

THE RESILIENCE EXECUTIVE

A Field Manual for State and Local Chief Resilience Officers

Institute for Sustainable Development

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This manual provides general policy and implementation guidance. Jurisdictions should obtain legal, financial, insurance, and technical advice appropriate to their governing authorities and risk profile.

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Executive Summary

There are many factors causing states and local communities to develop resilience strategies and create chief resilience officers (or equivalents), with supporting functions. This paper argues for an expanded understanding of the value of what this office can do and for a configuration of this function that enables states and localities to realize value during normal operating conditions as well as in reducing impacts and accelerating recovery from disasters when they do happen.

In 2024 alone, 27 separate billion-dollar disasters occurred, totaling \$182.7 billion in damages — the fifth consecutive year with 18 or more such events. In the United States alone, disasters displaced a record 11 million people in 2024 — the highest total of any country in the world that year, according to the Internal Displacement Monitoring Centre. Permanent or temporary migration from impacted communities can reach 10% of the population, and business closures can top 40% of an impacted area, with some areas becoming so vulnerable that entire towns have relocated.

Currently, only 13 states and fewer than 150 cities and counties have Chief Resilience Officers (CROs). It is more than likely that an increasing number of communities will adopt resilience and risk-management strategies and designate a CRO or equivalent office as disasters become increasingly costly.

Communities face a widening gap between the scale of the risks they face and the institutional capacity built to manage them. Disasters are more frequent and more costly; budgets are tighter; and no single existing office — not emergency management, not planning, not economic development — is positioned to own resilience as a continuous, cross-sector executive function. The Chief Resilience Officer role was created to fill that gap, but as implemented over the past decade it has too often been reduced to a convening and reporting function, without the budget, authority, or durability to match its mandate.

This is due in part because to date, CROs have been conceived of largely in the context of emergency management and disaster harm reduction, but they also have the potential to deliver significant economic, social, and environmental value during normal conditions. Properly designed, budgeted, and authorized resilience offices can support better bond ratings and capital cost reduction, business attraction and recruitment, as well as housing, environmental management, infrastructure and other benefits. As such, they could be enormously valuable to vulnerable and at-risk states and localities during good times and bad.

This manual distills ISD's latest thinking about the roles, strategies, and tactics that maximize the value of resilience offices and CROs to their communities across multiple use cases during normal operating conditions and in support of disaster management.

This manual makes the case for a stronger version of the role, built around the following claims:

- Disasters are too costly to manage reactively. Proactive risk management, community continuity, and recovery acceleration best practices are essential for the future viability of vulnerable and at-risk places and a competitive advantage in a country where almost every part has some vulnerabilities and risks.
- State and local CROs add value in good times and bad through risk, threat, vulnerability and hazard reduction, enhanced community continuity, impact mitigation, and recovery acceleration.

- State and local CROs need the same core functions — risk and asset assessment, planning, exercises, data management, partnership development, mutual aid, and financial instruments such as parametric insurance tools— regardless of level of government, even though the scope and scale of each function differs between a state office acting as a statewide backstop and a city office acting as a convener and coordinator.
- These functions cannot be exercised on convening power alone: the CRO needs real executive authorities including inspection and readiness auditing, insurance and risk-transfer negotiation, regional and interstate compacts, and budget control to make the functions operational rather than aspirational.
- Community Resilience Networks (CRNs), a whole-of-society coordination architecture developed and tested through ISD's field work, are one powerful instrument available to a CRO. Others that belong in the same toolbox include resilience hubs, business resilience centers, exercise programs, and shared data systems.

The manual closes with a diagnostic framework for the legal and enabling conditions a jurisdiction needs — deliberately short of model legislation, since CRO placement and legal structure vary too much across states and cities for one-size-fits-all statutory language to be credible — and with implementation guidance for standing up the office and its first instruments over an eighteen-month sequence.

Proactive resilience is the single best defense a community has against institutional abandonment. The CRO concept is not tied to emergency management, except to the extent that mitigating sudden shocks supports emergency managers. It is a hybrid function with elements of human, financial, economic, housing, infrastructure, and environmental risk management and community-continuity responsibility. Its value shows up in everyday life — attractiveness for new residents, business investment, loans, and insurance — and, when a disaster strikes, in the scale of the initial impact and the length of recovery.

Resilience management as an independent discipline is still developing. It should work closely with, integrate into, and support community development, emergency management, and other place-making and asset-maintenance functions.

This Version 1.0 manual presents ISD's current operating model; the framework should continue to evolve as jurisdictions test these functions and document their value. Comments suggesting revisions, additions, corrections or commentary should be directed to editor@isdus.org.

How to Use This Manual

This manual speaks to several audiences at once — CROs, governors' offices, mayors, legislators, philanthropy, federal agencies, and practitioners in emergency management, planning, and economic development. Each enters at a different altitude. Readers pressed for time can use the pathways below rather than reading front to back.

Reader	Start here
Governor's office / state cabinet	Goals and Objectives → Executive Authorities → Statutory Requirements and Enabling Conditions → Implementation
City or county CRO	Core Functions → The CRO Toolbox → Implementation
Legislators / council members	Goals and Objectives → Executive Authorities → Statutory Requirements and Enabling Conditions
Philanthropy / foundations	Goals and Objectives → The CRO Toolbox → Appendix B (Case Studies)
Federal partners (FEMA, HUD, Commerce)	Implementation: Policy Recommendations → Statutory Requirements and Enabling Conditions
Practitioners (emergency management, planning, economic development)	Functions and Operations, including “How the CRO Complements Existing Agencies”

The Problem: Risk and Resilience Management and Community Continuity

Every jurisdiction in the country is contending with the same underlying shift, even if the specific hazard differs by geography. Six trends converge to create a genuine governance, economic, and financial problem, not just a disaster problem. The following figure summarizes the main financial and economic drivers and illustrates how costly ignoring these issues can be.



Figure 1. Summary of weather and climate risk moving through credit, insurance, and lending markets.

Risk is increasing.

Climate volatility, aging infrastructure, and population growth in hazard-prone areas are compounding faster than most jurisdictions' institutional capacity to manage them. The U.S. Chamber of Commerce's 2025 Resilience Report counted 27 separate billion-dollar disasters in 2024 alone, totaling \$182.7 billion in damages — the fifth consecutive year with 18 or more such events. In contrast to normal conditions, extreme events can wipe out community assets that took years, decades, or even centuries to accumulate and once lost can never be replaced in exactly the same way.

Stage	Evidence	Implication for communities
Risk identification	Moody's now provides physical- and transition-risk scores, hazard models and climate scenarios covering floods, heat, hurricanes, sea-level rise, water stress and other exposures.	Investors can compare geographic risks across jurisdictions and portfolios.
Credit integration	Moody's states that rising economic and insured losses are increasing the credit focus on adaptation, and that adaptation can support credit strength.	Resilience investment may protect the tax base, infrastructure and long-term debt capacity.
Issuer screening	Fitch applies climate-vulnerability screening in public-finance analyses and publishes issuer-level climate-vulnerability scores.	Exposure is increasingly visible even where it does not yet change the rating.
Rating action	In January 2025 Fitch placed Los Angeles and related credits on Rating Watch Negative following the wildfires and assigned a heightened ESG relevance score for natural disasters and climate change.	Severe events can create immediate expenditure, liability, infrastructure and revenue concerns.
Insurance and lending transmission	Treasury, regulators, lenders and insurers increasingly examine ZIP-code- and asset-level physical risk.	Risk migrates into premiums, collateral values, underwriting, borrowing costs and market access.

A decade ago, credit rating agencies (Moody's, S&P Global, and Fitch) treated extreme weather primarily as a short-term, temporary economic shock. Today, physical climate risk and geological/environmental vulnerabilities are directly codified into Environmental, Social, and Governance (ESG) credit metrics. When evaluating a state or municipality's bond rating, agencies look closely at:

- The depth of the tax base: if a small coastal town or wildfire-prone community faces a severe disaster, can its localized economy survive? A shrinking property tax base means less revenue to repay bond debt.
- Disaster disclosure quality: cities and states that voluntarily and transparently disclose their long-term climate adaptation plans and vulnerabilities can improve market confidence over time when disclosure is paired with a credible, funded capital-improvement and risk-reduction program. Disclosure alone may produce near-term repricing as investors recognize risks that were previously underappreciated. The relevant distinction is therefore not disclosure versus nondisclosure, but managed versus unmanaged risk.

A downgraded bond rating means a lower credit score, making it more expensive to borrow money for essential public works.

