Insurance Design Sprint

EVENT BRIEF

New Risks Require New Tools

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RESILIENT CITIES CATALYST

Insurance Design Sprint Event Brief: New Risks Require New Tools

Creating solutions that support communities as they face increasing and changing risks from weather and disasters.

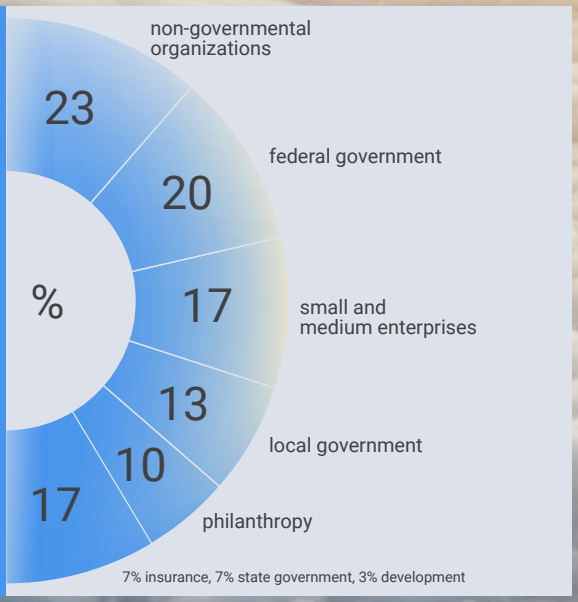
Climate-related disasters, such as wildfires, flooding, and extreme heat, pose a significant and increasing risk to communities across the United States. As private insurance markets contract or withdraw altogether in high-risk areas, governments are increasingly stepping in as insurers of last resort. Unlike private actors, local governments cannot opt out of safeguarding communities, providing essential services, and rebuilding after natural disasters. This ties government financial health directly to the effective management of increasing climate risks.

The **Insurance Design Sprint**, hosted by California Forward (CA FWD), Resilient Cities Catalyst, and the Federal Reserve Bank of New York on October 31 and November 1, 2024, brought together experts across sectors for two days of collaborative problem-solving. Inspired by the growing fiscal risks that climate impacts pose to governments, the Sprint's attendees identified market gaps, examined the stakes of inaction, and brainstormed bold, sustainable strategies to reduce community exposure to risk.

The Insurance Design Sprint engaged

30

participants from a diverse range of sectors, including



The Insurance Design Sprint agenda was strategically designed to allow participants to:

1. Explore the roles of different sectors, such as insurance companies, local governments, and data providers, in the risk reduction ecosystem and uncover the challenges and opportunities for incentive alignment,
2. Brainstorm solutions to key issues related to the intersection of climate risk ownership and available tools, especially those from insurance, such as risk-sharing and cost reduction, and
3. Elevate priority concepts that will be further developed as pilots and initiatives, including through a second design sprint in 2025.

The solutions that came through the Sprint aim to boost resilience to the impacts of climate change for communities by:

- Assigning measurable economic benefits to resilience action.
- Improving and scaling access to risk modeling that integrates climate change projections.
- Leveraging financial instruments to manage and transfer financial exposure from natural disasters.
- Establishing governance structures to enable shared investment across governments and the private sector.
- Developing accessible and standardized methodologies to determine insurance premiums and coverage.
- Catalyzing action by the federal government to ensure a more equitable distribution of risks and resources.

THE RESULT:

The Climate Resilience District Incubator

At the Insurance Design Sprint, attendees identified the climate resilience district concept as a promising solution to address climate risks. This led to the creation of the Climate Resilience District Incubator, a partnership between CA FWD and RCC to pilot and scale the concept. Modeled on California's new **Climate Resilience District** structure, these districts are formed by cities, counties, or local governments to pool tax-increment revenues and other financing tools for shared climate adaptation needs, such as wildfire mitigation and flood protection. This regional approach helps reduce long-term public sector fiscal risks and stabilize insurance markets.

