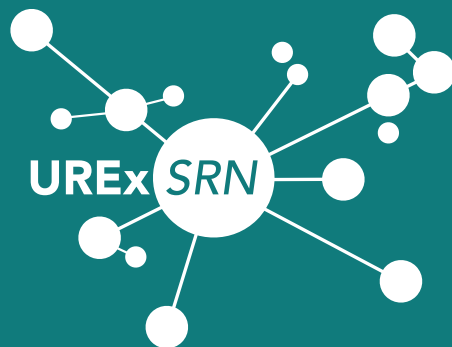




Envisioning Governance for Urban Resilience in Portland, Oregon

WORKSHOP REPORT | September 26, 2019



Urban Resilience to
Extremes Sustainability
Research Network

www.URExSRN.net

Workshop Context and Partnership

In the face of global climate change, city governments need to anticipate and guide infrastructure decisions to respond to a variety of extreme events, including flooding, heat waves, and hurricanes. The City of Portland began to explore this challenge through the Resilient Infrastructure Planning Exercise (RIPE) in 2017 as an effort to better understand the risks posed by major natural disasters to the City of Portland's infrastructure, and to identify near- and long-term steps to build the resilience of those systems. One of the main insights of the exercise was that Portland's current governance structures and arrangements pose a key barrier to infrastructure resilience. This led to the creation of the multi-bureau Disaster Resilience and Recovery Action Group (DRRAG) in 2018, a group tasked with developing governance frameworks for resilience and recovery in Portland.

In 2019, DRRAG partnered with the Urban Resilience to Extremes Sustainability Research Network (UREx SRN), an NSF-sponsored initiative, to support urban planning and development by generating future scenarios through participatory and anticipatory process. The partnership aims to:

1. Identify options for governance structures for resilience
2. Support the development of a resilient infrastructure investment plan
3. Support the development of a resilience and recovery plan

Key Outcomes

The outcomes of this workshop will form the basis of the second workshop, where detailed governance frameworks will be created, informed by transformative resilience futures and pathways developed in this workshop.

A shift in mindset from "resilience-as-harm-reduction" to "resilience-as-thriving", before and after a disaster. Portland practitioners imagined radical futures where disaster events such as major floods, heat events, or earthquakes had minimal impact or were even leveraged for benefit

Common themes across goals and strategies. Portland bureaus' common values, philosophies, and areas of strategic overlap shone through in the goals and strategies. Equity was a ubiquitous focus; other themes such as self-sufficiency, green infrastructure, and resilience hubs were also popular.

Emergence of governance structures and principles for resilience. Practitioners' transformative goals were supported by governance structures exhibiting common themes and principles, such as multi-bureau collaborative structures; decentralization; innovative funding structures; building neighborhood culture; and participation of the most impacted in planning and investments

Next Steps

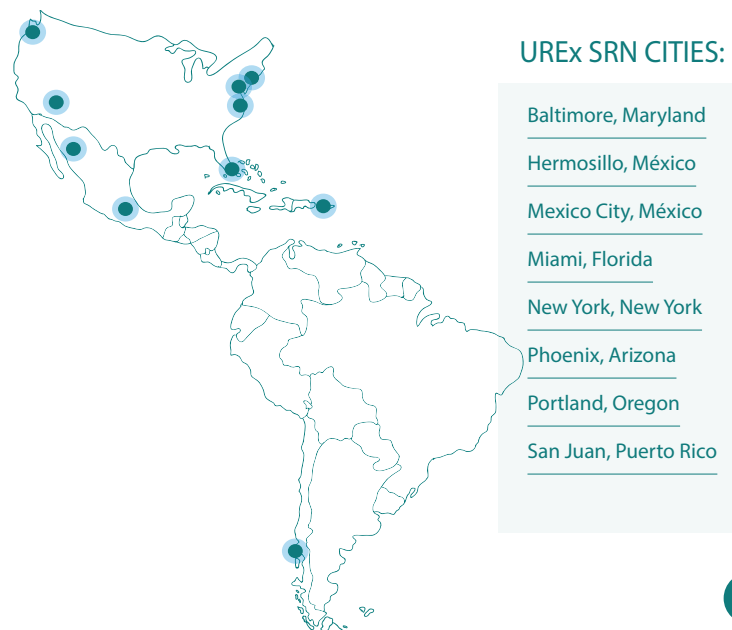
The UREx SRN team will use the visions defined in the workshop to inform the goals and design of the second workshop, where governance structures will be developed in even greater detail, stress-tested, and iterated upon.