Community continuity matters because of compounding effects. In normal conditions, community assets grow and develop organically. After a sudden shock, capital that would have gone toward growth instead goes to repairing damaged assets — a “one step forward, two steps back” dynamic in which the cost is not just repair, but the opportunity cost of where those resources could otherwise have been deployed.

Interest rates are being affected.

In the municipal bond market, a higher risk of default typically demands a higher yield — the interest rate a city must pay to investors to attract capital. Historically, the muni bond market has been slow to penalize high-risk areas heavily, because investor demand for tax-exempt bonds remains high, which compresses interest rates; the tax-exempt status of muni bonds continues to insulate even high-risk large issuers from paying the full cost of their risk.

That said, a divergence is emerging: for long-dated bonds (maturing in 20 to 30 years), investors are beginning to demand higher rates in high-risk areas — such as zones facing severe sea-level rise or acute drought — compared to geographically insulated cities. The effect is currently modest and concentrated in ultra-long maturities and smaller, unrated issuers; large, high-risk entities still often borrow cheaply because their overall economic scale masks localized climate risk. Commercial banks have also become stricter on private real estate and infrastructure loans: a development in a federally designated flood zone or an area with a collapsing groundwater table can face higher interest rates or larger required capital reserves.

Insurers are reducing their exposure.

This is where the pressure is most acute. The insurance industry has become the “canary in the coal mine” for climate and environmental risk. Companies including State Farm, Allstate, and Farmers have restricted, paused, or entirely ceased writing new homeowners' policies in high-risk states such as California (wildfire), Florida (hurricanes and litigation), and Louisiana (flooding).

- The reinsurance domino effect: local insurers rely on global reinsurance giants (Swiss Re, Munich Re) to back catastrophic losses. As multi-billion-dollar disasters have spiked globally, reinsurance premiums have risen sharply, and local insurers have passed these costs to consumers or abandoned volatile markets altogether.
- The rise of state pools: as private carriers pull back, hundreds of thousands of Americans have been forced into state-backed “insurers of last resort” such as Florida's Citizens Insurance or California's FAIR Plan. These plans generally offer less coverage, and while they are sometimes described as more expensive, many are in fact held artificially cheap by legislatures that cap rate increases to avoid bankrupting homeowners — which creates a hidden liability: a major event can force emergency assessments on all taxpayers statewide to cover the shortfall.

Homeowners insurance outcome, 2018–2022	Lowest-risk ZIP codes	Highest-risk ZIP codes
Average annual premium	About \$1,275	\$2,321
Relative premium burden	Baseline	82% higher
Nonrenewal rate	Baseline	About 80% higher

Homeowners insurance outcome, 2018–2022	Lowest-risk ZIP codes	Highest-risk ZIP codes
Average claim severity	About \$19,000	About \$24,000

The insurance crisis feeds directly into a banking crisis. Commercial and retail banks will not issue a mortgage or business loan without proof of property insurance. When communities lose access to affordable coverage, local real estate markets stall, property values face downward pressure, and banks become reluctant to lend in those areas.

Budgets are tighter.

As disasters increase in intensity and cost, jurisdictions must do more with less. The federal government currently accounts for more than 36% of state budgets, and in some cases as much as 70% of a state's disaster management budget. Centralization of services within FEMA and other federal agencies can no longer be taken for granted, and in some cases these resources have been cut back considerably — jurisdictions are being asked to do more with static or shrinking general funds. The deeper issue is not only funding levels but timing and bureaucracy: federal reimbursement can take years to reach local accounts, and a community can face real fiscal strain waiting for it, even as the threshold for triggering a federal disaster declaration has been rising.

No one currently owns cross-sector leverage.

Private-sector logistics and weather intelligence, faith-based disaster relief capacity, and philanthropic knowledge routinely exceed what government alone can field — but there is rarely a single office responsible for activating that capacity before a crisis, rather than improvising it during one. Some jurisdictions have Business Emergency Operating Centers (BEOCs); almost none have Business Resilience Centers or an equivalent standing function within economic development agencies to manage downside risk continuously.

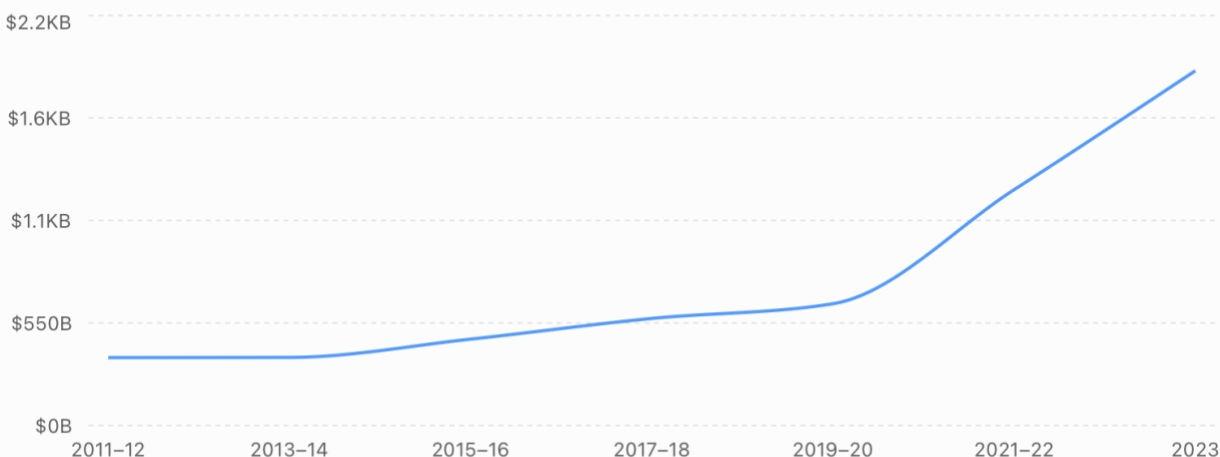
Disaster management and community development are too often treated as separate problems, even though they are not. A jurisdiction that manages resilience only as a crisis-response function keeps paying the same recovery costs indefinitely; one that integrates resilience into its normal-condition development strategy converts that spending into a long-term asset. Communities without a clear executive owner for resilience experience worse displacement, longer recovery, and weaker continuity of local institutions and businesses through a crisis than comparable communities that do.

These are not unrelated problems. They are symptoms of the same underlying condition: no one is responsible, on a continuous basis, for managing resilience as an executive function. However, resilience is not just about problems. It is also about accessing opportunities.

Climate and Resilience Have Become a Trillion-Dollar Capital Market

Global climate-finance flows have accelerated sharply

Tracked annual climate-finance flows, selected periods, in billions of U.S. dollars.



Sources: Climate Policy Initiative, Global Landscape of Climate Finance reports. Period values before 2023 are annual averages; methodology and coverage have expanded over time.

Figure 2. Climate and resilience finance have grown into a trillion-dollar capital market.

Sources: Climate Policy Initiative, Global Landscape of Climate Finance reports. Period values before 2023 are annual averages; methodology and coverage have expanded over time.

Climate Policy Initiative estimates that tracked climate-finance flows reached approximately **\$1.9 trillion in 2023**, compared with an annual average of roughly **\$364 billion in 2011–2012**. Of the 2023 total, approximately **\$1.78 trillion was mitigation finance**, **\$65 billion adaptation finance**, and **\$58 billion dual-benefit finance**. Adaptation is probably understated because private and locally financed resilience investments are particularly difficult to track.

Green bonds have moved from a specialized product to a major capital market. The global green-bond market had approximately **\$2.9 trillion outstanding by 2025**, nearly six times its 2018 size. Green-bond issuance reached approximately **\$653.5 billion in 2025**, while cumulative aligned green issuance exceeded **\$4 trillion**.

Mitigation and adaptation are uses of capital; green bonds are one mechanism for raising it.

“Environmental stewardship” is broader than green bonds. Green bonds can finance water systems, habitat restoration, energy efficiency, clean transportation, resilient infrastructure, pollution prevention, and climate adaptation, but not all environmental-stewardship investment is bond-financed. The World Bank itself describes green bonds

as financing projects that either mitigate climate change or help communities adapt to its effects.