CA FWD and RCC are now working to launch pilots in California and on the East Coast, potentially in New York or Connecticut. Over the next three years, these pilots will test innovative partnerships and financing mechanisms, with a learning network to support and refine strategies for wider application.

The Incubator will demonstrate a model that can be tailored to unique local conditions and scaled nationally and internationally to build resilience, reduce risk, and drive strategic investments in climate adaptation.

Insurance Design Sprint Event Summary: New Risk Requires New Tools

Creating solutions that support communities as they face increasing and changing risks from weather and disasters.

Climate-related disasters, such as wildfires, flooding, and extreme heat, pose a significant and increasing risk to communities across the United States. As private insurance markets contract or withdraw altogether in high-risk areas, governments are increasingly stepping in as insurers of last resort. Unlike private actors, local governments cannot opt out of safeguarding communities, providing essential services, and rebuilding after natural disasters. This ties government financial health directly to the effective management of increasing climate risks.

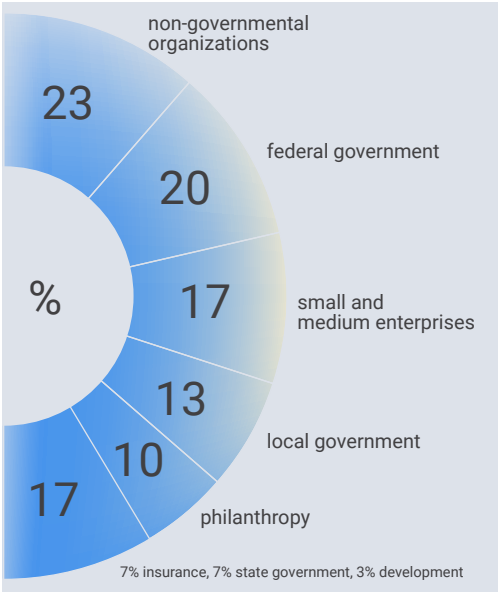
The impacts of climate change are increasingly apparent in the economic systems, especially through instability in the insurance market. Existing tools fall short, while development pressures, bureaucratic hurdles, and a lack of political will limit innovation and prevent effective adaptation.

The Insurance Design Sprint hosted by California Forward (CA FWD), Resilient Cities Catalyst (RCC), and the Federal Reserve Bank of New York on October 31, and November 1, 2024 brought together a group of experts across government, academia, insurance, philanthropy, and finance for two days of collaborative problem-solving aimed at addressing the growing fiscal risks that climate impacts pose to governments. Participants identified current market gaps and failures in addressing climate risk, examined the high stakes of inaction, and brainstormed bold strategies that leverage the insurance sector as a financial tool—specifically focused on reducing publicly held fiscal risks and supporting investment in long-term adaptation and mitigation efforts over time.

The Participants

The Insurance Design Sprint brought together 30 participants from a diverse range of sectors, including non-governmental organizations (7), federal government (6), local government (4), and state government (2). Additional representation included small and medium enterprises (5), funders (3), insurance industry professionals (2), and builders and/or developers (1).

This diversity of expertise was key to tackling the complex intersection of climate risk and fiscal resilience. By bringing together leaders across sectors, the Sprint encouraged fresh thinking around the growing insurance crisis, and allowed participants to shift beyond reactive solutions — reimagining tools and systems that align incentives. See Appendix A. for a list of the Design Sprint participants.



The Agenda

The Insurance Design Sprint agenda was structured to build understanding, foster collaboration, and develop actionable solutions to insurance market instability.

Day 1 explored the complexities of incentivizing action across sectors to address climate risks. Participants split into sector groups for "Exercise 1: Creating Silos," where each group created a poster—referred to as a silo—that outlined their role in the insurance ecosystem, incentives structure, and relationship to the insurance market. This exercise laid the groundwork for "Exercise 2: Silo Touring," where participants toured each sector's silo — asking questions and helping to refine the collective understanding of the problem and the perspectives of other participants.

SPEAKER HIGHLIGHT

Benjamin Dennis, Principal Economist of the Policy and Planning Section at the Federal Reserve Board of Governors, shared new evidence from mortgage escrow data in Florida that highlights the trade-offs in balancing affordable insurance access and economic growth with the growing contingent liabilities from climate-related losses.

