipal, county, and state levels) to align planning, funding, and regulatory action. For example: a "Resilience Council" or dedicated "Climate/Resilience Office." This helps avoid fragmented, ad-hoc responses.
- Secure funding (state, federal, grants) to support adaptation projects — not just emergency relief after storms. Long-term investments pay off by avoiding the costs of repeated rebuilds.
- Update public disclosure and insurance laws: require or encourage property owners to have full knowledge of flood risk, past flood damage, and projected climate risk before purchase or construction.
- Engage the public — awareness campaigns, community planning, equitable inclusion. Vulnerable populations (low-income, retirees, renters) often bear the brunt, and inclusive planning ensures access to resources, relocation support, and fairness.

5. Mitigation: reducing greenhouse gas emissions and building a sustainable economy

While adaptation is essential, long-term mitigation remains critical:

- Support policies at the state/local level to reduce carbon emissions: clean energy (solar, wind), energy efficiency, sustainable transport, and building efficiency. Over time, reducing emissions slows future warming, helping limit long-term sea-level rise and storm intensification.
- Promote "natural infrastructure" also as carbon sinks — e.g., mangroves, wetlands, seagrass — which store carbon while protecting coasts.
- Integrate climate risks into economic and development planning — diversify economy beyond vulnerable coastal real-estate and tourism, support resilient industries.

What Residents, Businesses & Local Communities Can Do

- Stay informed: Understand flood-risk maps, future sea-level rise projections, and which areas/neighborhoods are most vulnerable. Use that knowledge when buying property, building, or investing.
- If you own coastal or low-lying property: consider elevation, flood-resistant design, insurance (flood, wind), or even relocation if risk is high.
- Support (and demand) resilient, science-based planning from local government — Zoning, building codes, green infrastructure, conservation easements, public works investments.
- Participate in community resilience initiatives — wetland restoration, conservation, community planning, and local environmental advocacy.
- Reduce personal carbon footprint — energy conservation, support clean energy, reduce waste — because collective small actions contribute to global mitigation and help slow climate change.

Key Challenges & Tradeoffs (What's Hard)

- **Cost**: Resilient infrastructure and "green-gray" defenses aren't cheap. Budget constraints will affect municipalities and counties.
- **Political/social will**: Moving away from "business as usual" development, limiting coastal property, enforcing stricter building codes — these may face resistance from developers, property owners, and constituents.
- **Uncertainty**: Predictions have ranges; exact sea-level rise, storm frequency/intensity, and timing are uncertain. Planning must balance flexibility and precaution.
- **Equity**: Vulnerable populations — low-income communities, renters, seasonal workers — may lack resources to adapt, relocate, or weather repeated disasters.

What This Means for Greater Estero in the Next 10 Years (2025–2035)

Greater Estero — like much of SW Florida — will likely see a combination of:

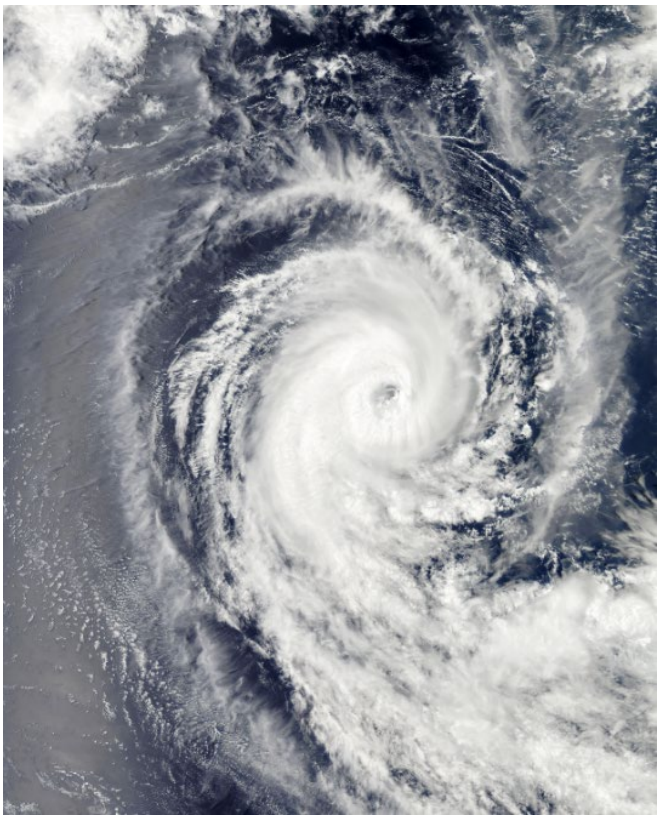
- More frequent nuisance flooding (high-tide, "king tide" events), even in years without major storms
- Increased risk when tropical storms or hurricanes hit: deeper flooding, more damage, more frequent, expensive storm-surge events
- Pressure on real-estate values, insurance costs, and property risk, especially for coastal and low-lying properties
- Growing demand for municipal planning, climate-resilient infrastructure, and public services (drainage, water supply, flood-control)
- Loss or degradation of natural habitats (mangroves, wetlands), which undermines natural coastal resilience — unless restoration/conservation efforts step up

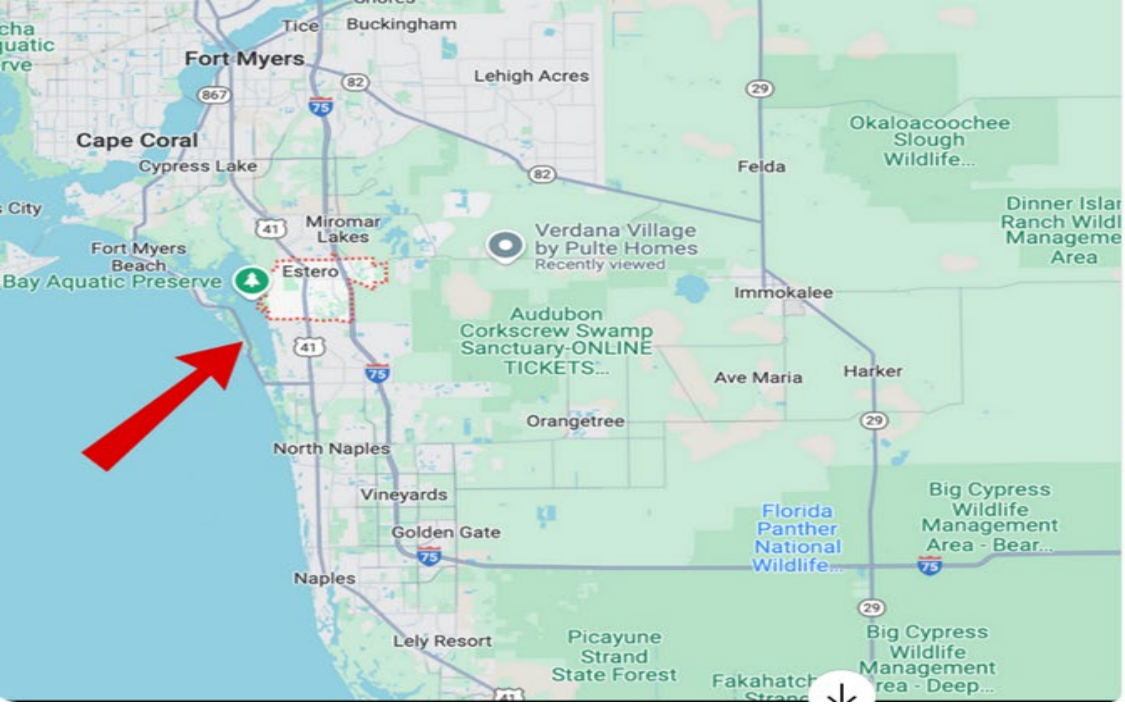
If local leaders — municipalities, counties, and states — act proactively, many of these impacts can be mitigated or at least managed. But time is short. What's implemented (or not) in the next few years will powerfully shape how Estero (and SW Florida) remains livable and sustainable.