The **North Carolina Insurance Underwriting Association (NCIUA)** has become a national example of how capital markets can be used to reward disaster resilience rather than simply finance disaster losses. In 2025, the NCIUA issued **Cape Lookout Re 2025-1**, a **\$600 million catastrophe bond** that incorporated an innovative resilience feature. Unlike a traditional catastrophe bond, the transaction linked financial incentives to verified investments in stronger construction standards, particularly the **FORTIFIED Home™** program administered by the Insurance Institute for Business & Home Safety (IBHS). The NCIUA had already helped strengthen approximately **15,000 homes** through more than **\$100 million** in resilience investments. If those improvements reduced modeled catastrophe risk as expected, part of the savings generated in the reinsurance transaction would be returned to the insurer as a resilience rebate that could be reinvested in additional mitigation efforts. After the 2025 hurricane season, the transaction generated a reported **\$2.07 million rebate**, and the NCIUA subsequently completed a second **\$600 million** resilience-linked catastrophe bond in 2026.

The North Carolina transaction illustrates a broader principle that extends well beyond insurance. Rather than treating resilience solely as a public expenditure, it demonstrates that measurable risk reduction can become a financial asset that attracts private capital and lowers the long-term cost of managing disasters. The bond created a direct feedback loop in which investments in stronger buildings improved modeled risk, enhanced access to global reinsurance capital, and generated financial returns that could fund additional resilience projects. For state and local governments, the lesson is significant: communities that can credibly measure, document, and reduce disaster risk are increasingly positioned to secure more favorable financing, insurance, and investment terms. In this sense, resilience is not simply a cost of preparedness—it is becoming an increasingly important determinant of financial competitiveness in capital markets.

One important caveat should be acknowledged about the short-term effects of embracing a more resilient profile. As capital markets increasingly incorporate environmental and disaster risk into credit analysis, insurance pricing, and investment decisions, communities may experience **higher financing costs in the short term** simply because those risks become more transparent. Investors, lenders, insurers, and ratings agencies cannot price risks they cannot see. As new analytical tools improve the measurement of physical hazards, infrastructure vulnerability, and long-term fiscal exposure, communities with significant unmanaged risks may initially face higher borrowing costs, higher insurance premiums, larger deductibles, or greater scrutiny from capital providers. In this sense, improved disclosure can accelerate the market's recognition of risks that already existed but were previously underappreciated.

This short-term repricing should not be interpreted as evidence that transparency or resilience planning is counterproductive. Rather, it reflects a broader transition toward more accurate risk assessment across financial markets. Capital markets have

historically repriced risks whenever new information became available, whether related to corporate governance, public debt, cybersecurity, or demographic change. Environmental and disaster risk are increasingly being incorporated into that same framework. The relevant comparison, therefore, is not between disclosure and nondisclosure, but between **managed and unmanaged risk**. Markets may temporarily assign higher costs to newly revealed risks, but they ultimately reward jurisdictions that demonstrate credible strategies to reduce those risks over time.

For state and local governments, the implication is clear. Risk disclosure should be accompanied by a well-defined program of adaptation, mitigation, and resilience investment that demonstrates how future losses will be reduced and community assets protected. Communities that can quantify their vulnerabilities, prioritize investments, monitor progress, and document measurable improvements are increasingly positioned to strengthen their credit profile, improve access to insurance and reinsurance markets, and compete more effectively for both public and private capital. While greater transparency may produce a period of adjustment, the long-term objective is not merely to reveal risk, but to reduce it. In that sense, resilience investments should be understood not simply as expenditures, but as investments in a community's long-term financial competitiveness and capacity to attract capital.

When Extreme Events Happen, Resilience Investments Really Pay Off

When extreme events turn into disasters or catastrophes, embracing resilience and investing in community continuity before they happen is enormously beneficial. Independent national benefit-cost analyses consistently find that resilience investments return between four and twelve dollars for every dollar invested, depending on the type of investment. Federal hazard mitigation grants return approximately six dollars for every dollar invested, while modern building codes can return eleven dollars or more through avoided disaster losses. Imagine how much money the city of New Orleans would have saved if the levees had been properly fortified.

Similarly, Super Storm Sandy provided a bitter lesson to New York. Before it hit, **New York had underinvested for decades in resilience across multiple interconnected systems**—electrical substations, subway entrances and tunnels, hospital backup power, wastewater treatment plants, telecommunications infrastructure, fuel distribution, and coastal flood protection. Previously, New York had balked at making a \$1-3 billion investment in storm surge barriers, but then Sandy cost it \$19 billion, and the region as a whole over \$70 billion.

In other papers, ISD has discussed how extended disaster recoveries can lead to massive diasporas, economic and social displacement, and losses to community identity and heritage. Every day that stores, schools, and other community assets are closed represents tax losses, economic costs, poorer education outcomes, and other significant costs.

Community continuity is not just about the losses however. It is also about the opportunity costs and the strain on the state or local capital position. Before Irma and

Maria, Puerto Rico was already suffering from significant debt. After the storms hit, there were many reports that the island was teetering on the verge of bankruptcy. Money that could have been spent on new infrastructure, other services, tax cuts, or some other constructive use of capital had to be spent on restoring pre-existing critical community needs instead.

The case for resilience and for having a designated officer in charge of implementing a place-based resilience strategy are abundantly clear.

Background: The Rise of the CRO

Despite the value of resilience, and the importance of having someone be specifically responsible for resilience management, the rise of the CRO has been surprisingly slow. Perhaps this was due in part because resilience was either narrowly framed as an adjunct of emergency management or because it was framed through the lens of climate and environmental responsibility or because of other factors. These are important considerations, but as laid out in the previous section, the CRO concept is vital for insurance, investment, business attraction, competitiveness and other developmental benefits as well. Regardless of the reasons, the CRO title spread through two largely separate lineages that have only recently begun to converge. Reconfigured to take into account the other dimensions of resilience, the CRO could become an increasingly critical function for both states and localities. The past is not necessarily prologue to the future.

The city lineage.

This lineage begins with 100 Resilient Cities (100RC) in 2013. This was an important catalyst conceived by the Rockefeller Foundation, and it placed CROs in mayors' offices, funded a strategy-development process, and connected cities to a shared network of peer officials and platform partners. By the time Rockefeller ended the program in 2019, nearly every participating city had had a CRO at some point — but the role, as designed, sat inside the mayor's office with limited independent budget, no regulatory or inspection authority, and a mandate that was functionally complete once the strategy document was published. In practice, city-level CROs have often become closer to a cheerleader, policy advisor, and reporting function than an operational executive — visible, credible, and useful for building consensus, but without the levers to make much happen on their own authority.

The state lineage.

This lineage developed more recently, driven by direct legislative and executive action rather than foundation funding. States including Louisiana, North Carolina, South Carolina, Oregon, Rhode Island, and Virginia have created CRO or equivalent positions by executive order or statute, typically housed in the governor's office, an environmental or natural resources agency, or an emergency management department. Louisiana's 2023 codification (H.B. 526, enacted as Act 315) is notable for permanently establishing the position in statute after three years of operating under executive order, and for pairing it with an Interagency Resilience Coordination Team and a Resilience Task Force — an acknowledgment that a CRO without a coordinating structure around them accomplishes little. The state-level role has tended to function less as a convener of external stakeholders and more as a backstop, utility infielder, and statewide planner — filling coordination gaps between agencies, standing in where a department lacks the

mandate or bandwidth to lead on a given risk, and holding the long-range planning function that individual agencies are not otherwise incentivized to own.

Both lineages treated resilience as a function adjacent to community development rather than as a special case of it. Communities do not develop toward a recovery trajectory — they recover toward whatever development trajectory they were already on. A CRO built around emergency-coordination logic, without a matching taxonomy for the assets being developed and protected in ordinary times, inherits a structural challenge no matter which lineage it descends from. What this paper argues for is an expanded concept of what resilience does, how it should be designed and how it should be integrated into long-term community planning as an asset during normal operating conditions.

Some leaders are already moving in this direction. Over the last few years, a wave of states and municipalities have hired CROs and enacted progressive mitigation laws. The financial and regulatory benefits are concrete:

Financial Entity	How They Benefit Resilient Communities
Credit rating agencies	Reward communities that have formal resilience officers and robust capital improvement plans tailored to climate risks; active mitigation protects the long-term tax base and preserves a higher credit rating.
Insurance regulators & models	States are increasingly passing laws — such as Colorado's landmark policy — that require insurers to factor community-wide and household-level mitigation (wildfire-resistant codes, flood levees) into pricing and underwriting, forcing discounts for resilient areas.
Federal grant matching	A dedicated resilience officer and strategy unlocks federal capital such as FEMA's Building Resilient Infrastructure and Communities (BRIC) program.

Empowering the CRO of today.