Figure A. Insurance Design Sprint Silo Mapping Diagram

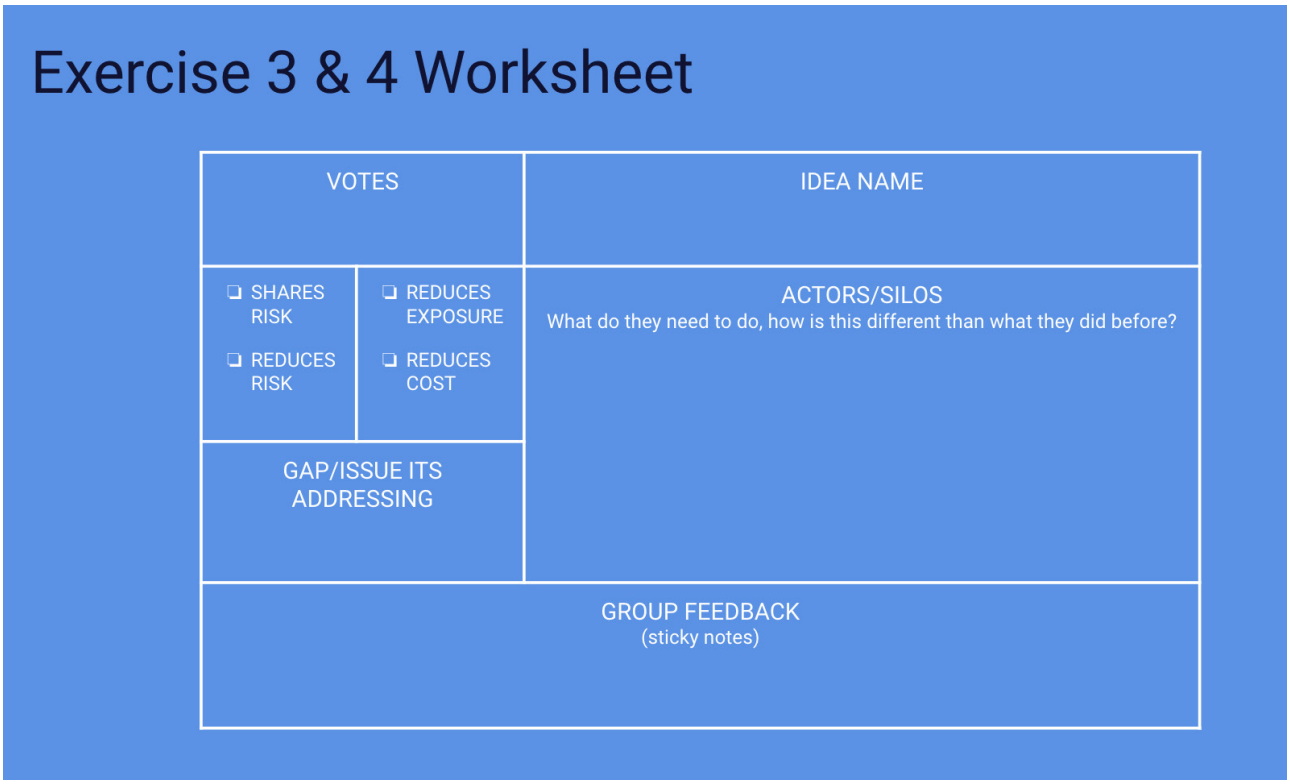
Day 1 culminated in a brainstorming session ("Exercise 3: Design Sprint Wish & Want"), where participants identified solutions to address facets of the critical insurance instability issue.

Day 2 focused on solutions-building with "Exercises 4 & 5: Design Sprint Make Better & Vote," which revisited a set of ideas from Day 1 and mapped out their primary goals, outcomes, and key actors and design features. In "Exercise 6: Idea Modeling," participants split into smaller groups to turn the refined set of concepts into pilot projects, then formalized the path forward in "Exercise 7: Idea Prioritization." By the end of the event, participants developed a set of pilots around concrete, actionable solutions and established clear next steps for further collaboration.

