# **Ready-to-Fund** Resilence

AMERICAN SOCIETY OF ADAPTATION PROFESSIONALS Consulting



Climate

# Welcome & Orientation



## **Training staff**

- Instructors
  - Rachel Jacobson (American Society of Adaptation Professionals)
  - Jonathan Lee and Ida Sami (Climate Resilience Consulting)
- Expert Presenter
  - **Joyce Coffee**, Climate Resilience Consulting
- Tech support on Zoom and Slack
  - Meagan Putnam, American Society of Adaptation Professionals







## Thank you to our sponsors!





This material is based upon work supported by the Department of Energy and the Michigan Department of Environment, Great Lakes and Energy under Award Number(s) EE0008653. > ectin



## Agenda

- 12:00 Welcome & Orientation
- 12:15 Introduction to Climate Resilience Funding and Finance
  - Joyce Coffee, Founder and President, Climate Resilience Consulting
- 12:45 Q&A with Joyce
- 12:55 Break
- 1:00 Small Group Activity
- 1:25 Debrief and Look Ahead
- 1:30 End







## Learning Objectives



- Identify the 10 characteristics of ready-to-fund resilience projects.
- 2. Recall at least five mechanisms that can be used to fund climate resilience projects.
- Describe the interests of key stakeholders who may influence a climate resilience project's funding and finance prospects.

## **Meeting Norms**





American Society of Adaptation Professionals





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## 33%

#### Work with local governments

### **Adaptation Professional**

Someone who uses future climate information into their day to day work.



### People & Communities at the Forefront of Climate Change

People who are **highly exposed to climate risks** because of where they live or work.

People who have **fewer resources**, **capacity**, **safety nets**, **or political power to respond** to those risks **because of widespread discrimination**.

- Black people, Indigeonous Peoples, people of color
- People with low incomes and from low income backgrounds
- Immigrants, those at-risk of displacement, and unhoused people, and renters
- Old and young people
- Outdoor workers, people with disabilities, and chronically ill or hospitalized people

The knowledge and lived experience of people who hold these identities, backgrounds, and characteristics is invaluable for designing and implementing equitable and effective climate adaptation measures.



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### **Capacity-Building Program Areas**



# Ready-to-Fund Resilience



American Society of Adaptation Professionals



## Ready-to-Fund Resilience Program



## Thank you to our experts, partners, and funders!



Grace Earle, Senior Associate at the Global Impact Investing Network



Vernon Walker, Senior Program Manager at the Better Future Project



Kristin Baia, Climate Resilience Programs Director at the Urban Sustainability Directors Network



Omar Muhammad, Executive Director at the Lowcountry Alliance for Model Communities



Beth Gibbons, Executive Director at the American Society of Adaptation Professionals



Kalila Barnett, Senior Program Officer, Climate Resilience, at the Barr Foundation



lason Lee, Associate Director at **Ouantified Venture** 



Uiala Oadir, Head of Programme Design at the Climate Bonds Initiative



Fatima Luna, Environmental and Sustainability Advisor, City of Tucson

Donta Council, Research Adviser at the Federal Reserve Bank of Atlanta



Grace Earle, Senior Associate at the Global Impact Investing Network



Stewart Sarkozy-Bancozy, Senior Advisor North America / Global Strategic Partnerships and Development Director at the Resilient Cities Network (GRCN) and Founder & Chief Precoverist at Precovery Labs



Paula Pagniez, Americas Lead for the Climate and Resilience Hub at Willis Tower Watson



Brandy Espinola, Climate Resilience and Sustainability Program Manager at the Environmental Finance Center

Lisa





Facilitator: lovce Coffee, CEO. Climate Resilience Consulting





Stacy Swann, CEO and Founding Partner at Climate Finance Advisors

#### Federal Grants Program Staff Focus Group:

Jen Carpenter, Luann Dahlman, Bradley Dean, Steve Fries, Josh Human, Rachael Franks Taylor, Ned Gardiner, Frances Josephs, Bryce Knolhoff, and Craig Zamuda (NOAA, FEMA, DOE, EPA, HUD)



### **Ready-to-Fund Resilience Toolkit**

The Ready-to-Fund Resilience Toolkit was created through a partnership between the American Society of Adaptation Professionals (ASAP) and Climate Resilience Consulting (CRC). The work was supported by a grant from the Climate Resilience Fund's Coordination and Collaboration in the Resilience Ecosystem Program.

