

Connecticut Environmental Justice Screening Tool

Connecticut Institute for Resilience & Climate Adaptation

7/17/23



CIRCA Project Team



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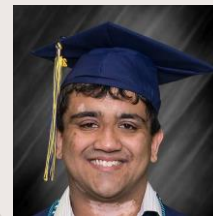
Interns



Defne Alpdogan



Alexis Torres



Michael Pimenta

Outline

01

About

The mapping tool aim and goals of the project

02

Capacity

Limitations and capacity of the tool

03

The Use

How can the mapping tool be used?

04

Development

The development process and feedback system

05

Data & Methods

Data categorization and indicators

06

Demo

Demo of version 1.5 and Project Timeline

Environmental Justice Screening Tool

Combines environmental and demographic data to highlight areas where **vulnerable populations** may be **disproportionately impacted** by pollution.



The mapping tool aims to



Data Integration

Supplemented with local information and experience



Easy Access

Web-based GIS tool for statewide



Policy making

The first screening for State, County, and Municipal decision making

The mapping tool's capacity

This Mapping Tool DOES:

- Identify potential sources of pollution.
- Identify areas that present potential hazards in the event of an accident or emergency.
- Identify census tracts near potential pollution sources.
- Identify the degree to which a community, by census tract, is vulnerable due to socioeconomic and health disparities.

This Mapping Tool DOES NOT:

- Does not reflect actual exposures to pollution
- Does not model the overall pollution burden nor reflect the number of individuals that may be affected by pollution.
- Does not model the positive or negative likelihood of an individual's risks for poor health outcomes.
- Does not release private addresses, information, or names.



Limitations of the mapping



Various Dataset

Nothing is really “equal weight”



Resolution

Inconsistent data representation



Realistic

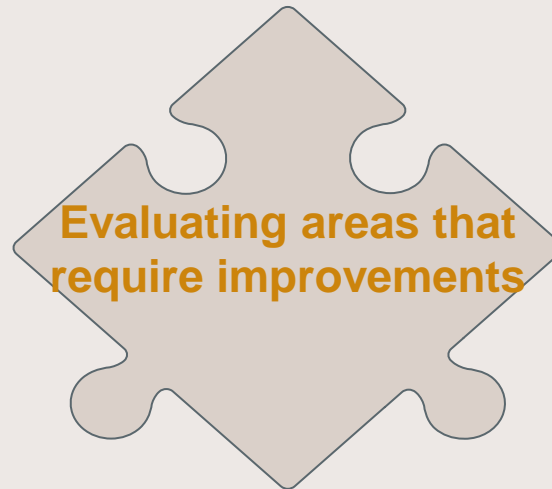
The impact of the pollution may be inadequate