SPEAKER HIGHLIGHT

Charlie Sidoti, Executive Director of InnSure, highlighted his work leading the development of innovative insurance solutions and administering the Insurance Innovation Prize, backed by the New York State Energy Research and Development Authority, which aims to identify and promote groundbreaking approaches to address emerging challenges in the insurance industry.

Figure B. Insurance Design Sprint Solution Mapping



See Appendix B for the complete Insurance Design Sprint agenda.

The Silo Building & Touring Takeaways

In "Exercise 1: Creating Silos" & "Exercise 2: Silo Touring," the participants split into nine sectors, including: decision making and data, local government, state government, investors, research, non-governmental organizations, data providers and analysts, finance, and insurance. The key takeaways from the Silo Building & Touring exercises emphasize the interconnected nature of climate risks, the temporal nature of risk exposure, and the need for realigning sector incentives. Takeaways included the following:

- Climate risks are interconnected, and are not isolated to a single property, community, or jurisdiction. Risk reduction investments made by individual property owners may not sufficiently mitigate risks, and wildfires in one area do not only impact that immediate locale, but can have cascading effects on air quality, water resources, and public health across a much broader region. **This concept of a "Shared Risk Shed" emphasizes that multiple communities often share the burden of a single risk source.**
- The length of time stakeholders hold disaster risk can range from immediate impact to prolonged vulnerability, depending on their role in the ecosystem. For example, insurance companies may hold disaster risk for the duration of a policy period, while homeowners might face years of financial strain as they rebuild. However, **the government shoulders disaster risk indefinitely**, as it remains responsible for long-term recovery, infrastructure repair, and supporting vulnerable populations in perpetuity.

Figure C. Temporal Risk of Stakeholders

- Different sectors perceive and address climate risk in distinct ways based on the incentives for action in their sector. **Effectively mitigating climate risk and stabilizing the insurance market requires aligning incentives across sectors to drive meaningful action**.
- Our existing economic vocabulary falls short in capturing the scale and interconnected nature of the risks we face today. **Terms like "externalities" no longer reflect the magnitude and urgency of climate-related threats that pose risk across communities and regions.**

Figure D. Risk Gaps Caused by the Insurance Market

The Initial Ideas

Over the course of the 2-day Insurance Design Sprint, participants brainstormed over 100 initial ideas to address current market gaps and failures. Several key themes emerged from this initial brainstorm activity, including:

- **Establishing governance structures like climate resilience districts and creating instruments like resilience bonds to enable pooled investment across governments and the public and private sectors.** These tools can demonstrate long-term positive returns connected to climate resilience investments such as credit ratings, insurance stability, and disaster preparedness.
- **Assigning measurable economic benefits to resilience action.** By assigning a measurable economic benefit to resilience projects, sectors will be better incentivized to invest in solutions that build long-term resilience to natural disasters.
- **Improving and scaling access to risk modeling that integrates forward-looking projections of hazards and losses, rather than relying solely on historical intensities, frequencies, or damages.** Clearer understanding of future vulnerabilities enables better planning, investment, and insurance pricing.
- **Leveraging financial instruments, such as catastrophe bonds and weather derivatives, to manage and transfer financial exposure from natural disasters.** These tools securitize risk by enabling insurers, reinsurers, and public sector entities to share the financial burden with the capital markets, ensuring liquidity in the aftermath of catastrophic events.
- **Developing accessible and standardized methodologies for insurance companies to determine premiums and coverage.** This would increase transparency and enable policyholders, regulators, and other stakeholders to better understand the factors driving pricing and coverage decisions, while fostering accountability and trust in the system.
- **Action by the federal government to ensure a more equitable distribution of risks and resources,** including incentives and policies that support the insurance industry in expanding policy access in underserved communities.