An Expert's Perspective — What I Would Do If I Were a Local Policy-Maker Today

If I were advising local or county government in Estero / SW Florida, I would:

1. Commission a **comprehensive climate vulnerability and risk assessment** (sea-level rise, storm surge, groundwater/saltwater intrusion, infrastructure stress, socioeconomic impacts) updated with the latest science.
2. Declare and enact a **coastal resilience plan**, combining nature-based solutions (wetland/mangrove restoration), hybrid infrastructure, and updated zoning/building codes (limiting new development in high-risk zones).
3. Establish a **Resilience Office or Council** (or join existing regional compacts) — to coordinate among municipalities, counties, state agencies, environmental NGOs, and citizens.
4. Secure funding (state/federal grants, bonds, public-private partnerships) for long-term adaptation— prioritized for vulnerable communities, critical infrastructure, and natural habitat restoration.
5. Launch **public outreach, education, and incentives** — encourage residents to prepare, invest in resilient houses, support conservation, and reduce carbon footprint.





Part 2

Key Risk Factors & What They Mean for Estero

Flood Zones & Regulatory Risk

- The local government for the Village of Estero provides flood-zone maps, and residents can look up their property's designation (e.g., AE, VE, etc.)[9].
- The broader Lee County, Florida, also maintains flood maps (via its GIS/Planning Department) and maps under the Federal Emergency Management Agency (FEMA) / National Flood Insurance Program (NFIP), which define Special Flood Hazard Areas (SFHAs)[10].
- These zones reflect areas with ~1 % annual chance of significant flooding (the so-called "100-year flood") — areas with designations like AE, A, VE are officially higher-risk[11].
- Since the most recent major update, new maps became effective on **November 17, 2022,** for many parts of Lee County — meaning flood-risk designations only recently were re-evaluated with improved modeling[12].

Implication: Any parcel in or near AE/VE/A zones — especially close to coastlines, estuaries, canals, or low-lying marsh/river corridors — has elevated risk. These are "first-alert" areas for flooding, storm surge, and sea-level-rise amplified risk.

Sea-Level Rise & Long-Term Inundation Risk

There are publicly available sea-level rise mapping tools that show projected inundation (direct ocean connection) and low-lying inland areas (that could flood even if not directly connected to the ocean) under various sea-level rise scenarios over the coming decades [13]

- On statewide maps produced by Climate Central and others, Florida is shown to have a huge population living on land less than 4 feet above high tide — giving broad context for how vulnerable many low-lying areas are across the state[14].
- For SW Florida (including Lee County and Estero), a vulnerability assessment highlighted that many "critical facilities" (wastewater plants, water-treatment, storm-water infrastructure, etc.) are in zones that could be exposed under a 5–10-foot storm surge — underscoring that not just homes, but infrastructure, could be at serious risk over time.

Implication: Even some areas that are not currently in regulatory flood zones could become chronically vulnerable — especially under a modest sea-level rise or repeated "nuisance flooding" from high tides + elevated base sea level. Over 10–20 years, this can shift what's "safe" inland vs. what becomes risk-prone.

Combined Threat: Flood, Storm Surge, and Sea-Level Rise

The highest-risk areas are those where flood zone designation, proximity to the **coast/waterways, and low elevation** combine. On the maps above, those will typically be:

- Coastal fringe areas along the Gulf coast, bays, estuaries — where "VE / V / A" zones meet direct ocean or Gulf frontage.
- Inland areas near rivers, canals, or marshes — especially if they fall under AE/A flood zones or are low-lying according to sea-level rise inundation maps.
- Zones where critical infrastructure (wastewater plants, storm drainage, water supply, roads) are located at or near low elevation — as identified in the county's climate-change vulnerability assessment[15].