100 Resilient Cities deserves credit for two lasting contributions: it legitimized the idea that a jurisdiction needs a named, senior official whose full-time job is resilience, and it developed a genuinely useful cross-sector strategy-development methodology — bringing government, business, and civil-society stakeholders through a structured process to identify shared risks and shared capacity.

What the model did not solve, and what this manual is built to answer, is a set of six specific gaps:

- No budget. Most 100RC-era CRO offices had a small staff allowance and no independent operating budget, so every initiative depended on securing funding elsewhere, initiative by initiative.
- No regulatory or inspection leverage. A CRO could recommend, but could not verify or enforce readiness — there was no mechanism to check whether a strategy's initiatives were actually functioning once written down.
- No durability beyond the grant cycle. The office's authority was tied to the mayor who created it and to Rockefeller's continued funding; neither was guaranteed to outlast a single administration.

- No surviving institutional home. When the foundation ended the program, there was no successor body, network, or manual to carry the practice forward independent of any one funder.
- No focus on normal-operating-condition benefits. Because the CRO role was born out of Rockefeller's post-Sandy grantmaking, its logic ran shock-first — identify hazards, build a strategy, publish it — and it never developed language for the day-to-day return on resilience investment: credit ratings, insurance pricing, business attraction, independent of whether a disaster ever hits.
- No systems-based view of long-term community development. The 100RC strategy document treated resilience as a distinct planning exercise rather than as one lens on the broader asset base — natural, economic, physical, social, human, and political capital, among others — that any community is managing. Without a taxonomy for what a community actually owns, a CRO has no baseline against which to measure whether an initiative is working.

The answer this manual proposes is a different conceptualization of the CRO: one focused on the long-term risk profile of a community and on community continuity during times of crisis. The sections that follow lay out, in order, what that requires — the goals the role serves, the functions it performs, the authorities it needs, the legal conditions that must exist, and the sequence for standing it up.

Goals and Objectives

The case for a resourced CRO should not rest solely on “this solves the problems described above.” A resilience office that only ever talks about disaster is easy for a budget committee to defer. The stronger and more durable case is that resilience management advances goals a community or state already has, with or without the next disaster in mind.

Primary goal.

Establish continuous, executive-level ownership of community or state resilience, so that risk management, recovery capacity, and development strategy are managed as one function rather than falling through the cracks between agencies and between crises.

Supporting objectives

- Reduce disaster severity, displacement, and recovery duration — the direct risk-reduction case carried forward from the problem statement above.
- Improve fiscal resilience and creditworthiness. Since 2017, both major credit rating agencies have formally incorporated climate and disaster-resilience factors into their municipal bond ratings — Moody's in its “Environmental Risk” methodology and S&P in its “Understanding Climate Change Risk and U.S. Municipal Ratings” framework. A jurisdiction with a demonstrated, functioning resilience-management capacity has a documentable answer to a rating agency's questions about mitigation and adaptation posture, which can translate into borrowing-cost advantages.
- Strengthen locational and economic attractiveness. As property-insurance availability and pricing become active constraints on where businesses and residents can locate, a jurisdiction that can demonstrate organized resilience capacity — not just good luck avoiding the last disaster — has a real advantage in retaining and attracting both.
- Mobilize cross-sector leverage. Reduce sole reliance on government budgets by activating private, philanthropic, and nonprofit capacity before it is needed, rather than improvising partnerships during a crisis.
- Integrate resilience into normal-condition development planning, so that infrastructure, housing, workforce, and hazard-mitigation investment reinforce one another instead of operating in silos.
- Preserve institutional knowledge and relationships across crises — avoid rebuilding coordination capacity from scratch after every event, which is both slower and more expensive than maintaining it continuously.

An important caveat regarding evidentiary weight: the bond-rating and locational-attractiveness claims above are supported by the rating agencies' own published methodologies and by recent industry analysis. However, they should not be read as a claim that any specific CRO office produces a specific ratings or investment outcome — the literature supports resilience capacity as one input that rating agencies and investors weigh, not a guaranteed or quantified return.

Functions and Operations

A. Core Functions

Regardless of whether a CRO sits in a governor's office or a mayor's office, the same seven functions recur. What differs between state and local practice is scale and posture — the state CRO typically executes these functions as a statewide backstop, standard-setter, and planner, while the city or county CRO executes them as a direct convener and coordinator of local stakeholders — but the functions themselves do not change. The gaps identified in the Background section above are exactly why none of these functions can be performed well on convening authority alone, which the Executive Authorities section below addresses directly.

1. Risk, threat, vulnerability, and asset assessment.

This function should be narrowly scoped to the assessments that actually reduce disaster impact, displacement, and recovery duration — not a general-purpose hazard catalog. The output is a living inventory of what assets, systems, and populations are exposed, how exposed, and what has changed since the last assessment cycle. At the state level this typically means aggregating and standardizing local assessments and identifying cross-jurisdictional exposure the localities cannot see individually; at the local level it means direct inventory of specific facilities, neighborhoods, and business districts.

2. Planning.

Translating the assessment into an actual mitigation and continuity plan, integrated with — not separate from — the jurisdiction's normal capital-improvement and economic-development planning processes. A resilience plan that exists only as a standalone document, disconnected from the capital budget, is not a plan; it is a position paper.

3. Exercises, red teams, and stress tests.

Regular, structured testing of whether the plans and mechanisms built in normal conditions actually function. The exercise architecture developed for Community Resilience Networks, described in the CRO Toolbox below, is directly reusable here: a two-meeting annual cadence pairing an exercise with a planning and budget session, so that what the exercise reveals is immediately fed into the next budget cycle rather than filed and forgotten.

4. Baseline assessments and data capture.

Maintaining the shared data infrastructure — asset inventories, contact and capability directories, historical loss data — that every other function depends on. This is infrastructure work, not a one-time study; it degrades quickly if not maintained on a defined update cycle.

5. Partnership development.

Communication, coordination, and collaboration with the private, philanthropic, and nonprofit sectors, building the relationships and trust that let the jurisdiction draw on capacity it does not itself own — logistics and forecasting expertise from the private sector, volunteer capacity from faith-based and nonprofit networks, and flexible capital from philanthropy. This function also carries what earlier drafts of this manual treated as a separate function: ensuring that resilience and community and economic development are never managed as separate portfolios.

Partnership development is not just about disaster-phase relationships; it is the mechanism by which the CRO keeps infrastructure, housing, workforce, and capital-investment stakeholders talking to the resilience office in normal conditions, so that development decisions and mitigation decisions reinforce each other rather than working at cross purposes. A CRO who treats partnership development purely as an emergency-contacts list is underusing the function; done well, it is where resilience and development integration actually happen.

6. Mutual aid network development.

Building the formal agreements — neighboring jurisdictions, regional coalitions, private-sector supply partners — that let a jurisdiction call on outside capacity when its own is exceeded. The Regional and Interstate Compacts authority, below, addresses the state and interstate version of this function in more depth.

7. Parametric insurance and financial instruments.

Negotiating and maintaining the financial mechanisms — parametric coverage, revolving funds, pooled risk arrangements — that provide fast, pre-agreed liquidity for surge capacity, retention of local capacity through a shock, and stabilization funding in the gap between an event and federal recovery dollars arriving. The Insurance and Risk-Transfer Negotiation authority, below, covers the negotiating authority this function requires in more detail.

There are other economic, environmental, and community developmental functions that individual CRO offices may also be designated to fulfill. They may liaise and support economic developers, environmental and wildlife agencies, housing, and physical infrastructure agencies as well. That being said, the CRO function is not meant to be duplicative, but complementary. None of these functions is meant to duplicate emergency management, planning, or economic development. Emergency managers own response operations; the CRO owns the continuous, cross-phase coordination and financing layer that response agencies are not resourced to hold between events. Where the two roles meet — exercises, mutual aid, data sharing — the CRO's job is to make the emergency manager's job easier, not to compete for the same budget line.

B. Executive Authorities

Each authority below is described operationally; the legal conditions each one requires are addressed collectively, and only at the level of what must be true rather than what a statute should say, in Statutory Requirements and Enabling Conditions, below.

A CRO's plans and partnerships are only as good as the jurisdiction's actual confidence that they will work when needed.

Readiness auditing.

This manual proposes a narrow, specific inspection authority: the authority to verify that CRN members, mutual aid partners, and pre-positioned financial mechanisms are actually prepared and operational, not merely on paper. This is deliberately distinct from existing code enforcement, fire marshal, or building inspection authority, which examine whether a structure meets a static standard. Readiness auditing examines whether a coordination commitment — a memorandum of understanding, a mutual aid agreement, a financial mechanism's triggering conditions — will actually perform under stress. Scoping the authority this way avoids a jurisdictional fight with existing inspection regimes while filling a genuine, currently unfilled gap: nobody today audits readiness the way a building inspector audits code compliance.