The Solutions

Following the initial brainstorming exercise, participants identified seven priority solutions to further refine. These included:

Community-Scale Investments and Governance Structures

- **Climate Resilience Districts:** Refined governance structures that enable communities, jurisdictions, and regions to collaboratively address shared climate vulnerabilities and co-invest in resilience infrastructure have the potential to enhance both the availability and affordability of insurance. Climate resilience districts–formed by cities, counties, or other local entities–can leverage tax-increment revenues, benefit assessments, and other financing tools to fund critical climate adaptation projects, such as wildfire mitigation, drought response, and extreme heat interventions. By strategically co-investing in infrastructure that mitigates long-term climate risks, these districts not only strengthen community-level resilience, but can also help stabilize insurance markets by addressing systemic risks driving market volatility.

Improved Risk Modeling and Informed Decision Making

- **Climate-Risk Disclosure for Residential Home Sales:** Requiring climate risk disclosure for residential home sales would improve transparency and help buyers understand property risks. States could implement policies through legislation or actions by insurance commissioners by integrating climate risk into property underwriting. Local governments could require climate risk certificates via building departments, while the Federal Housing Finance Agency could mandate disclosures as part of mortgage requirements. In addition to requiring climate risk disclosure as part of real estate transactions, the following complementary actions would help ensure the broader property market ecosystem has the tools and capacity to meaningfully use disclosure as a tool to manage risk:
    - Private data providers could support these efforts by developing standardized tools and datasets for use across different markets.
    - Real estate brokers could receive training to communicate risks to their clients.
    - Civic organizations could leverage risk disclosure data to advocate for policy changes that drive investment in risk reduction and resilience action, aligning market practices with climate realities.
- **Reducing Expansion of New Development in High-Risk Areas:** As climate-related risks increase, insurers are withdrawing from vulnerable regions and raising premiums, signaling the financial reality of developing in high-risk zones. Local planners, zoning officials, and state agencies must work together to establish policies that limit and better manage development in these areas, helping to mitigate the growing insurance burden and reduce long-term disaster costs. Engaging a diverse coalition of stakeholders — including developers, farmers, natural resource managers , and smart growth advocates —can help build broad support for policies that promote sustainable development and preserve both human and environmental resilience. This approach would foster a deeper understanding of risk, leveraging insurance market trends to emphasize the true costs of high-risk development and support smarter, safer growth.

Leveraging Financial Instruments

- **Public Options Risk Underwriting:** Public Options Risk Underwriting allows the public sector to more effectively share risk with private insurers and other stakeholders. By transferring some of the risk from state insurance programs, which often take on high-risk policies, onto additional balance sheets (e.g., private markets, reinsurers, and public programs), the model reduces the risk borne by the public sector and promotes greater stability in public budgets.

- **Public-Private Fund to Finance High-Risk Relocation:** A public-private fund to finance high-risk relocation could provide a collaborative approach to addressing communities most vulnerable to climate impacts. The government would allocate seed funding to launch the initiative and share costs with private sector investors who bring additional capital. The fund would identify high-risk areas for strategic relocation, as well as low-risk locations suitable for resettlement. Private investors could generate returns through innovative mechanisms, such as land buyouts tied to redevelopment opportunities. This approach would not only reduce long-term public costs associated with repeated climate disasters but also create opportunities for sustainable, risk-informed development.
- **Guarantee Backstop Fund to Encourage Investment in Resilience:** A fund established by a government entity, with contributions from philanthropy and private sector partners, would provide guarantees or risk mitigation for investments in climate resilience projects. Insurers could play a key role by identifying and developing ideas for adaptation projects that reduce risk, such as large-scale public infrastructure initiatives like open space management and watershed rehabilitation. Philanthropic organizations would support the fund with additional capital to help kickstart and de-risk investments.