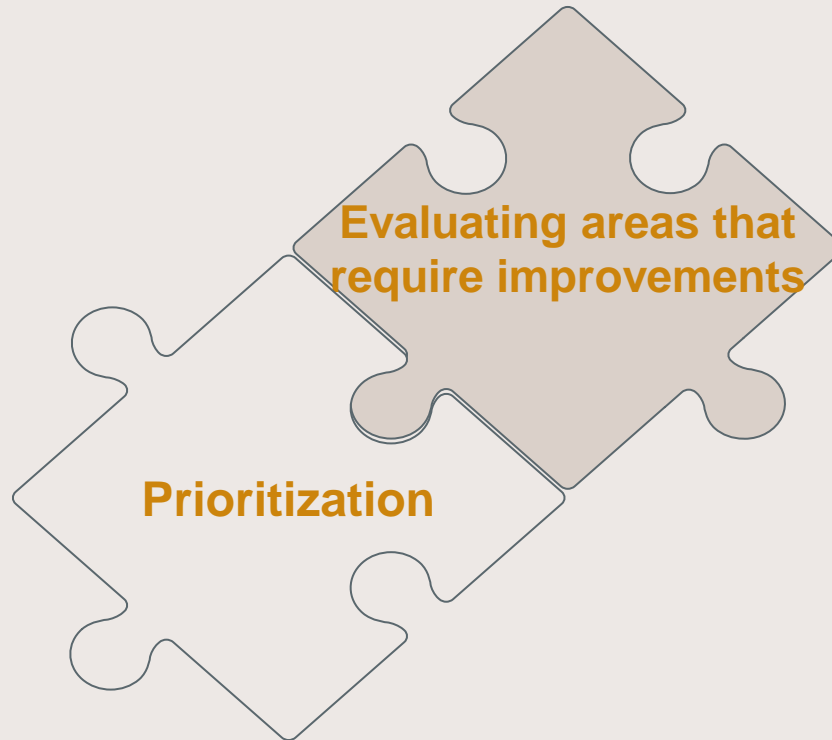
Expert need

Evaluation of need multidisciplinary expert collaboration

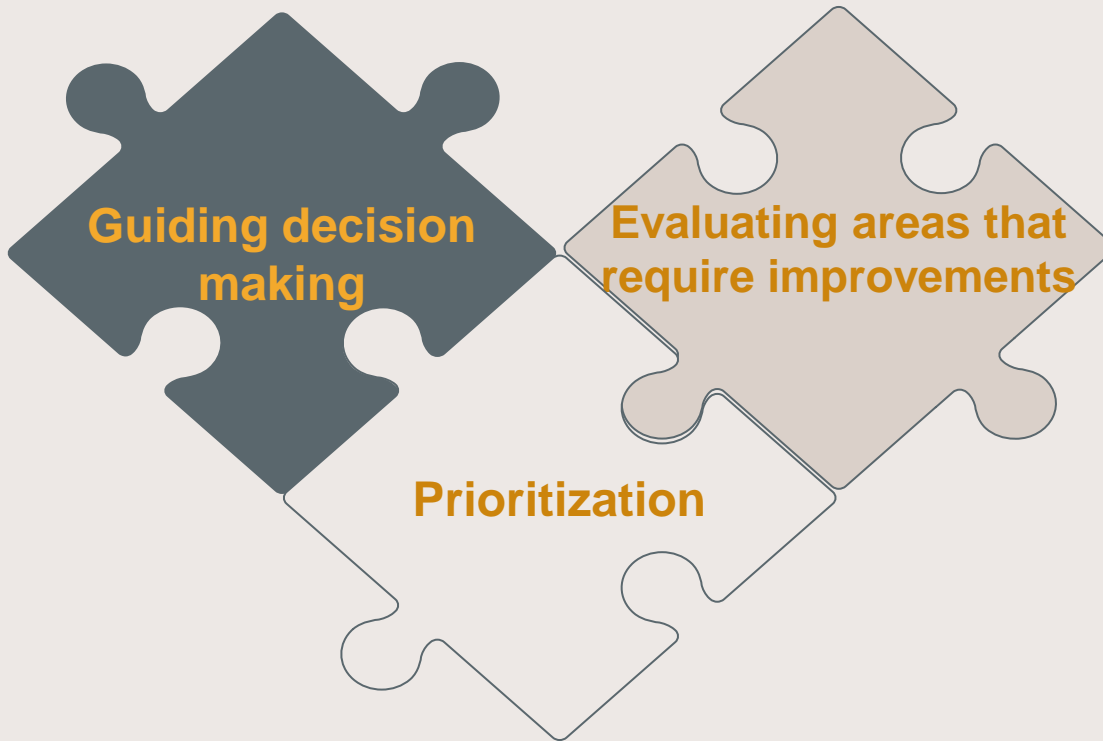
How can you use the tool?