Learn more about the full Ready-to-Fund Resilience Project or the Funding and Finance Peer-Learning Group.

#### **News and Analysis**



ASAP and CRC Launch Readyto-Fund Resilience Toolkit March 16, 2022

Read Here

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A Look at the Infrastructure Investment Jobs Act and Climate Resilience Financing – March 2022

March 16, 2022

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#### **Table of Contents**

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Got Resources or Comments? Share them here!

#### Learn to:

- More effectively operate within the resilience funding and finance system.
- Better prepare to receive funding and finance for climate resilience-building.
- Create equity through resilience funding and finance.

## **10 Characteristics of Ready-to-Fund Resilience Projects**

#### **Collaborative Partnerships**

- Use cross-sector partnerships to increase project capacity.
- Get buy-in from community and government leaders in positions of power.

#### Intentional Processes

- Prioritize equity in all project decisions. 3.
- Co-develop climate resilience projects with community residents.
- Seek a variety of funding and finance types to cover all stages of project life. 5.
- Bundle projects by program to pursue joint funding and finance 6.

















## **10 Characteristics of Ready-to-Fund Resilience Projects**

#### **Innovative Accounting Practices**

- Use comprehensive accounting practices that make a strong business case for action.
- Project processes and outcomes grounded by resilience metrics.

### Enabling Regulatory Frameworks & Enabling Policy

- Clearly connect to existing local government plans.
- Benefit from policies that incentivize climate resilience action.



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## Climate Resilience Funding and Finance 101

Joyce Coffee Climate Resilience Consulting joyce@climateresilienceconsulting.com





## **RESILIENCE FINANCE**

- Money Flow In and Out of Local Government
- Municipal Finance Investment Types

## **Participants will Learn**

• How money flows into Local Government via public and private sources

• How different bond types work to fund resilience, including General Obligation bonds, green bonds, and insurance-linked securities.



## **MONEY IN/MONEY OUT**

## **Money Flow**

Where the Money Comes From

#### **PUBLIC FINANCE**

Taxes, fees & charges (Municipal, Agency, State, Federal)

#### PRIVATE FINANCE

Capital Markets, bonds, investments & communications, bank loans (Foundation funding and Innovative funding)

Where the Money Goes To

#### **GOVERNMENT, COMPANIES, AND RESIDENTS**

Subsidies, Grants, Guarantees, Loans, Project Finance, Public Private Partnerships



## **Money In: Public Revenue Sources**

#### **PUBLIC FINANCE**

#### Municipal Taxes, Fees & Charges Regional Taxes and Fees National Taxes and Fees



#### How Money Comes In:

- Utility Service Fees
- Impact Fees
- Taxes
  - General Property
  - General Sales
  - Personal Income
  - General Corp
  - Commercial Occupancy
  - Utility
  - Unincorporated Business
  - Real Property Transfer
  - Mortgage Recording
  - Tax Audit Revenues
  - Cigarette
  - Hotel

#### Example:

#### New York City's **Revenue** Budget

REVENUES (\$ in Millions)	2018	%
Taxes	\$56,800	67%
Federal Grants	\$7,811	9%
State Grants	\$14,419	17%
Miscellaneous Revenues	\$6,488	8%
Less: IntraCity Revenue	(\$1,815)	-2%
Disallowances	(\$15)	0%
Other Categorical Grants	\$880	1%
Inter-Fund Revenues	\$671	1%
Total Revenues	\$85,239	100%