Insurance and risk-transfer negotiation.

The CRO should function as the jurisdiction's deal-broker and convener for parametric and pooled coverage instruments — not as an insurance regulator, and not in competition with a state insurance commissioner's market-conduct authority, but as the person empowered to negotiate, structure, and maintain the specific coverage mechanisms the jurisdiction uses for its own surge, retention, and stabilization needs. This connects directly to the disaster bridge financing work already underway at ISD: the parametric platform, the revolving fund, and neighborhood-level financing mechanisms designed to close the two-to-three-year gap between a disaster and the arrival of federal recovery funds. Without a designated negotiating authority, these instruments tend to get renegotiated informally, inconsistently, and under duress every time a new administration or a new crisis arrives; with one, they become a durable part of the jurisdiction's financial infrastructure. The federal STORM Act's Safeguarding Tomorrow Revolving Loan Fund program and Maryland's own \$25 million Revolving Loan Fund for Resilience (S.B. 901, 2021) illustrate the same design lesson from opposite ends: a financing instrument built around one clearly bounded purpose is easier for a CRO to negotiate, govern, and sustain than one asked to serve many objectives at once. See ISD's companion paper, *Financing State and Local Resilience: Lessons from the STORM Act and Maryland's Revolving Loan Fund*, for a full treatment.

Regional and interstate compacts.

The existing national model for interstate disaster cooperation, the Emergency Management Assistance Compact (EMAC), is almost entirely a response-phase instrument — it moves personnel and equipment across state lines during an active emergency, but has no real analogue for the stabilization or recovery phases, and no equivalent machinery for resilience-building in normal conditions. This manual proposes that CROs be explicitly authorized to negotiate and enter regional or interstate compacts that extend EMAC's logic to those later phases: shared financing mechanisms, shared technical assistance capacity, and shared data infrastructure across jurisdictional lines, agreed to in advance rather than improvised after the fact. Positioning this authority as EMAC's resilience-and-recovery-phase analogue, rather than as a new and unprecedented power, gives it a legitimated structure to extend rather than invent from scratch — which matters politically as much as it matters operationally.

Budget authority and the sustainability problem.

This is the authority the other three depend on. A CRO with inspection, negotiation, and compact authority but no budget still cannot act — every initiative reverts to a grant application. The funding architecture this manual proposes treats government as the anchor operating funder, with philanthropy providing seed capital for new initiatives and federal grants functioning as capital infusions for specific projects rather than as a substitute for an operating budget. This directly answers the “philanthropy-funded” failure mode named in the Background section above: a CRO office funded primarily by grants and foundation support is, by construction, exactly as durable as the next grant cycle. A CRO office with a standing line item in the jurisdiction's general fund is durable in a fundamentally different way — it survives a change in foundation priorities, a change in federal administration, and a change in local leadership, because its funding does not depend on any of those things individually.

C. The CRO Toolbox (Instruments)

Community Resilience Networks.

A Community Resilience Network (CRN) is a whole-of-society coordination architecture — not merely a disaster preparedness program, but a community development and risk-management platform that generates value in normal conditions and surges in capacity when a crisis strikes. Its organizing device is the Diamond-Cylinder framework, shown in Figure 3.

The Diamond describes four coordination dimensions:

- Functions — communications, operations, logistics, planning, finance
- Systems — water, energy, food, healthcare, education, housing, transportation
- Actors — government, business, faith-based organizations, nonprofits, academia, philanthropy
- Governance scale — neighborhood, council-of-governments/regional, state, federal

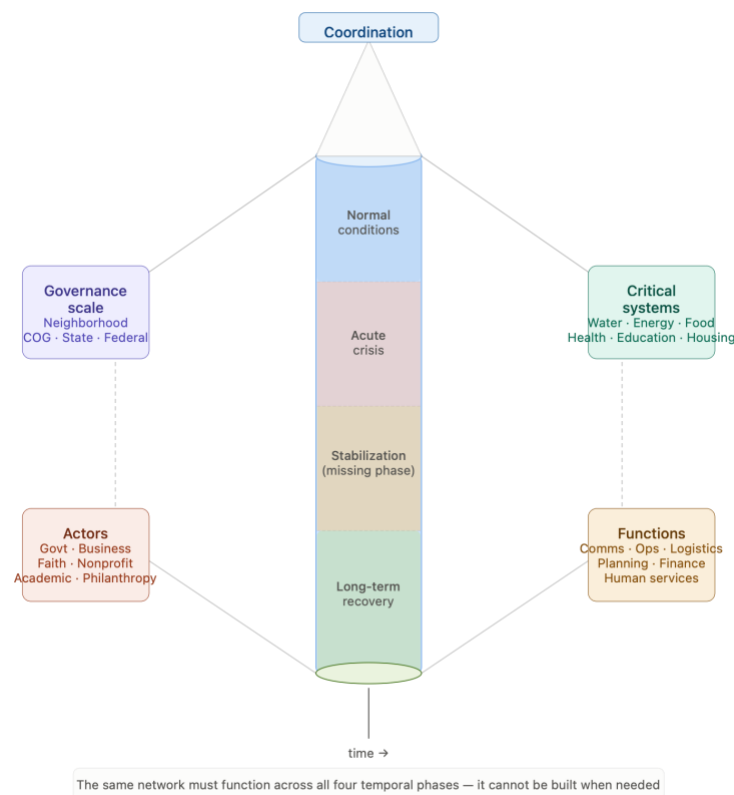


Figure 3. The Diamond-Cylinder framework.

The Cylinder runs through the center of the Diamond, representing the temporal continuum a CRN must serve continuously: normal/steady-state conditions, acute crisis, stabilization — the phase most existing disaster-recovery frameworks omit entirely — and long-term recovery. The central operational insight is that the same network must serve all four phases, because a network built only for crisis conditions cannot be assembled fast enough once a crisis has already begun. You cannot build what you need when you need it.

Governance Scale: Most resilience efforts have to take place at the local level, but relationships at the state and federal levels should be built during normal operating conditions as well, in order to enhance the flow of outside help in the event of an emergency. There are often a number of bottlenecks and parallel efforts taking place at the local, state, and federal levels, and it's important to build jurisdictional trust before anything happens.

Actors: There is a growing recognition that the private and nonprofit sectors can leverage enormous resources. While individual contributions might be relatively small, in aggregate, they can dwarf governmental resources. Chambers of commerce, VOADs (volunteer organizations active in disasters) and industry groups and community associations can play enormous roles in response, stabilization and recovery, but there are significant problems of “gapping” (under-service) and “clumping” (over-service) because so often individual businesses or organizations are disconnected from coordinated networks and information sharing access.

Systems: The criticality of water, power, communications, financial services, roads and other infrastructures is well-known. What isn't appreciated as much is the importance of small businesses like day care centers, convenience stores, and sign-making stores, to name a few.

Functions: Communications, planning, evaluation, operations, emergency services, and other functions need to coordinate as well. COVID-19 showed the importance of coordinating messages and clarity. Logistics continually proves its worth.

CRNs deliver a dual-use dividend even in years with no disaster at all: the cross-sector asset inventory doubles as an economic-development database; the trusted-messenger relationships built through the network reduce transaction costs on unrelated community initiatives; the pre-built financial mechanisms are available for non-disaster stabilization needs; and the annual exercise cadence functions as a leadership-development program for the jurisdiction's own staff and partners.

A minimum viable CRN requires five things: a permanent convener, a cross-sector asset inventory, a governance structure, at least one pre-built financial or coordination mechanism, and a regular exercise cadence. ISD's own experience running Together for LA — a small-business recovery collaborative launched in 2020 for COVID-19 response and reactivated in 2025 for the LA wildfires without having to be rebuilt from scratch — is the clearest evidence available that a network designed this way actually performs across more than one crisis. Full case-study detail is in Appendix B. The fuller theoretical and policy genealogy underlying this section — Project Impact, Whole Community, BRIC, Putnam, Ostrom, and the NIST Community Resilience Planning Guide — is addressed through citation in the Selected Bibliography (Appendix E) rather than developed at length here, so this section stays instrument-focused rather than paper-length.

The CRO's relationship to a CRN is straightforward: the CRO is the natural permanent convener a minimum-viable CRN requires, and the CRN is the instrument through which the CRO's partnership-development and mutual-aid functions get executed in practice, rather than existing only as job-description language.