Over the next 10–20 years, these zones are likely to be "hotspots" for recurrent flooding, inundation, and storm-surge hazards, making them areas where residents, municipalities, and planners should pay especially close attention.

How to Use & Interpret the Map — What You Should Do Next

If you live or plan to buy in Estero or SW Florida:

- **Look up your property address** in the publicly available flood-zone look-up tool offered by the Village of Estero / Lee County — that will show whether you're in a regulated flood zone, and what base flood elevation (BFE) applies[16].
- **Use sea-level rise map viewers** (for instance, the NOAA Office for Coastal Management SLR-viewer or the University of Florida Sea Level Rise Map Viewer) to see what inundation might look like under different Sea Level Rise scenarios (e.g., 1 ft, 2 ft, 5 ft)[17].
- **Check for critical infrastructure proximity** (wastewater, water supply, drainage) — the county-level risk assessments may indicate which facilities are most vulnerable, which also signals neighborhood risk.
- **Plan for medium- and long-term resilience** — even if your home is outside a danger zone now, sea-level rise could shift risk zones over time. Use projections to guide long-term decisions (renovations, building, property purchase, insurance, etc.).
- **Spread awareness** — encourage neighbors, homeowners' associations, and local government to use these maps and make decisions based on science and forward-looking projections.

In Summary -The Likely Risk-Heat "Hot Zones" in Greater Estero (Next 10–20 Years)

Based on overlaying the various layers (flood zone, sea-level rise, infrastructure vulnerability), the area's most likely to be repeatedly stressed or at risk:

- Coastal fringe properties near bays, estuaries, or the Gulf — especially older buildings built close to sea level.
- Properties near rivers, canals, marshes, or wetlands — even if a bit inland — that fall under AE/A flood zones or low elevation zones in SLR maps.
- Areas close to water / wetland-adjacent infrastructure — roads, drainage/stormwater, sewage/wastewater facilities.
- Transitional inland zones that look "safe" today but are at low elevation (≤ 2–4 ft above high tide) — which may be vulnerable to chronic flooding or groundwater/saltwater intrusion as sea level rises.

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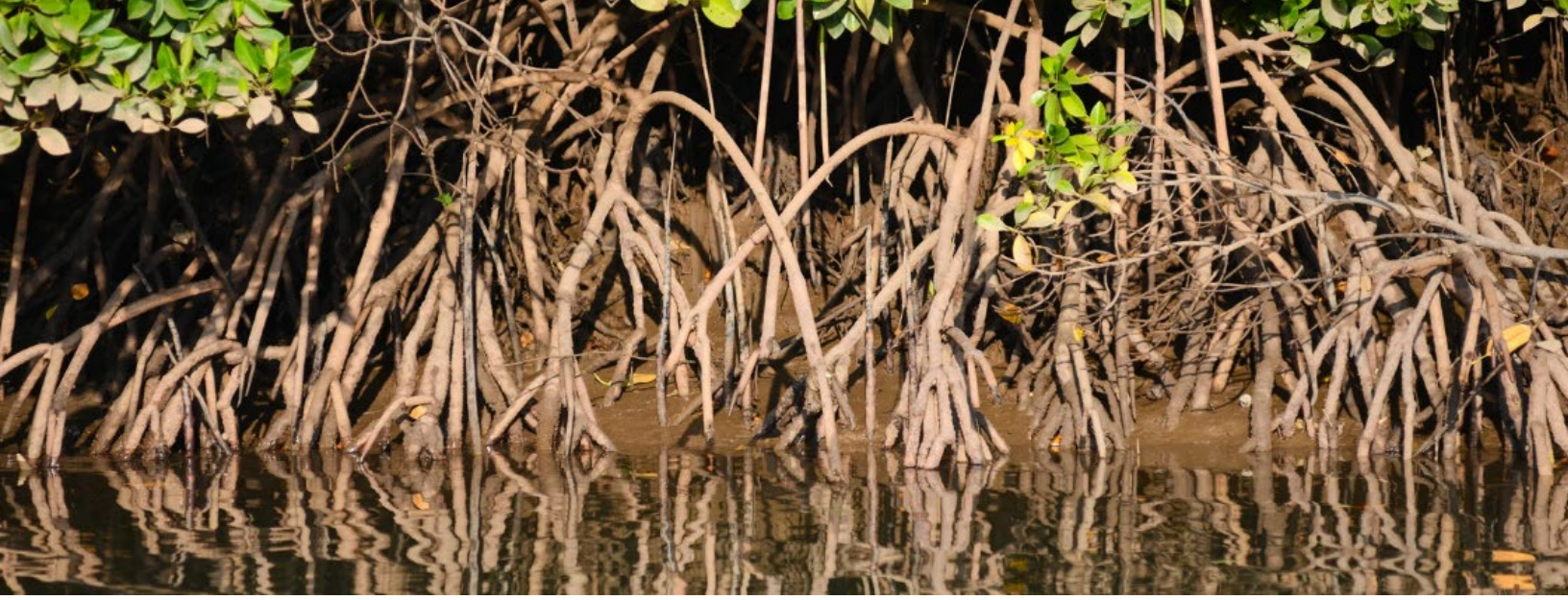