## Money In: Private - Bond Types

#### **PRIVATE FINANCE**

Capital market bonds Investments & commercial bank loans Foundation funding Innovative funding



#### How Money Comes In (Private Examples):

- General Obligation
- Revenue
  - Green Bonds and Green Banks
- Impact
  - Environmental
  - $\circ$  Social
- Insurance Linked Security
  - Catastrophe



## Money In: Leveraging Public for More Private

#### **PRIVATE FINANCE**

Capital market bonds Investments & commercial bank loans Foundation funding Innovative funding



#### How Money Comes In

- Loan Loss Reserve
- Loan Guarantees
- On-Bill Financing
- Pooled Bond Financing
- Securitization/Warehousing
- Tax Increment Finance (TIF)
- Value Capture



## Money Out to Projects: Types of Public & Private Payment

**GOVERNMENT, COMPANIES, AND RESIDENTS** 

Subsidies, Grants, Guarantees, Loans, Project Finance, Public Private Partnerships

- Loans & Grants
- Decreased Costs
- Social Impacts e.g. Preserved Livelihoods
- Incentives
- Emerging:
  - Property Assessed Resilience (like PACE)
  - State Revolving Loan Funds



## **Money In: Requirements Depending on Source**

- Development impacts, local economic needs/goals
- Policy mandates implemented
- Sector investment increased
- No losses
- Returns, but not necessarily fully commercial
- Patient return expectations
- Returns commensurate with risk/market based





## Money In: Many Mixes to Make Projects Work



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## **Investor Stack for a Developer Project**







## **Money In/Money Out**

**Questions and Recap** 

## **INVESTMENT TYPES**

## **General Obligation Bonds - All Resilience**

- For the investor, returns investment plus funds collected from the investment of the bond money
- For the bond issuer (e.g. City,) used for projects that serve a public benefit but do not raise direct revenues
- Repay investor out of e.g. property taxes
- Considered debt, thus part of the borrower's credit rating calculation
- General vote



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## **Case: General Obligation and Revenue**

- Street elevations and stormwater pumps
- General Obligation (property tax)
- Established Sewer Fee
- Raised 3X
- TIF funds
- Leveraged Revenue for \$600M Revenue Bonds





#### **Stormwater Fee Structures**

Stormwater fees can take a range of forms, many of which encourage homeowners, businesses, and developers to implement on-site stormwater management and decrease impervious surfaces. This explanation of different types of fees has been sourced and subsequently modified from a report produced by the Bureau of Governmental Research in New Orleans. For more information, see the source notes.

Туре	Details	Formula
Development intensity	Charged by gross property area as compared to the percentage of impervious area, charging more for sprawling structures.	Fee: Gross area × Rate applicable to percentage of impervious area
Dual fee	Charged by classifying parcels into categories for residential or nonresidential and levying a flat fee.	Fee: Rate per type of parcel
Equivalient hydraulic area (EHA)	Based on the impervious area compared to total gross area, as a combined effect.	Fee: (Impervious area rate × Impervious area) + (Pervious area rate × Pervious area)
Equivalent residential unit (ERU)*	Based on the average impervious surface area of a local single- family residence. The ERU value is used for single residences, but fees for other types are calculated based on their individual surfaces.	Residential fee: 1 ERU (base rate); Nonresidential fee: Total impervious area/1 ERU × ERU base rate
Flat-parcel fee	A standard fee per parcel.	Fee: Rate per parcel
Gross area	Based on total gross area of a property multiplied by a base rate.	Fee: Gross area $\times$ Rate per square foot
Runoff	Fee based on the runoff of a property, including volume and rate, based on different environmental factors.	Calculations vary
Total impervious area	Charged by measuring the total impervious area and multiplying by a base rate.	Fee: Total impervious area $\times$ Rate per square foot

Sources: Bureau of Governmental Research, Beneath the Surface: A Primer on Stormwater Fees in New Orleans, (New Orleans, February 2017), www.bgr.org/files/reports/BGR\_StormwaterFees2017\_Report.pdf; Amanda M. Dritschel, "The Impact of Different Stormwater Fee Types: A Case Study of Two Municipalities in Virginia" (MS thesis, Virginia Polytechnic Institute and State University, 2016), https://vtechworks.lib.vt.edu/bitstream/handle/10919/71379/Dritschel\_AM\_T\_2016.pdf?sequence=1&isAllowed=y.