Accessible and Standardized Methodologies for Assessing Risk

- **Framework for Insurers to Account for Adaptation and Lower Premiums / Resilience Savings Account:** Developing a standardized framework for assessing and pricing climate risks, including the net effect of adaptation efforts, can create a positive feedback loop that stabilizes the insurance market. By incorporating the impact of resilience measures into premium calculations, insurers can align pricing with actual risk levels, incentivizing further adaptation while making insurance more affordable and accessible. This framework would enable insurers to take a long-term view of risk, reducing pricing volatility and fostering more predictable, sustainable premiums. Standardization across the industry would also enhance transparency, support fair regulatory oversight, and prevent perverse incentives, ensuring insurers remain engaged in high-risk areas while promoting investment in climate resilience.

The Pilot: Climate Resilience Districts

The Insurance Design Sprint culminated in the selection of a single concept to build out as a pilot: **the climate resilience district concept**. Participants organized into three groups that focused on the district's application in locations across the country, including California, New York, and Connecticut.

Together, the groups shaped a pilot that would establish a set of climate resilience districts in different regions of the United States, to pilot innovative models and partnerships that can deliver strategic investments in risk reduction and climate resilience, reducing the long-term fiscal risks to the public sector and insurance market stabilization.

The resilience district model builds upon the newly authorized Climate Resilience District structure in California, a form of special district composed of cities, counties, or other local government entities that apply tax-increment revenues and other financing mechanisms to shared climate adaptation needs across communities. The pilot would include a learning network across the different pilots to share and translate to a national, and potentially international, scale.

Conclusion & Next Steps

The Insurance Design Sprint brought into focus the pressing need for new approaches to address the growing risks posed by climate change. As private insurers continue to retreat from high-risk areas, governments are increasingly stepping in to fill the gap, with long-term fiscal implications for public budgets. The event highlighted the importance of rethinking how risk is shared and managed across sectors, aligning incentive structures across sectors, and boosting transparency to allow for better-informed decision making. The solutions developed throughout the Sprint aim to make insurance a tool for boosting resilience to the impacts of climate change through data and modeling, financing tools, governance structures, and policy.

Following the Sprint, CA FWD and RCC are formalizing the structure of the climate resilience district pilots through a Climate Resilience District Incubator. The Incubator will play a pivotal role in advancing the development of multiple climate resilience districts across the U.S., with CA FWD leading a California pilot and RCC leading an East Coast pilot, potentially in New York or Connecticut. Together, the partners will build a learning network across the pilots, with the aim of translating successful models nationally and internationally. In addition, CA FWD and RCC will host a second Design Sprint in California in 2025 to carry forward the ideas identified in the 2024 Design Sprint.

Appendix A. List of Participants

- **Ricardo Bayon**
  Partner
  Encourage Capital
- **Talley Burley**
  Manager, Climate Risk & Insurance
  Environmental Defense Fund
- **Manann Donoghoe**
  Senior Research Associate
  Brookings Metro
- **Austin Dziki**
  Senior Manager, Environmental Infrastructure
  Connecticut Green Bank
- **Laurian Farrell**
  Commissioner, Bureau of Coastal Resilience
  New York City Department of Environmental Protection
- **David Ignell**
  Climate Lead Examiner
  Federal Reserve Bank of New York
- **Derek Jones**
  Principal & Consulting Actuary
  Milliman
- **Ed Kearns**
  Chief Data Officer
  First Street Foundation
- **Nuin-Tara Key**
  Executive Director, Programs
  California Forward
- **Claire Kramer Mills**
  Director of Community Development Analysis
  Federal Reserve Bank of New York
- **Jonathan Leape**
  Senior Infrastructure Advisory Consultant Arup
- **Timothy Little**
  Municipal Markets and Public Finance
  Federal Reserve Bank of New York
- **Malcom Macgregor**
  Senior Policy Analyst
  Federal Housing Finance Agency
- **Julian Macrone**
  Community Development Specialist
  Federal Reserve Bank of New York
- **Jonathan Meyers**
  Partner
  HR&A Advisors
- **Renu Mittal**
  Program Officer, Environment Program
  Walton Family Foundation
- **Paul Nelson**
  Founding Principal
  Resilient Cities Catalyst
- **Monica Palmiera**
  Climate Finance Strategist
  Greenlining Institute
- **Danielle Petretta**
  Environmental Sustainability Coordinator
  Office of Stamford Mayor Caroline Simmons
- **Anna Ponting**
  Chief of Staff
  New York City Department of Environmental Protection
- **Steven Rothstein**
  Director, Ceres Accelerator
  Ceres
- **Jordan Salinger**
  Deputy Director, Adaptation Strategies
  New York City Mayor's Office of Climate and Environmental Justice
- **Charlie Sidoti**
  Executive Director
  InnSure
- **Chrissy Sollenberger**
  Senior Officer, Philanthropy
  Innovaciones Allumbra
- **Andrew Salkin**
  Founding Principal
  Resilient Cities Catalyst
- **Annalee Tai**
  Assistant Vice President, Product Manager, Public Sector Solutions
  Swiss Re
- **Jason Vargo**
  Senior Researcher, Community Development
  Federal Reserve Bank of San Francisco
- **Adam Zurofsky**
  Advisor
  New York State Energy Research and Development Authority