About the Urban Resilience to Extremes Sustainability Research Network (UREx SRN)

The goal of the UREx SRN project is to improve the resilience of urban social, ecological and technological systems in the face of the growing challenges that climate change poses to cities. The UREx SRN network includes ten cities affected by floods, heat waves and/or droughts. The network has a wide range of researchers from universities in the North and South, as well as municipal practitioners, members of the civil society, and residents.

Through the co-development of scenarios in participatory workshops - such as those described in this document - we research possible transition paths to help transform cities for a more sustainable future.

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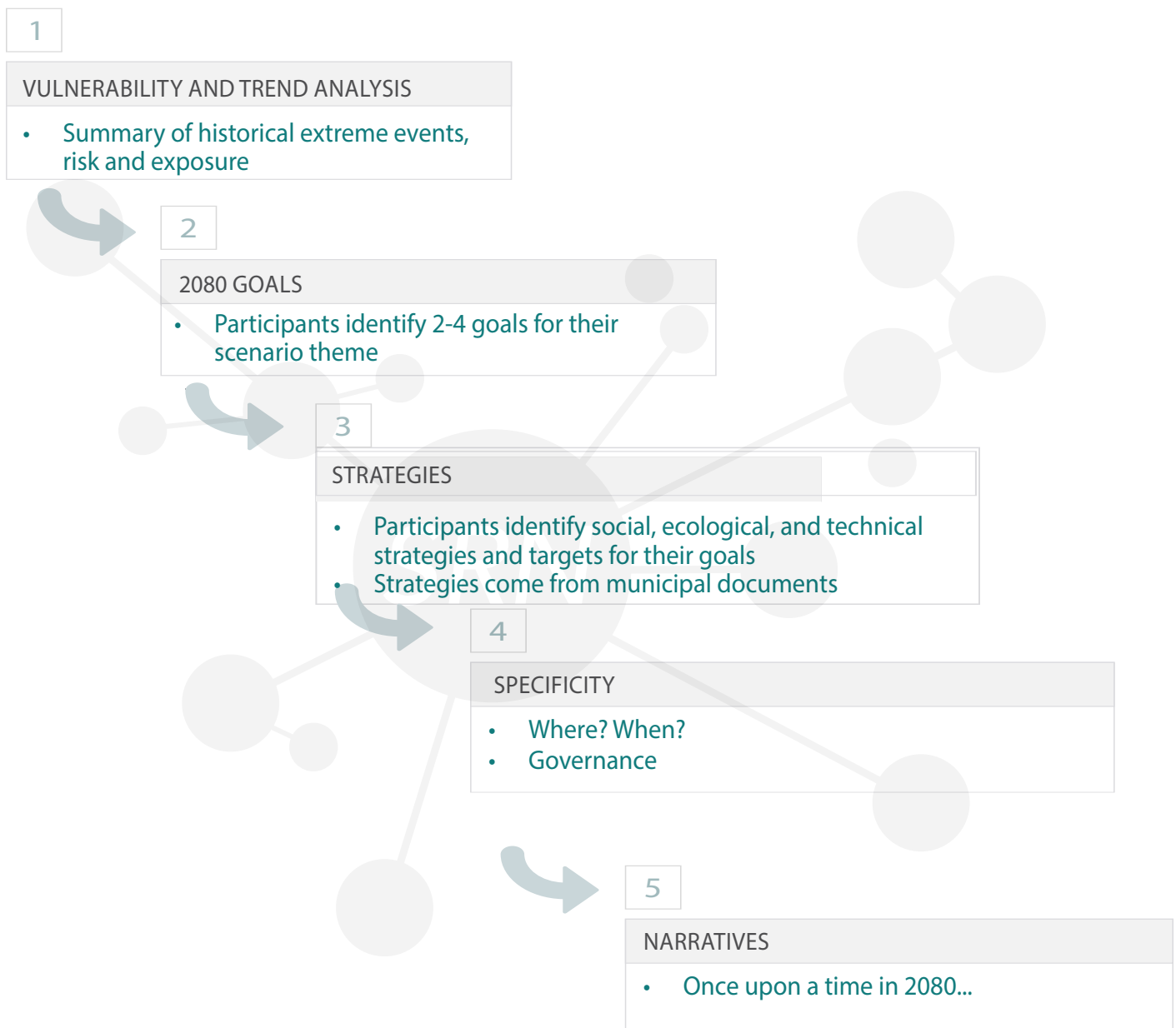
Scenario Development Process