Other instruments.

CRNs are not the only tool in the CRO's toolbox. The instruments below round out the toolbox and are presented at survey level. Each requires jurisdiction-specific design, governance, financing, and implementation guidance:

- Resilience hubs — physical, typically neighborhood-scale facilities that provide services in normal conditions (community space, cooling/warming centers, digital access) and convert to crisis functions (charging, distribution, sheltering) during an event.
- Business resilience centers, which complement the existing Business Emergency Operations Center (BEOC) model used in some jurisdictions to give the private sector a formal seat inside emergency operations during response — extended here to also operate in normal conditions as a standing point of contact between the jurisdiction and its business community.
- Exercise and tabletop programs, standalone from the CRN-specific exercise cadence described above, for testing capabilities that sit outside any single network — for example, jurisdiction-wide continuity-of-government exercises.
- Shared data and inventory systems, the technical infrastructure underlying the baseline-assessment function described above.
- Mutual aid and shared-services agreements, the operational implementation of the compact authority described above at a sub-state or informal scale.

Statutory Requirements and Enabling Conditions

This section is deliberately scoped as a diagnostic framework, not model legislation. CRO placement and legal structure vary too much across states and cities — Dillon's Rule versus home-rule jurisdictions, governor's-office versus agency placement, charter versus ordinance routes — for one-size-fits-all statutory language to be credible. A bill template specific enough to be useful in one state will likely read as naive or simply wrong in another. Instead, this section lays out the conditions that must legally exist for the functions and authorities described above to actually operate, leaving the specific statutory or ordinance language to be drafted for each jurisdiction on its own terms.

Conditions that must exist

- Budget line-item authority — a standing appropriation, not a grant-dependent allocation (answers the Budget Authority requirement above).
- Cross-agency directive or convening authority — the legal standing to require, not merely request, coordination from other departments and agencies.
- Data-sharing authorization across departments and with private and nonprofit partners, including whatever privacy and security provisions that sharing requires.
- Liability and indemnification coverage for exercises, red-teaming, and readiness inspections, so that testing a mechanism does not expose the jurisdiction or its partners to new legal risk (answers the Readiness Auditing authority above).
- Authority to negotiate and bind the jurisdiction to insurance and risk-transfer instruments (answers the Insurance and Risk-Transfer Negotiation authority above).
- Authority to enter regional or interstate compacts on the jurisdiction's behalf (answers the Regional and Interstate Compacts authority above).

What this section does not attempt.

It does not draft the statute or ordinance language itself. Every condition above can be satisfied through different legal instruments depending on the jurisdiction — some through a standalone enabling statute, some through amendment to existing emergency management or planning law, some through executive order backed by budget appropriation, some through city charter provisions. Jurisdiction-specific statutory or ordinance drafting is, accordingly, treated in this manual as a technical assistance engagement to be scoped separately, not as something a general-audience field manual can responsibly solve for every reader at once.

Implementation

Establishing the position.

At the state level, a CRO can be established either by executive order or by statute; the Louisiana experience is instructive on the difference. Louisiana's CRO began under a 2020 executive order and operated for three years before the legislature codified the position permanently in 2023 — meaning the office effectively ran a multi-year pilot under executive authority before committing to statutory permanence. That sequence — pilot under executive order, then codify once the office has demonstrated value — may be a more achievable path in many states than seeking statutory authorization for an unproven office from a standing start.

At the city or county level, the equivalent choice is typically between a mayoral or executive appointment (fastest to stand up, most vulnerable to a change in administration) and a charter amendment or ordinance (slower, but durable across administrations). Given how many city-level CRO offices did not survive the transition from the administration that created them, this manual recommends the ordinance or charter route wherever it is politically achievable, even if it takes longer to establish.

The stand-up sequence.

Phase	Focus
Months 1–6 Diagnostic and convening	Establish the office; conduct the initial risk and asset assessment (Core Function 1); begin the partnership-development work needed to identify the jurisdiction's first CRN or other instrument.
Months 7–12 Mechanism development	Stand up at least one pre-built financial or coordination mechanism, and run the jurisdiction's first exercise (Core Function 3) to test it.
Months 13–18 Governance formalization	Move from executive-order or informal footing toward the durable legal structure described in Statutory Requirements and Enabling Conditions, and secure the standing budget line item described under Budget Authority.

Policy recommendations.

- Federal: use vulnerability and economic metrics to inform equity considerations in current mitigation grant programs as these are usually highly correlated to environmentally and climactically exposed areas; create a CRN and CRO intermediary designation within FEMA so that jurisdictions with a functioning office and network have a recognized channel for federal partnership; codify the stabilization phase as a distinct, fundable phase between response and CDBG-DR-funded long-term recovery.
- State: empower councils of governments to serve as regional conveners where individual localities lack the capacity to stand up their own CRO office; fund CRN and CRO operations as a standing budget category rather than a discretionary grant line; use the Louisiana sequence (executive-order pilot, then statutory codification) as a template for states without an existing CRO.
- Local: commit to the line item — the single most important local recommendation in this manual, because nothing else in this manual functions without it.

Outlook and Conclusion

Three trends will keep pressure on this argument in the coming years. First, disaster frequency and cost are not leveling off; the risk side of the equation described at the outset of this manual will keep getting larger, not smaller. Second, federal disaster and mitigation policy has proven unstable across administrations — BRIC's cancellation and reinstatement within a single presidential term is a case in point — which means jurisdictions that depend entirely on federal programs for their resilience capacity will keep experiencing exactly the kind of disruption this manual is designed to insulate against. Third, the insurance market's own retreat from high-risk geographies is turning resilience capacity from a “nice to have” into a hard constraint on where people and businesses can afford to live and operate — which will keep making the fiscal and locational case in the Goals and Objectives section more urgent, not less.

The famous investor Warren Buffett frequently said that the first rule of investing should be “don’t lose money.” For communities that have so many demands on their scarce resources, this maxim might be even more important. Having a resilience function and someone in charge of managing place-based downside risk is not a “nice to do”. It is a “must do.”

This manual is offered as a starting framework, not a fixed template. Jurisdictions should expect to adapt it — different functions will matter more in different hazard profiles, different legal routes will be available in different states, and different instruments in the toolbox will fit different community structures. What should not be negotiable is the underlying premise: that resilience is a continuous executive management function, not an episodic disaster program, and that whoever is responsible for it needs real authority to match that mandate.

The Bipartisan Case for Resilience

Resilience should be like other issues where both parties can agree and find common ground. The argument in this manual is, at its foundation, a conservative one in the Burkean sense: it asks government to strengthen, not replace, the intermediate institutions — local business associations, faith communities, neighborhood organizations, mutual aid networks — that already carry more disaster-response and recovery capacity than most public agencies. A well-authorized CRO does not centralize resilience in government; it is precisely the office responsible for making sure government does not have to. That case should appeal as readily to a legislator focused on subsidiarity and civil society as to one focused on climate risk or fiscal prudence — which is exactly the durability this manual is trying to build into the role.

Appendices

Appendix A — Implementation Guidance and Checklist

This checklist operationalizes the eighteen-month stand-up sequence described in Implementation above into month-by-month detail. It assumes a state or local jurisdiction starting from a standing start (no prior CRO office); a jurisdiction converting an existing informal office to statutory footing can enter the sequence at Months 13–15. Documents, relationships, and authorities listed for each phase are cumulative — once established, they remain in force through the phases that follow.

