



Executive Summary For NextCycle Washington

Circular Resilience

Systemic Risk, Resilience, and Circular Economy Networks - Mapping Series 1.0

Prepared for: Washington Department of Ecology, King County Solid Waste

Presented by: [NextCycle Washington](#) (NCWA), [Start Consulting](#), [Equity Analytics Group](#), and [kamal designs](#). Special thanks to [RRS](#), and [Cascadia Consulting](#) for support on this project.

Date: June 30, 2023

Circular Resilience

Systemic Risk, Resilience, and Circular Economy Networks - Mapping Series 1.0

NextCycle Washington is a circular economy (e.g. repair, reuse, compost) project accelerator for businesses and communities. It helps provide grant funding and a technical support network for Washington State. [Learn more here.](#)

ABOUT

The intent of this research and resulting [map series](#) is to illuminate the relationships between community-focused circular economies (e.g., community reuse, repair, share, compost) and the compounding and systemic (e.g., social, environmental, economic) threats and risks to community resilience facing Washington State. Building on the previously published Washington Department of Health, Environmental Health Disparities Map we show where funding, investment, and technical assistance are being directed and where it is needed.

WHY did we do this research and resulting maps?

This research overlays circular economy activities (like share, reuse, compost, repair) with community economic, social, and environmental risks.

- Connect NextCycle funding and technical support with resilience strategies and publicly available data.
- Highlight where funding and technical support through NextCycle Washington was directed into community-focused projects, and the project's risk/resilience context.

- Elevate opportunities for:
 - Additional community-focused investment and technical support opportunities for connections (e.g. Tribal, networking) through NextCycle
 - Opportunities for resilience hub and node development connected to the circular economy and NextCycle
- Showcase alternative material-management economies to existing public/private infrastructure and services
- Assist community-focused orgs in their efforts to communicate the need for support (e.g. funding and technical support) for their efforts

WHAT are the resulting maps saying?

- Build on existing publicly available data (e.g. Census data, Health Disparities Map, FEMA) to understand systemic risk and threats to resilience.
- Understand the compounding threats to resilience by multiplying risk and resilience factors.
- Mapping community-focused circular initiatives to highlight its role in community resilience.
- Elevate connections between community-focused circular economies and resilience
- Engage rural and urban communities (King County, Okanogan) for input in the research development

WHO are the intended audiences?

The intended audiences for this research include:

- Funders looking to support community-focused circular economy initiative growth and networking
- NextCycle Funding Partners
- Washington State communities looking to understand resilience and circularity in their region
- Governments and nonprofits working to understand circularity

In order to be shown on the maps below, an organization or project must be:

- Aiding community-focused circular materials, who are building resilience with circular economies in their own community
- Focused on essential items and services
- Doing this work NOW, not just demonstrating potential to do so in the future

LIMITATIONS of the research and maps

Environmental Risk and Threats to Community Resilience Data

Risk and threat scores were only calculable for census tracts that were consistent among source datasets. This may result in data from nearby areas influencing the scores assigned to those tracts.

Census tract data are more accurate and granular than other geographic units, like counties. However, census tract data still poses challenges of over-aggregation. This occurs when the risks and threats to the communities within a tract vary significantly.

The source data from the Health Disparities and FEMA maps were developed with other uses in mind. The combination of these data sets are relevant to community resilience. However, there may be unintended consequences in the use of the underlying data.

Community-Focused Circular Economy Initiative Data

Data for the location, type, and nature of each Initiative (yellow and green dots on the maps) were collected from a variety of sources, including [Repair Economy Washington](#), [NextCycle Washington](#), and desktop research conducted by our team, and as such will require verification and updates with each iteration.

We acknowledge that this is not a complete representation of community-focused circular economy initiatives, projects, and organizations. This data set and maps are an initial attempt to visually show circular economy. The long term goal is to refine and expand on this initial data.

We note particular gaps in the representation of initiatives located within lands of Indigenous communities. Future iterations of this map would be greatly improved by indigenous community participation.

HOW did we build these maps?

The Environmental Risk and Threats to Resilience (ERTR) Map shows a compounding relationship between the risk a community is exposed to and their ability to be resilient in response to those stressors. The ERTR Map used two publicly available maps to create a new map. The two map indexes used were the FEMA Community Resilience Challenge Index and the Washington Department of Health Environmental Health Disparities Map score.

This new map relies on the following calculation for each census tract as:

(FEMA Community Resilience Challenge Index) * (Washington Environmental Health Disparities Risk Score) / 10
(Figure 1)

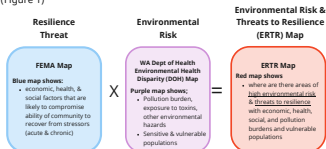


Figure 1 - The red map helps build on the Health Disparities Map which helps add more economic data as well as health and social threats to resilience to change.

See live map: [Environmental Risk & Threats to Resilience](#)

This new index is presented as a [choropleth](#) map with census tracts shaded to indicate their percentile rank (Figure 2). The result compares each census tract to all other tracts in Washington State. For example, if a census tract has a percentile rank of 70, this indicates that 70% of all census tracts in Washington State have a lower Risk & Resilience Factor.