The workshop described here was the first in a two-part series designed to achieve the goals of the partnership between DRRAG and the UREx SRN. The objectives of this workshop were to:

- Co-create transformative visions for urban resilience to extreme events that aspire to radically change the region's infrastructure, governance, and ability to respond to extreme events.
- Plan transition pathways to realize those futures by creating detailed maps of targets and actions
- Begin ideation on governance structures needed to support these goals, strategies, and transition pathways

During the workshop, approximately 40 Portland

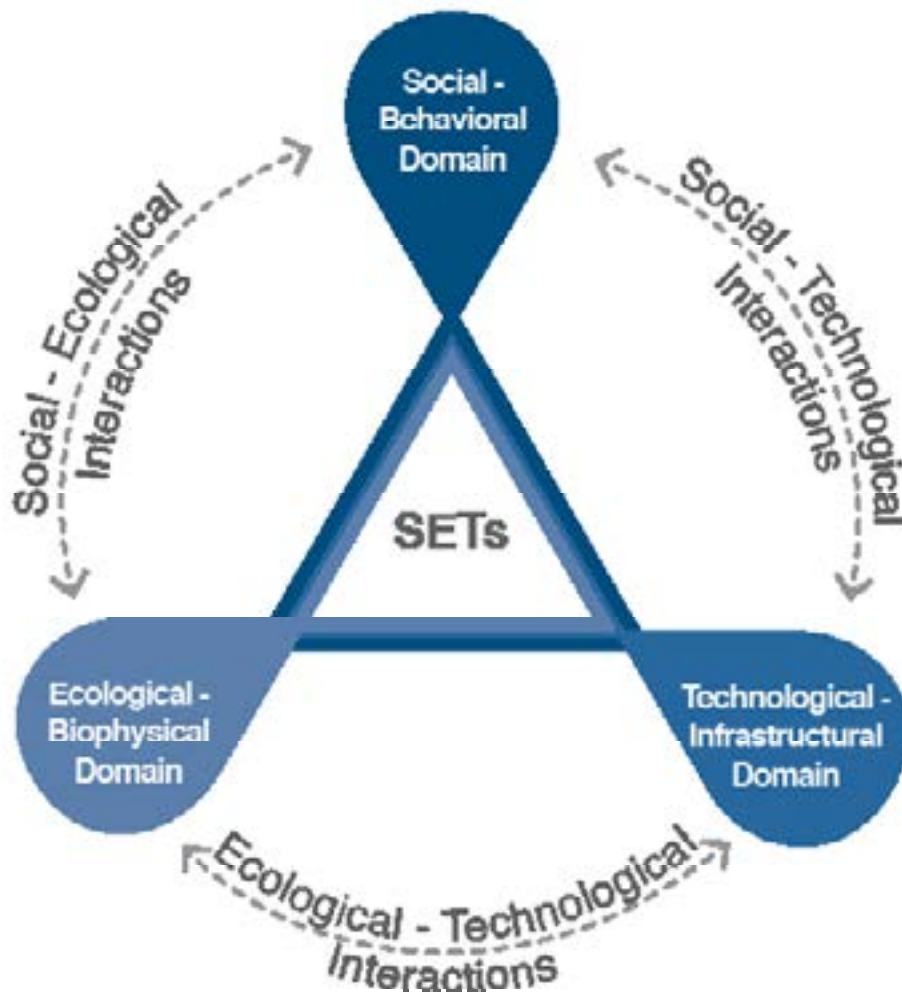
practitioners from multiple bureaus, professors, and students gathered at Portland State University. Workshop participants began by learning about trends in extreme weather events, Portland's vulnerabilities to extreme weather in the future, and the differential impacts of extreme weather on vulnerable populations. Participants then worked in small groups deliberating the main goals for a future of Portland that is more just, equitable, and resilient in the face of different environmental conditions in 2080. The participants then discussed strategies (especially infrastructure and governance) that could be implemented to achieve their goals, and specified those when, where, and how those strategies would be executed. Finally, practitioners made the visions tangible through narratives.