Months	Key Tasks	Required Documents	Required Relationships	Required Authorities	Early Win
Months 1–2	Formally establish the office (executive order or ordinance); designate the CRO; begin stakeholder mapping.	Enabling executive order/ordinance; office charter or mission statement.	Governor's/mayor's office sponsor; key department heads (emergency management, planning, economic development).	Cross-agency convening authority (interim, even if informal).	Public announcement of the office with a named executive sponsor, signaling durability of commitment.
Months 3–4	Conduct the initial risk, threat, vulnerability, and asset assessment (Core Function 1); inventory existing plans, data sources, and relationships.	Risk and asset assessment methodology; draft asset inventory.	Local universities/research partners; utilities and infrastructure owners for data-sharing.	Data-sharing authorization across departments and with outside partners.	First cross-sector asset inventory, usable immediately by economic development for site-selection or grant applications.
Months 5–6	Complete the diagnostic and convening phase; identify the jurisdiction's first candidate CRN or coordination mechanism; begin partnership development with the private, philanthropic, and nonprofit sectors.	Draft CRN charter or MOU template; partner engagement list.	Chamber of commerce, VOADs, faith-based networks, major employers.	Convening authority sufficient to bring first partners to the table.	Signed intent-to-participate from at least three cross-sector partners for the jurisdiction's first CRN.
Months 7–9	Stand up at least one pre-built financial or coordination mechanism (parametric coverage, revolving fund, or mutual aid agreement); begin negotiating insurance and risk-transfer terms.	Financial mechanism term sheet or mutual aid agreement draft.	Insurance brokers/carriers; regional or interstate partner jurisdictions; philanthropic seed funders.	Insurance and risk-transfer negotiation authority; interim budget authority for seed funding.	First financial or coordination mechanism executed and publicly announced.
Months 10–12	Run the jurisdiction's first exercise or stress test (Core Function 3) to validate the mechanism; complete the mechanism-development phase; begin	Exercise after-action report; readiness-audit checklist.	Emergency management agency (co-design of exercise); CRN member organizations.	Readiness-auditing authority; liability and indemnification coverage for	A published after-action report demonstrating the mechanism performed as designed —

	readiness auditing of CRN members.			exercise participants.	the first concrete proof point for budget committees and partners.
Months 13–15	Begin transition from executive-order or informal footing to a durable legal structure (statute, ordinance, or charter amendment); draft the standing budget line-item request.	Draft enabling statute or ordinance; budget line-item proposal; readiness-audit results to date.	Legislative sponsors or council members; budget office.	No new authority is required in this phase — the task is converting the informal authorities exercised in Months 1–12 into durable statutory form.	Introduced legislation or ordinance with identified sponsor(s).
Months 16–18	Secure the standing budget line item; finalize statutory or ordinance codification; formalize regional or interstate compact relationships where applicable; publish the office's first annual resilience report.	Enacted statute or ordinance; approved budget appropriation; first annual resilience report.	Full CRN membership; regional or interstate compact partners.	Full budget authority (standing line item, not grant-dependent); regional and interstate compact authority.	A published first-year resilience report the office can point to in the next budget cycle — converting an eighteen-month pilot into a durable, funded function.

Appendix B — Together for LA (2020–2025)

This appendix expands the case-study reference made in the CRO Toolbox section above — cited there at the level of a sentence or two — into fuller narrative detail for readers who want the underlying evidence, particularly philanthropy and foundation audiences evaluating whether to fund a CRN or CRO office.

Together for LA is a small-business recovery collaborative launched in 2020 by LA County, the LA Area Chamber of Commerce, LISC LA, the Dr. Lucy Jones Center for Science and Society, the Institute for Sustainable Development, and Wells Fargo, originally to coordinate small-business relief during the COVID-19 pandemic.

The collaborative was reactivated in 2025 to support small-business recovery during the LA wildfires, without having to be rebuilt from scratch. The same convening structure, partner relationships, and coordination mechanisms established for the 2020 response were still intact and functional five years later, and could be redeployed immediately against a very different hazard.

This is the clearest evidence available that a Community Resilience Network designed around a permanent convener, a cross-sector partner base, and a durable governance structure — rather than around a single hazard — actually performs across more than one type of crisis. A network stood up only for pandemic response would not, by default, have been reusable for a wildfire response; Together for LA's structure was.

Appendix C — Glossary and Acronyms

BEOC — Business Emergency Operations Center. A structure that gives the private sector a formal seat inside emergency operations during response. Distinct from a standing Business Resilience Center that also operates in normal conditions.

BRIC — Building Resilient Infrastructure and Communities. FEMA's primary pre-disaster mitigation grant program.

CDBG-DR — Community Development Block Grant – Disaster Recovery. HUD funding stream for long-term recovery after major disasters.

COG — Council of Governments. Regional planning and coordination body; often a practical scale for shared resilience capacity when individual localities lack resources.

Community capital — The portfolio of assets a community holds across multiple dimensions (natural, economic/financial, physical/infrastructure, human, social, political/institutional, cultural, and related forms). Weakness in one form can cascade to others. Central to ISD's Development Support Functions framework.

CRN — Community Resilience Network. A whole-of-society coordination architecture organized around the Diamond-Cylinder framework (Functions, Systems, Actors, Governance scale + the temporal continuum of normal conditions → acute crisis → stabilization → long-term recovery). Designed to deliver value in ordinary times and surge capacity in crisis. A minimum viable CRN requires a permanent convener, cross-sector asset inventory, governance structure, at least one pre-built financial or coordination mechanism, and a regular exercise cadence.

CRO — Chief Resilience Officer. Senior executive responsible for continuous, cross-sector ownership of community or state resilience—risk and asset assessment, planning, exercises, data management, partnership development, mutual aid, and financial instruments—supported by real authorities rather than convening power alone.

Development Support Functions (DSF) — ISD framework that treats disaster management as a special use case of community development rather than a separate system. Positions resilience as the function that protects and enables the other forms of community capital in both normal conditions and disruption.

Dual-use dividend — The normal-condition benefits generated by resilience investments and networks (e.g., better economic-development data, lower transaction costs through trusted relationships, leadership development via exercises, pre-built financing mechanisms available for non-disaster needs).

EMAC — Emergency Management Assistance Compact. The primary interstate mutual-aid system for response-phase personnel and equipment. The manual proposes extending analogous compact authority into stabilization and recovery phases.

FEMA — Federal Emergency Management Agency.

Parametric insurance / parametric coverage — Financial instrument that pays out rapidly based on pre-agreed triggers (e.g., wind speed, rainfall, earthquake magnitude) rather than assessed loss. Valuable for bridge financing in the gap between an event and traditional recovery funds.

Readiness auditing — Narrow inspection authority proposed for the CRO: verification that coordination commitments (MOUs, mutual-aid agreements, financial-mechanism triggers) will actually perform under stress, distinct from traditional code or building inspection.

Stabilization (phase) — The critical but often under-resourced period between immediate response and long-term recovery. Focused on retaining local capacity, preventing secondary collapse of businesses and institutions, and creating conditions for recovery to begin. Explicitly included in the CRN temporal continuum.

STORM Act — Safeguarding Tomorrow through Ongoing Risk Mitigation Act (Pub. L. No. 116-284). Federal authority for capitalization grants that enable state, territorial, and tribal hazard-mitigation revolving loan funds.

Appendix D — Selected State and Local Chief Resilience Officers (or Equivalent Positions)

This appendix catalogs known formal Chief Resilience Officer (CRO) or closely equivalent positions based on publicly available information as of mid-2026. Counts and titles vary by source because some jurisdictions use “Director of Resilience,” “State Resilience Officer,” “Climate Chief,” or embed the function in broader offices. No single comprehensive national directory exists, and roles continue to evolve.

State-Level Positions (13)

State	Title / Equivalent	Placement / Key Notes	Authorizing Basis
California	Director (ICARP / equivalent)	Governor’s Office of Land Use and Climate Innovation	Statute
Colorado	Director of the Colorado Resiliency Office	Division of Local Government	Statute
Florida	Chief Resilience Officer	Statewide Office of Resilience, Office of the Governor	Statute
Louisiana	Chief Resilience Officer	Office of the Governor	Executive Order → Statute (2023)
Maryland	Chief Resilience Officer	Office of Resilience, Dept. of Emergency Management	Statute (2023)
Massachusetts	Climate Chief	Office of Climate Innovation and Resilience, Governor’s Office	Executive Order
New Jersey	Chief Resilience Officer	Office of Climate Resilience, NJDEP	Executive Order
North Carolina	Chief Resilience Officer	Office of Recovery and Resiliency (NCORR), Dept. of Public Safety	Statute
Oregon	State Resilience Officer	Related to Oregon Seismic Safety Policy Advisory Commission	Statute (2015)
Rhode Island	Chief Resilience Officer	Department of Environmental Management	Executive Order
South Carolina	Chief Resilience Officer	South Carolina Office of Resilience (cabinet-level)	Statute
Virginia	Chief Resilience Officer of the Commonwealth	Office of Commonwealth Resilience / Secretary of Natural Resources	Executive Order → Statute
West Virginia	State Resilience Officer	State Resiliency Office, Office of the Governor	Statute

City and County-Level Examples (50+)

Documented jurisdictions with CRO or strong functional equivalent roles include (drawn from Resilient Cities Network / 100RC legacy and additional public sources):

Resilient Cities Network / 100RC U.S. members and strong legacy cities:

Atlanta, Berkeley, Boston, Boulder, Broward County (FL), Chicago, Dallas, El Paso, Greater Miami and the Beaches, Honolulu, Houston, Los Angeles, Louisville, Minneapolis, Nashville, New Orleans, New York City, Norfolk, Oakland, Pittsburgh, San Francisco, Seattle, St. Louis, Tulsa, Washington DC.