Figure 2 - Darker percentile rank show greater risk & threats to resilience factors.

Community-focused circular economy initiatives were identified from publicly-available data (Figure 3). Those efforts were then plotted on the ERTR Map. The result identifies efforts were located in areas that had a confluence of both high risk of environmental impacts (DOH Map) [and](#) significant threats to resilience in response to stressors (FEMA Map).

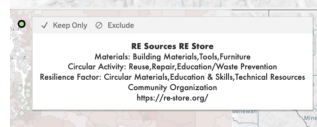


Figure 3 - We showcase NextCycle Washington funded projects as green dots

FINDINGS

The primary outcome of this research was the development of an easily understandable and useful tool (The ERTR map). This allows direct access to relevant information about the relationship between current strengths and gaps in the community-focused circular economy initiatives. The ERTR map provides the added context of environmental risks and threats to resilience.

Theme 1: this is new

Existing resources separately identify areas of risk, areas of resilience, and components of community-based circular initiatives. The results of our research have allowed us to present this information in a new way, the ERTR Map. We highlighted the connection between the circular economy and resilience. We received feedback from community members that this provided a relevant and needed tool to promote community resilience.

Theme 2: this is useful

The Environmental Risk and Threats to Resilience map can be used to focus the impact of investment in the circular economy. The map can help focus other resilience strengthening efforts in areas with high percentile scores compared to those with low scores. In this way, the percentile scores can be considered a multiplier for investment and effort.

The NextCycle Washington community focused circular economy initiatives were added to the ERTR Map. This showed that NextCycle Washington projects are happening in areas with high levels of risk to environmental impact and threats to resilience. It also identifies areas without identified community-focused circular resilience initiatives.

Community feedback demonstrated that this research can be used to targeted support for existing and burgeoning initiatives. This could strengthen these communities as they navigate stressors. The ERTR map provides connections and networking opportunities with other granting and support systems for community-focused circular resilience initiatives

Theme 3: this is relevant

Community feedback indicated that the structure of this research affirmed an understanding that practitioners of both resilience efforts and circular economy initiatives had experienced: that the connection between [preparing](#) and [repairing](#) were deeply connected. The work to build communities' resilience was intertwined with the circular economy. For example, community members shared that:

- Shared space around circular activities creates safe gathering spaces that will be critical for resilience
- Through circular economy practices and emergency preparation, seemingly disparate community members find they have common interests and common ground, especially when language for circular economy and resilience needs are localized to each community (one community may call it taking care of myself, resilience, DIY mindset, etc.)
- The development of relationships of respect and cross-generational skill sharing that occurs in circular economy efforts is critical (elders often have more facility with repair/share and youth are able to leverage facility with technology)

INITIAL RESPONSE FROM FOCUS GROUP

Focus group conversation of these maps were held in May 2023

The focus group was held with two groups, one group from the King County region, and one group from the Okanogan area.

Below are findings from that group conversation relating responses to the maps ability to affirm or challenges being stuck at connecting community-focused circularity with resilience efforts:

This is really useful for state, county and city policy and program development!

This is validating, "Look we need this". It validates funding principles.

The ability to zoom in [to individual census tracts] is great!

It's useful to see where [circular initiatives] are not present.

I appreciate the ability to toggle on/off the categories. Great work!

Foundations and agencies are trying to fund in underserved projects, now you can see initiatives being rolled out.

RECOMMENDATIONS FOR NEXTCYCLE WASHINGTON

- Partner with Department of Ecology's Public Participation Grants, PreCycle, King County Solid Waste Re+ Program, Seattle Public Utilities, and other grant support systems to understand full scope of projects being and not being funded / supported in Washington
- Explore resilience hub overlaps -<https://www.usdn.org/resilience-hubs.html>
- Use this map to recruit other county and non-profit partners
- Use this map to identify funding need and opportunities
- Understand representation of communities in decision making and policy efforts
- Understand the role of community-focused circular economy and how they may connect to global supply chains
- Expand research to include data on:
 - current funding (amounts, sources, timeframes)
 - demographics of populations served
- Allow desegregation in map interaction
- Understand how to integrate private companies as part of community-focused initiatives, perhaps global supply chains.
- Add EPA Environmental Justice map data to this map (working with corporations like Microsoft to build on this effort)
- Additional research on community-led and driven initiatives that are not included or identified by community.
- Needs assessment to strengthen or fill gaps for communities that need additional circular economy and resilience support. (part of 2nd to last bullet point)
- Continue to verify and update initiatives with each iteration.
- Continue to dig into the source data to ensure the resulting ERTR map is accurately representing the data.
- Invite community to add additional initiatives and co-create next steps.

ACKNOWLEDGEMENTS

The research presented here is building on [NCWA co-design priorities and tactics](#), and the [People's Economy Lab's just transition mapping sessions](#).

Thank you to the participants of our research phase, as well as members of our group discussion helping us test this map, and better understand the effectiveness of the map. See the [map website](#) for more details.