Social-Ecological-Technological Systems (SETS)

Many of the problems we face today, such as climate change, social inequality, or environmental health, cannot be solved by traditional planning approaches. These are complex problems and with high levels of uncertainty that require the integration of different perspectives, experiences, and knowledge. One of the problems that challenges the planning and governance of cities like Valdivia is how to create resilience to extreme external forces such as those posed by climate change that endangers lives, communities, and infrastructure in the urban system. When they are resilient, cities can persist, grow, and even transform, maintaining their functions and identity. The thinking of social-ecological-technological systems (SETS) integrates these three dimensions from a perspective of complex systems and is essential to promote resilience in cities and facilitate their transformation towards more sustainable futures.

Cities are complex SETS, and so too are parts of cities such as neighborhoods, parks, and infrastructure. The social dimension includes both decision makers and the people affected by them. The ecological dimension includes elements of a non-human nature that are part of the fabric of cities, for example, trees, soils, and water. The technological dimension includes the built components of cities, for example, the road system, buildings, or public transport networks. But perhaps the most important feature of the SETS approach is that it is a systems approach. This means that the social, ecological and technological elements are not considered separately, but rather as a whole and paying special attention to the relationships and interactions between the three dimensions.



Portland 2080 Future Visions

The co-developed future scenarios addressed environmental hazards including extreme heat, urban flooding, earthquake, and multiple hazards occurring at the same time. Practitioners significantly shifted their thinking about resilience and recovery, moving from a status quo mindset of “making things less bad” to one of mindset transformation and thriving. Several other key governance themes emerged across tables, including multi-bureau collaboration structures, full participation of impacted communities, innovative funding structures, and decentralized governance.

Some examples of transformative governance strategies include: creating issue- and location-specific governance as a way to break down silos; establishing an integration authority that brings all bureaus together, and making a resilience fund including representation from all bureaus along with community members to coordinate risk assessment and govern the distribution of funds.



Just Cool Enough (Urban Heat)

Objectives and Goals

- “The Sun Cools Us”: transportation infrastructure cools the city, buildings passively cool themselves; “Vision 100” - solar on everything, trees everywhere;
- Equitable, adaptable, risk-based decisions and investments focused and full participation of those most impacted;
- Everyone thrives/is healthy in a heat event, everyone has access to information, resources and spaces;

Strategies

- 1) Solar on everything
- 2) 100% of public and private buildings meet cooling and energy standards
- New MAX line gets ‘hot’ cars off the road
- 3) “Vision 100”: trees everywhere!
- 4) Holistic neighborhood infrastructure planning
- 5) Issue-based projects that bring all bureaus together in a specific location to achieve a shared outcome
- 6) Collaborative governance and decision-making structure that includes community members as paid full participants
- 7) Relax budget rules to facilitate collaboration
- 8) All bureaus have resilience plans



2080 Future Visions

Flood Ready

Objectives and Goals

- Portland expects, lives, thrives, and benefits from flooding
- Everyone in Portland has access to life essentials in event of an emergency and flooding
- All people have access to and voice in planning, knowledge, and data on extreme flooding

Strategies

- 1) Infrastructure to collect, store, and reuse stormwater which can deliver water to other places or during other seasons when needed
- 2) Parks and green space used for stormwater capture and storage, and stormwater storage features are beautiful places in park
- 3) Natural areas are connected within watershed and can store excess rain & stormwater
- 4) All river floodplains are free of vulnerable housing, buildings, critical infrastructure

- 5) Portland Resilience Organization and Oversight Fund (PROOF) - Reps of all bureaus, community members, and staff coordinate risk assessment, make decisions about project priorities, and govern distribution of resilience funds.
- 6) Integration authority coordinates cross-bureau collaboration
- 7) Resilience Emergency Action Dialogue and Integration (READI) - emergency notification system implemented on multiple platforms and in community hubs



Recovered Portland (Earthquake)

Objectives and Goals

- Thrive - We're Ready • Resilient City • Equitable City

Strategies

- 1) Decommission critical energy infrastructure liquid fuel hub and replace with solar backup
- 2) Autonomous, electric, and active mobility for all. Sustainable charging from micro-grid to reduce reliance on major power sources
- 3) Resilience hubs co-located with parks, especially with community centers. Everyone in Portland is within 1/2 mile of a park.
- 4) Increase urban tree canopy to 60%
- 5) Local economic recovery plan where equity is explicit and prioritized
- 6) Post-disaster economic