\*1 ERU is the average impervious area for single-family residences within the relevant jurisdiction.



## **Green Bond Climate Resilience Principles**



- Revenue Bond
- Mitigate Physical Risks hazard/vulnerability/exposure
- Bring Resilience Benefit including co-benefits
- Do No Significant Harm/Avoid Maladaptation & Tradeoff GHG



## **Environmental Impact Bond-Green Investors**

- Revenue & Impact Bond
- "Pay for success"
- Investors receive a higher return if meet a certain predetermined social objective
- E.g. Stormwater runoff reduced by determined amount, all investors receive a one time additional payout





## **Catastrophe Bond: Tied to Insurance**

- Insurance Linked Security
- Betting against disaster
- Insurers work with investment banks
- If catastrophe, insurance company take the bond funds to pay claims not covered by the insured premiums
- Investors could see a "100% loss"





## **Investment Type: Equity**

Vertical Investments	Sample Sub-Segments	Examples of Identified Companies	
Water	<ul> <li>Water efficiency products (low flow, loss reduction), desalination and re-use</li> </ul>	+ Company that treats and recycles water	
Agriculture	<ul> <li>+ Drought resistant seeds, drip irrigation, precision agriculture, resilient food storage &amp; logistics</li> </ul>	+ Company that examines weather data to provide insurance to farmers	
Healthcare	<ul> <li>+ Pharma, vaccines vs. new disease vectors (e.g., blue tongue, dengue), resilient facilities for extreme weather events</li> </ul>	+ Company that provides climate health analytics to hospitals	
Energy	<ul> <li>Resilient generation: CHP, distributed, backup; Resilient distribution: micro-grids, storage and disaster recovery</li> </ul>	+ Company that manufactures systems for wind and solar assessment	
Coastal Area	+ Early warning systems, advanced weather/ climate resilient materials, design tech	+ Company that provides flood maps for coastal regions	
Insurance / Financial	<ul> <li>Specific climate related risk insurance, risk assessment, micro-lending and micro- insurance related to adaptation efforts</li> </ul>	+ Company that provides parametric insurance services	



## **Risk Transfer: Indemnity / Parametric Insurance**

## Indemnity

#### Parametric

- · Payment based on loss adjustment
- Delayed payment due to claims process
- Pays on actual loss
- Cost of loss adjustment
- Payment based on triggering event
- Fast payments provides liquidity post event
- Pays on event trigger defined by independent agency data (USGS, NOAA)
- Basis risks (e.g. small event=large loss)
- No price volatility, simple, transparent
- Multi-year terms
- Flexible payback (e.g. revenue loss or expense increase)
- Access to different recovery dollars



## Infrastructure Public Private Partnership Continuum





## **Investment Mechanisms: Green Banks & CDFI**



- State and county green and infrastructure "banks"
- Financial tools like incentives, co-investment, credit support, warehousing
- Over **950** US Community
   Development Financial Institutions
   CDFIs



## Liability, Credit Rating, & Insurance



Credit

Rating

Climate Adaptation and Liability: A Legal Primer and Workshop Summary Report



- Investor climate change stress testing
- Municipal & utility policies that reduce exposure
- See: <u>http://columbiaclimatelaw.com/resources/adaptation-database/</u>



- Ratings agencies building and testing methodologies to fully incorporate climate risk for muni, utility and corporate ratings.
- S&P examining both climate risk and resilience benefit



- Record loss years demonstrating the financial materiality of physical climate risk
- Increase in registered weather-related loss events
- Widening gap between insured/uninsured losses