Part 3

Key Resiliency Efforts for Estero (Most Effective + Cost-Effective)

Resilience is an increasingly common word in the climate change vernacular. Extreme weather events have shown that resilience is an essential component of any comprehensive climate action program because climate change is both a global and a hyper-local issue. The causes and the broad impacts affect everyone on the planet, but resilience efforts must be executed at the asset, neighborhood, or individual level. It will take a combined, coordinated effort like none ever seen before to address this issue. The good news is that addressing these risks can not only protect people and property but also generate economic activity that creates domestic jobs and drives prosperity.

Based on climate-risk profiles in Southwest Florida, municipal budgets, and best practices from resilient coastal communities, these are the strategies most likely to deliver substantial, affordable resilience benefits. Seven necessary resiliency steps are outlined below.

1. Protect and Restore Wetlands, Marshes & Mangroves

Why it matters for Estero

- Estero is surrounded by hydrologically connected systems (Estero River, Halfway Creek, Corkscrew watershed).
- Wetlands and mangroves dissipate storm surge, reduce erosion, slow runoff, and store floodwaters.
- They also improve water quality—important as nutrient runoff increases flood intensity.

Why is it cost-effective?

- Nature-based solutions can be **4–10x cheaper** than gray infrastructure.
- Wetland restoration reduces the need for expensive hard structures (levees, seawalls).
- Public/private grants often cover 50–90% of costs (NOAA, USACE, DEP, FEMA BRIC).

Best actions for Estero

✓ Acquire or conserve wetlands along the Estero River & Halfway Creek
✓ Create "rolling easements" so wetlands can migrate inland
✓ Incentivize developers to maintain or expand green buffer zones

High impact; low cost; long-term protection.

2. Stormwater System Modernization (Green-Blue Infrastructure)

Why it matters

The most frequent threat to Estero in the next 10–20 years isn't a catastrophic surge—it's *rainfall flooding and drainage failure*, exacerbated by urbanization over flat land.

Solutions that work


Retention Ponds Reduce Flooding

- Bioswales, retention ponds, and vegetated basins
- Permeable pavement in commercial corridors
- Rain gardens, expanded right-of-way stormwater features
- "Smart" drainage sensors to monitor water levels

Cost-effectiveness

- Green stormwater infrastructure often costs **30–60% less** to install than conventional pipes and vaults.
- Maintenance costs are significantly lower.
- May reduce insurance premiums and FEMA hazard scores.

High ROI and great for a municipality with growth corridors like Estero.

3. Elevation Adjustments & Resilient Building Codes (Zoning-Level Action, Not Rebuilds)

Estero can benefit hugely from **policy-level resilience** without needing to rebuild existing neighborhoods.