- stimulus plan;
- 7) Coordinating group that can help build a resilient Portland through collaborative leaders, policy and community involvement;
- 8) Recovery activities that help maintain Portland's unique identity after a quake
- 9) Build a mutual-aid network with Boise, Idaho where the cities would help each other in disasters
- 10) Resilient oases built around neighborhoods, starting in East Portland



2080 Future Visions

Resilience Hubs / Oases (Multi-hazard 1)

Objectives and Goals

- Self-Sufficiency: local food production - clean water - economics - housing - medical
- Big earthquake, no impact
- A leader in resilient cities

Strategies

- 1) Decentralized energy production, off the regional grid
- 2) Self-sufficient, locally-produced renewable energy with redundancy built in
- 3) Each hub or "resilience area/neighborhood" is multi-functional and can produce, store, and distribute energy
- 4) Hubs store water pre-disaster and purify water post-disaster and distribute data during and immediately after disasters
- 5) Hubs serve as pre- and post-disaster facilities for local food production with urban gardens, accessible to all
- 6) Necessary infrastructure provided to convert regular community facilities into emergency shelters during extreme events
- 7) Overlapping resilience zones by 2080 so that wherever you live to have access to the resilience and recovery resources



Prepared Portland (Multi-hazard 2)

Objectives and Goals

- Reorganize city government to improve value delivery to our communities
- Increase city self-sufficiency to absorb shocks and support recovery

Strategies

- 1) 100% green fleet
- 2) 100% net-zero facilities
- 3) Efficiency savings reinvested in community
- 4) 42% of building stock accessible in 2 weeks
- 5) Public-private equity partnerships
- 6) Use public land (city-owned) for urban agriculture (e.g., food forests and bee habitat)
- 7) Performance Framework/Glide Path: All long-range planning is organized by neighborhood/region - maybe 3-5-7 major city sections in which all bureaus plan together along with other partners (schools, banks, etc.)
- 8) All underserved communities have local park resilience hubs w/ supplies, refuge, and services
- 9) The I-CAM (Integrated City-wide Asset Management) is comprised of bureau asset managers. It coordinates city-wide asset management to integrate investments across infrastructure systems to achieve shared and codified

performance measures. It coordinates community engagement to address neighborhood investments to ensure accountability and transparency.

- 10) Recovery activities that help maintain Portland's unique identity after a quake
- 11) Build a mutual-aid network with Boise, Idaho where the cities would help each other in disasters
- 12) Resilient oases built around neighborhoods, starting in East Portland



Next Steps

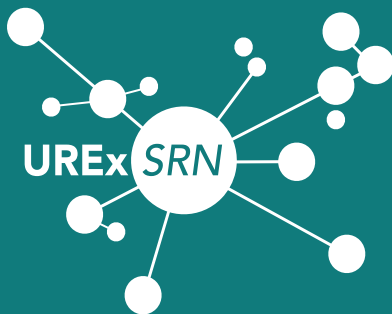
The UREx SRN team is reviewing the scenarios co-created in the workshop and producing a follow-up workshop! We will explore and apply resilience governance principles and structures to co-create new governance frameworks for Portland.



Participating Institutions & Organizations

Thank you to all of the workshop participants!

- Portland Bureau of Emergency Management
- Portland Bureau of Environmental Services
- Bureau of Planning and Sustainability
- Portland Bureau of Transportation
- Portland Water Bureau
- Portland Parks and Recreation
- Greater Portland Metro
- Oregon Medical Board
- Portland Fire and Rescue
- Portland Housing Bureau
- Office of Management and Finance
- Bureau of Development Services
- Portland State University Institute for Sustainable Solutions
- Arizona State University



About UREx SRN

Our mission is to connect scientists and practitioners to create resilient infrastructure with information, models, images, maps, histories, and projects from 10 cities, accelerating the production of knowledge and the implementation of innovative and sustainable solutions in urban ecosystems.

CONTACT:

Thad Miller
thad.miller@asu.edu

Vivek Shandas
vshandas@pdx.edu

www.URExSRN.net

[@uresrn](https://twitter.com/uresrn)

uresrn@asu.edu