Additional documented cities/counties: Austin, Baltimore, Charleston (SC), Charlotte, Cleveland, Columbus, Denver, Detroit, Flint (MI), Indianapolis, Jacksonville, Kansas City, Memphis, Miami-Dade County, Milwaukee, Oklahoma City, Orlando, Philadelphia, Phoenix, Portland (OR), Providence, Raleigh, Richmond, Rochester, Sacramento, Salt Lake City, San Antonio, San Diego, San Jose, Tampa, Tucson, Virginia Beach, and others.

Key observations: Coastal and high-hazard jurisdictions predominate. Many city roles originated under 100 Resilient Cities and later evolved or were absorbed into sustainability, emergency management, or planning departments. Authority, budget independence, and durability remain highly uneven — the central gap this manual addresses.

Appendix E — Selected Bibliography and Useful Resources

ISD Research, White Papers, and Field Reports (All available via <https://www.isdus.org/insights> and <https://www.isdus.org/insights/reports>)

- Institute for Sustainable Development. *Development Support Functions for Asset Protection and Growth: An Alternative Model for Managing Communities in Good Times and Bad*. Version 1.0 / Policy Paper, June 2026. (Flagship framework introducing nine forms of community capital and resilience as a tenth Development Support Function.)
- Institute for Sustainable Development. *An Introduction to Stabilization Management Principles*. White paper. Available at <https://www.isdus.org/insights>.
- Institute for Sustainable Development. *A National Strategy for State-Led Risk Management and Recovery*. White paper. Available at <https://www.isdus.org/insights>.
- Institute for Sustainable Development. *Maryland Economic Resilience and Disaster Recovery*. September 2021. (Findings from a year-long webinar and research series with the Howard County Economic Development Authority; supported by the U.S. Economic Development Administration.) Available at <https://www.isdus.org/insights/reports>.
- Institute for Sustainable Development and partners. *Together for Los Angeles Report #1*. December 2020. (Initial findings on the small-business response to COVID-19 in Los Angeles County and City.) Available at <https://www.isdus.org/insights/reports> and www.togetherforla.org.
- Institute for Sustainable Development and partners. *Together for Los Angeles Report #2: Small Business Recovery Report and Resource Guide*. June 2022. (Technical assistance priorities and network mapping.) Available at <https://www.isdus.org/insights/reports> and www.togetherforla.org. Supported by the Wells Fargo Open for Business Fund.
- Institute for Sustainable Development. *Southern California Thomas Fire lessons-learned report* (January 2019) and *Hurricane Harvey related materials* (2019). Available at <https://www.isdus.org/insights/reports>.

Disaster frequency, cost, and impacts

- NOAA National Centers for Environmental Information (NCEI). *U.S. Billion-Dollar Weather and Climate Disasters* (2025 update covering 2024). Confirmed 27 separate billion-dollar events in 2024 totaling \$182.7 billion in damages (fourth-highest annual cost on record; fifth consecutive year with 18 or more such events). <https://www.ncei.noaa.gov/access/billions/>
- Internal Displacement Monitoring Centre (IDMC). *Global Report on Internal Displacement (GRID 2025)*. Documented approximately 11 million disaster-related internal displacements in the United States in 2024—the highest single-country total on record and nearly one-quarter of the global disaster displacement total that year.

Benefit-cost evidence for mitigation

- National Institute of Building Sciences (NIBS), Multi-Hazard Mitigation Council. *Natural Hazard Mitigation Saves: 2019 Report*. National average benefit-cost ratios include approximately \$6 saved per \$1 invested for federal mitigation grants and higher ratios (commonly cited in the \$4–\$13 range depending on measure and hazard) for modern building codes and selected private-sector actions.

Climate and resilience capital markets

- Climate Policy Initiative. *Global Landscape of Climate Finance 2025* (covering 2023 flows). Tracked global climate finance reached approximately \$1.9 trillion in 2023, of which roughly \$1.78 trillion was mitigation, \$65 billion adaptation, and \$58 billion dual-benefit (adaptation figures are widely regarded as understated).
- Climate Bonds Initiative and related market reports; Bank for International Settlements reviews — for green-bond market size, issuance trends, and outstanding volumes.

Insurance industry, catastrophe risk transfer, and resilience-linked instruments

- U.S. Department of the Treasury, Federal Insurance Office, and National Association of Insurance Commissioners market data — for ZIP-code-level premium, nonrenewal, and claim-severity differentials between higher- and lower-risk areas.
- North Carolina Insurance Underwriting Association (NCIUA) and Artemis.bm coverage of *Cape Lookout Re Ltd. (Series 2025-1)*: \$600 million catastrophe bond incorporating an innovative resilience feature linked to verified FORTIFIED Home™ / stronger construction investments. NCIUA has publicly reported substantial cumulative investments (on the order of \$100 million+) supporting thousands of strengthened homes; specific rebate figures should be confirmed against NCIUA primary releases before final citation. A follow-on 2026 resilience-linked transaction has also been reported.
- Artemis.bm catastrophe bond and insurance-linked securities (ILS) market directory — for independent confirmation of structure, size, and innovation claims.

Credit rating agencies and municipal finance

- Moody's Investors Service. Methodologies incorporating environmental/physical climate risk and adaptation considerations into public-finance analysis.
- S&P Global Ratings. Climate-risk and ESG frameworks applied to U.S. municipal ratings.
- Fitch Ratings. Issuer-level climate-vulnerability scoring and the January 2025 placement of Los Angeles and related credits on Rating Watch Negative following the wildfires (with subsequent rating actions and outlook updates through mid-2025).

CRO governance landscape and enabling statutes

- Louisiana State Legislature. House Bill 526 (2023 Regular Session), enacted as Act 315 (La. R.S. 49:220.41 et seq.), signed June/July 2023. Permanently established the Chief Resilience Officer in the Office of the Governor after an earlier executive-order pilot, created supporting interagency coordination structures, and required an annual statewide resilience report.
- Oregon Revised Statutes § 401.913 (via H.B. 2270, 2015) — State Resilience Officer.
- Maryland Code, Public Safety Article § 14-1101 (2023) — Chief Resilience Officer and Office of Resilience.
- Environmental Defense Fund and Resilient Cities Network directories/mapping — for evolving counts and placement of state and local CRO or equivalent positions (note: no single comprehensive national directory exists; titles and authorities remain uneven).

Federal programs and intergovernmental finance

- Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Act, Pub. L. No. 116-284 (2021), amending the Stafford Act to authorize capitalization grants for

state/territorial/tribal hazard-mitigation revolving loan funds. Implemented by FEMA as the Safeguarding Tomorrow Revolving Loan Fund (RLF) program.

- U.S. Government Accountability Office. *Disaster Resilience: FEMA Should Improve Guidance and Assessment of Its Revolving Loan Fund Program* (GAO-25-107331, February 2025).
- Maryland Senate Bill 901 (2021) — \$25 million Revolving Loan Fund for Resilience (example of state-level design parallel to the federal STORM model). See also ISD companion paper *Financing State and Local Resilience: Lessons from the STORM Act and Maryland's Revolving Loan Fund*.
- FEMA, Building Resilient Infrastructure and Communities (BRIC) Notices of Funding Opportunity and related program documentation.
- National Emergency Management Association / Emergency Management Assistance Compact (EMAC) materials; Public Law 104-321.

Historical and illustrative case material

- City of New York. *A Stronger, More Resilient New York* (Special Initiative for Rebuilding and Resiliency, 2013) and related NOAA/NCEI post-Sandy cost analyses.
- LA County Economic Development Corporation, Institute for Sustainable Development, and partner records (2020–2025) — Together for LA collaborative (COVID-era stand-up and 2025 wildfire reactivation).
- University of Washington Institute for Hazard Mitigation Planning and Research / FEMA historical archives — Project Impact and related pre-disaster mitigation experience.
- Institute for Sustainable Development / LA County Economic Development Corporation and partners. Together for LA program records and after-action materials (2020–2025). Documents the original COVID-era small-business recovery collaborative and its 2025 reactivation for the Los Angeles wildfires without reconstruction of the network.

Additional useful resources

- NIST Community Resilience Planning Guide and related community resilience frameworks.
- National Association of State Budget Officers, *State Expenditure Report* series — for federal share of state budgets.
- Securities Industry and Financial Markets Association (SIFMA) municipal market fact sheets.