Most effective steps

- Update Base Flood Elevation (BFE) requirements a few inches above FEMA minimums
- Require higher finished-floor elevations for new development
- Promote living shorelines instead of seawalls in new waterfront construction
- Require critical infrastructure (lift stations, pump stations, EMS) to be elevated

Why is it cost-effective

- Code changes cost almost nothing for the municipality
- Future flood damages are dramatically reduced
- Developers—not taxpayers—absorb the increased building costs
- FEMA community rating system (CRS) discounts can lower ALL residents' flood insurance bills

Massive benefit for minimal public expenditure.

4. Groundwater & Saltwater Intrusion Monitoring and Planning

Why important for Estero

Though Estero is inland, the aquifer is connected to the coast—saltwater intrusion is a regional threat, especially during droughts or high-water-level tides.

Key actions

- Install monitoring wells
- Partner with Lee County & SFWMD on hydrological modeling
- Require irrigation using reclaimed water where feasible
- Support land conservation east of Estero to preserve freshwater recharge areas

Cost-effectiveness

These programs are relatively cheap (tens of thousands per year) compared to the cost of water treatment upgrades or aquifer contamination.

Low cost, highly preventative.

5. Emergency Management Modernization (People-Focused Resilience)

Resilience isn't only about infrastructure—it's also about communication and planning.

Most effective actions

- "Blue-sky" evacuation planning for medically vulnerable residents

- Real-time flood and storm warnings targeted to neighborhoods
- Backup power for shelters and municipal buildings
- Pre-positioned agreements for debris clearing and recovery

Cost-effectiveness

- Uses mostly planning, training, and communication—not expensive infrastructure
- FEMA grants often pay 75–100% of costs
- Saves millions in recovery and human impacts after events

High-impact, low-cost preparation.

6. Regional Resilience Coordination (Leverage Grants, Avoid Duplication)

Estero's smartest move is often to collaborate regionally:

- Lee County Resiliency Office
- Southwest Florida Regional Planning Council
- Local university partners (FGCU's Water School)
- Floodplain managers, engineers, and environmental partners

Cost-effectiveness

- Small municipalities multiply their impact and grant eligibility
- Shared modeling reduces redundancy
- Allows Estero to punch above its weight in state and federal funding

One of the best dollar-for-dollar investments.

7. Land-Use Strategies to Avoid Future Risk

This is a long-term but powerful resiliency tool:

Key approaches

- Discourage development in flood-prone or hydrologically sensitive areas
- Use conservation easements along waterways
- Incentivize clustered development on higher ground
- Update comp plans to reflect climate projections, not historic patterns

Cost-effectiveness

- Zoning changes cost almost nothing
- Prevents multi-million-dollar infrastructure problems down the road
- Strongest long-term resilience action any municipality can take

The Most Cost-Effective Resilience Actions (Top Five for Estero)

1. **Green stormwater infrastructure upgrades**
2. **Wetland and river corridor protection**
3. **Updated building codes & zoning overlays**
4. **Groundwater monitoring & aquifer protection**
5. **Regional coordination for grants and modeling**

These deliver the highest long-term protection per dollar.

The Final Expert View- Conclusions

Most resiliency efforts *can* be cost-effective, as long as they emphasize:

- **Nature-based solutions** instead of expensive hardening
- **Policy & zoning** rather than large engineering projects
- **Preventive monitoring** instead of crisis response
- **Regional partnerships** to maximize outside funding
- **Resilient design in new building**, not retrofits

For a municipality like Estero, rapidly growing, partly inland, but linked to vulnerable waterways, these strategies provide significant protective benefits at reasonable or minimal public expense.

At Engage Estero, we believe in the power of community. As a nonpartisan, nonpolitical nonprofit, we conduct evidence-based research to provide unbiased information about local issues, helping you improve your quality of life."

Be Informed, Get Engaged, and Make an Impact"

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