Appendix B. Insurance Design Sprint Agenda

Date & Time:

October 31, 2024
from 9:00 a.m. - 3:00 p.m.

November 1, 2024
from 9:00 a.m. - 1:45 p.m.

Location:

Federal Reserve Bank of New York
(33 Liberty Street New York, New York 10045)

DAY 1 AGENDA | Thursday, October 31, 2024

8:30 - 9:00 **Registration**

9:00 - 9:20 **Welcome**
Speakers:

- *Claire Kramer Mills, Assistant Vice President and Director of Community Development Analysis, Federal Reserve Bank of New York*
- *Julian Macrone, Community Development Specialist, Federal Reserve Bank of New York*

9:20 - 9:50 **Program Introduction**

Speakers:

- *Andrew Salkin, Founding Principal, Resilient Cities Catalyst*
- *Nuin-Tara Key, Executive Director, CA FWD*

9:50 - 12:00 **Understanding the Risk and Insurance Ecosystem:**

9:50 - 11:05	Exercise 1: Creating Silos
11:05 - 11:20	Break
11:20 - 12:00	Exercise 2: Silo Touring

12:00 - 12:30 **Lunch**

12:30 - 12:50 **Presentation: Property Insurance and Disaster Risk: New Evidence from Mortgage Escrow Data**

Speaker: Benjamin Dennis, Principal Economist, Board of Governors of the Federal Reserve System

12:50 - 1:05 **Presentation: Insurance Innovation Prize**

Speaker: Charlie Sidoti, Executive Director, InnSure

1:05 - 2:45 **New Solutions | Design Sprint - Ideation**

1:05 - 1:15	**Presentation: Insurance Innovations Snapshots**
	Speakers:
	- *Andrew Salkin, Founding Principal, Resilient Cities Catalyst*
	- *Nuin-Tara Key, Executive Director of Programs, CA FWD*
1:15 - 2:00	**Exercise 3: Design Sprint | Wish & Want**
2:00 - 2:45	**Exercise 4: Design Sprint | Make Better & Vote**
2:45 - 3:00	**Closing**
	Speaker: Kate Gordon, CEO, CA FWD
3:00 - 3:45	**Coffee & Refreshments**
3:45	*Optional Walking Tour & Happy Hour*

DAY 2 AGENDA | Friday, November 1, 2024

8:30 - 9:00	**Coffee**
9:00 - 9:15	**Welcome**
9:15 - 12:00	**New Solutions | Design Sprint - Refinement & Path Forward**
9:15 - 10:00	**Discussion: Day 1 Ideas | Review and Increase Ambition**
	Speakers:
	- *Andrew Salkin, Founding Principal, Resilient Cities Catalyst*
	- *Nuin-Tara Key, Executive Director of Programs, CA FWD*
10:00 - 10:45	**Exercise 5: Design Sprint | Make Better & Vote**
10:45 - 12:00	**Exercise 6: Design Sprint | Idea Modeling**
12:00 - 12:45	**Lunch**
12:45 - 1:30	**Exercise 7: Design Sprint | Idea Prioritization**
1:30 - 1:45	**Closing**