Source: Conservation Law Foundation; National Real Estate Advisors; Moodys

## **Investment Types** Questions and Recap

## **Key Stakeholders**

## Chief Financial Officers: Local Government Financial Planning





## **Characteristics of Potential Partnerships 1/3**

Institution	Funding/Financing Tool	When to Involve	Key Benefits	Key Drawbacks
Public Sector				
State	Bonds, grants, general & special taxes, fees	Can fund major infrastructure projects with long timeframes	Can levy taxes Oriented towards provision of public goods. Access to low-cost financing	Changing administrations can affect funding priorities
Publicly- Owned Utilities	User fees, bonds	Utility infrastructure. Vulnerable shoreline assets.	Access to tax-free bonds. Rates can be raised for water, sewer, and stormwater unless a majority protest. Gas and electric rates are set by district's elected governing board in a public forum.	High administrative capacity required to form a POU if not already established

Source: https://adaptationprofessionals.org/ready-to-fund-resilience-toolkit/ "Quick Reference"



## **Characteristics of Potential Partnerships 2/3**

Institution	Funding/Financing Tool	When to Involve	Key Benefits	Key Drawbacks
Private Involvement				
Public Private Partnerships	User fees, taxes, risk management	Involve as early as possible Risk can be effectively transferred Outcomes can be quantified	Can sometimes offer cheaper cost service delivery Access to private capital / avoidance of public debt	Complex to structure High transaction costs Equity concerns Cost savings to ratepayers not guaranteed
Institutional Investors	Grants, loans, bonds	Involve as early as possible to ensure alignment with eligibility criteria.	Enhanced market efficiency. Additional capital source	Most evaluate potential investments on market return, not social or environmental good. Even social impact investors require returns on investment that may be beyond the capacity of a public service.

Source: https://adaptationprofessionals.org/ready-to-fund-resilience-toolkit/ "Quick Reference"



## **Characteristics of Potential Partnerships 3/3**

Institution	Funding/Financing Tool	When to Involve	Key Benefits	Key Drawbacks		
Non-profit/ Educationa	Non-profit/ Educational					
Community Development Financial Institutions	Grants, donations, loans	Predevelopment Bridge financing Workforce development	Can offer smaller and less burdensome loans to communities that cannot access larger funding opportunities	Limited in funding capacity		
Community Land Trusts	Grants, Donations	Community-oriented developments including affordable housing and recreational space	Continual involvement in community and long-term affordability mission	Limited in involvement May be limited in funding capacity Resource-intensive to establish		

Source: https://adaptationprofessionals.org/ready-to-fund-resilience-toolkit/ "Quick Reference"



## **Key Stakeholders** Questions and Recap

## Knowledge Check





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## **Break**



## **Small Group Activity**



Generate ideas for how to identify and communicate with stakeholders who have influence over a project's funding and finance prospects.

- 1. Group Introductions
- 2. Identify a Case Study
- 3. Identify Stakeholders and Their Motivations
- 4. Develop Talking Points





## Debrief and Look Ahead



## **Training Schedule**

**Live Session 1: Introduction to Climate Resilience Funding and Finance** *TODAY!* 

**Self-Guided Session: Prioritizing Equity in Climate Resilience Investments** *Week of August 1* 

**Live Session 2: Introduction to Blended Finance and Project Bundling** *Wednesday, August 10, 12-1:30 PM ET* 





## Self-Guided Session Week of Aug 1

Activities (Total of ~90 Minutes)

- Read sections of the Ready-to-Fund Resilience Toolkit
- Think/reflect on the content individually
- Engage with colleagues or fellow training participants to extend your learning.

#### Learning Objectives

- Explain how traditional cost-benefit analyses (CBA) hurt Black people, Indigenous peoples, people of color, and people with low/moderate incomes and alternatives to address this problem.
- Identify strategies to undertake project co-development with community members.
- Assess community engagement mechanisms based on a spectrum of community ownership.

Finish the self-guided activities before our next live session on August 10











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