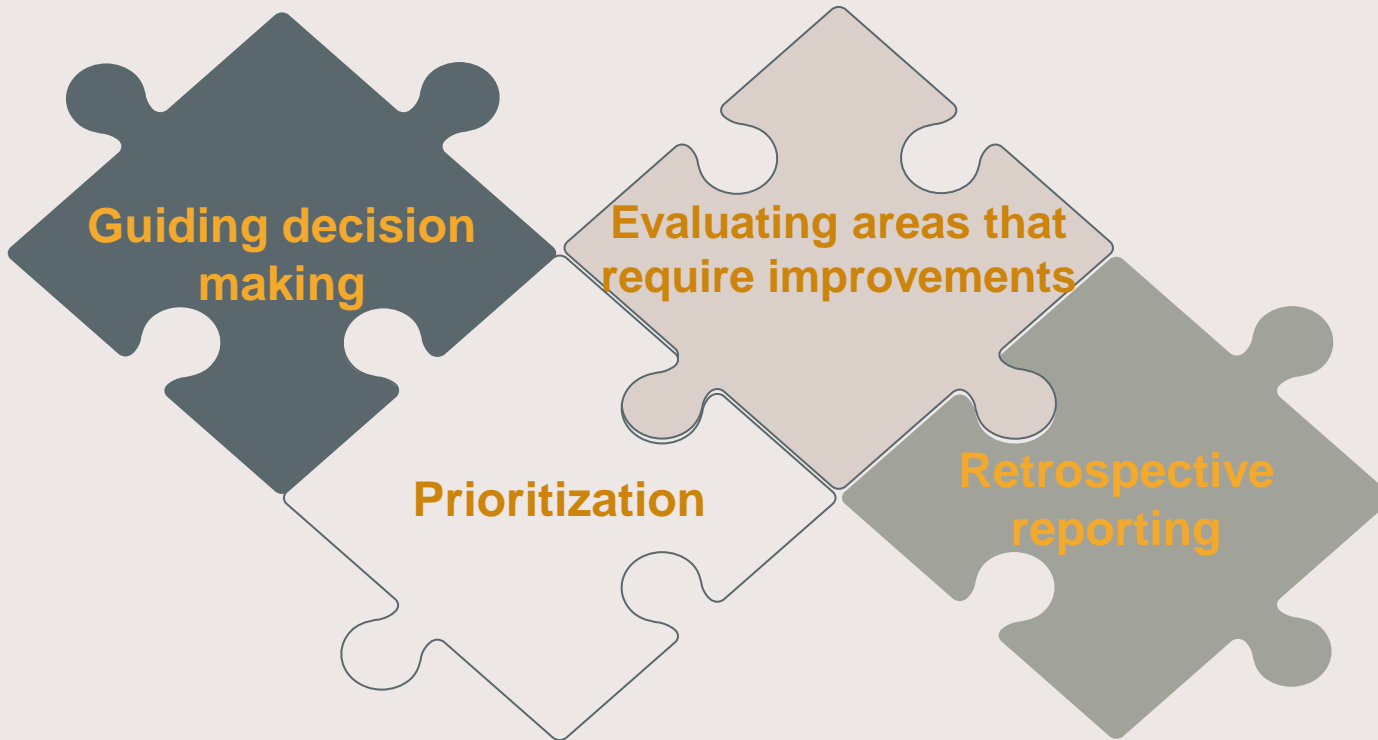
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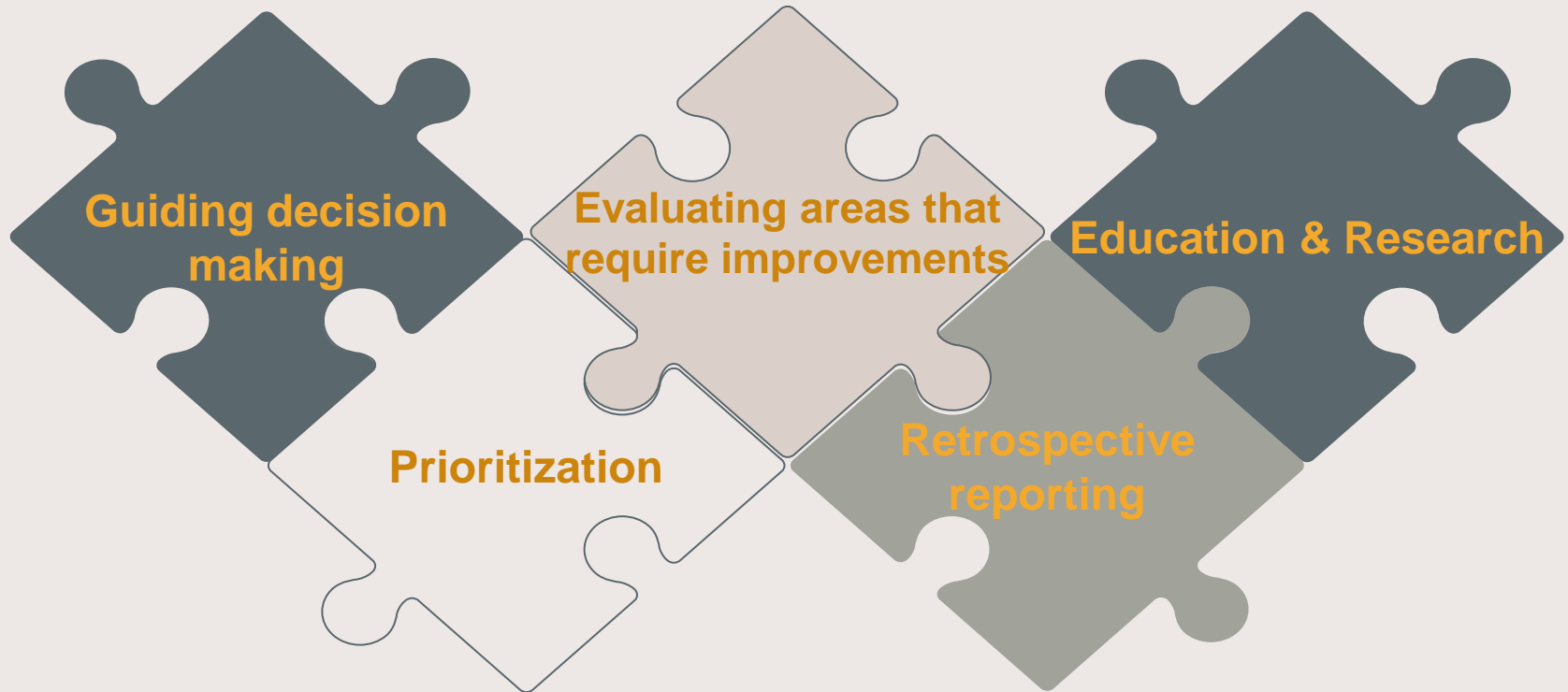
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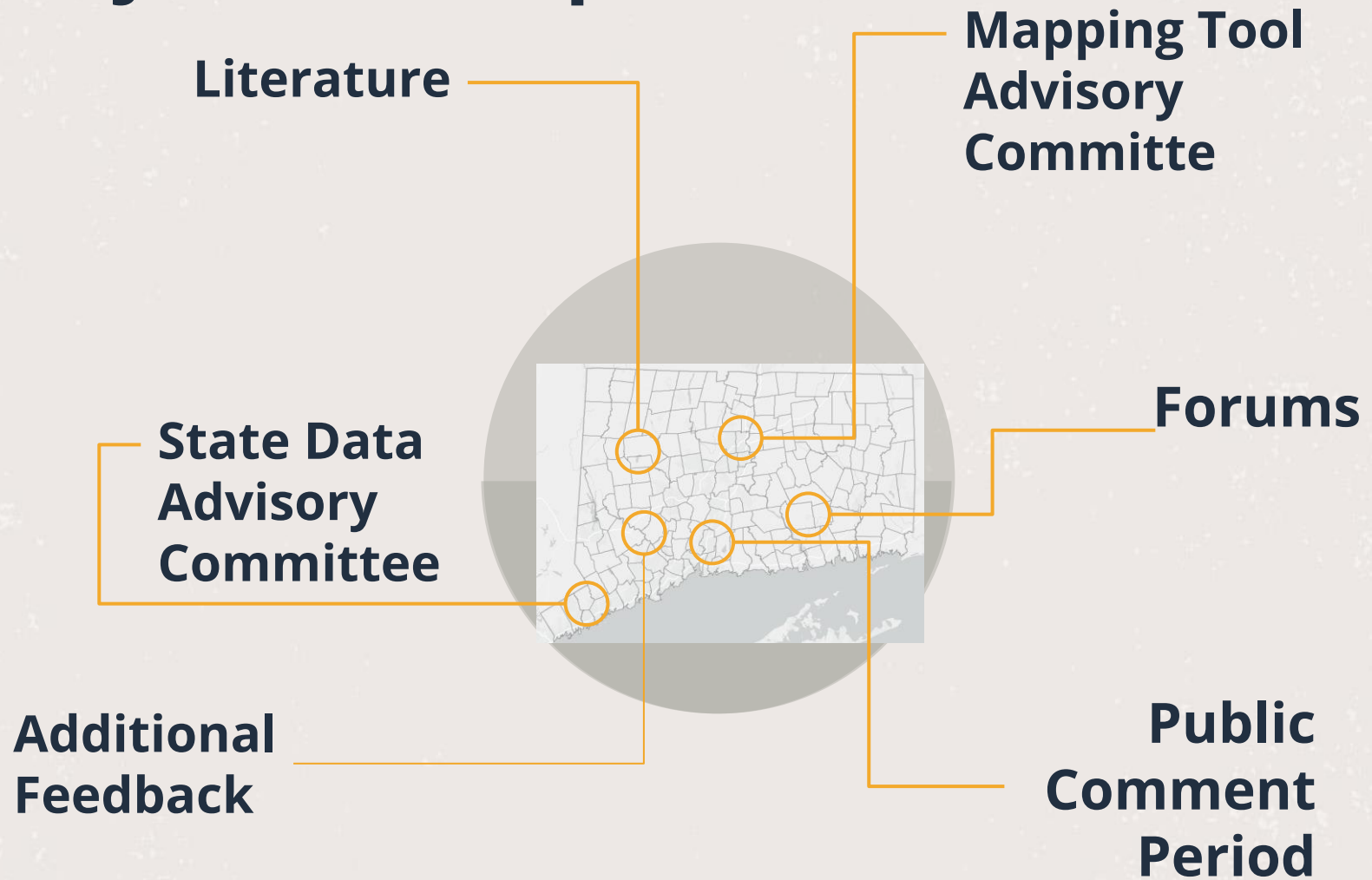
How can you use the tool?



How can you use the tool?



Project Development



State Data Advisory Committee (SDAC)

- Office of Policy & Management
- Yale Center on Climate Change & Public Health
- DataHaven
- Department of Economic and Community Development
- Department of Transportation
- Department of Public Health
- Department of Emergency Services and Public Protection
- Clean Air Association of the Northeast States (NESCAUM)
- Connecticut Data Collaborative

Mapping Tool Advisory Committee

- **Goal:** Fund organizations and individuals to advise on environmental justice mapping efforts for Connecticut
- **Members:** 2 organizations and 4 individuals
- **Eligibility:** Individuals with lived experience or representatives from community-based organizations (CBOs)
 - Operation Fuel
 - Groundwork Bridgeport
 - Individuals from Bridgeport, Windsor, New Haven, Hartford

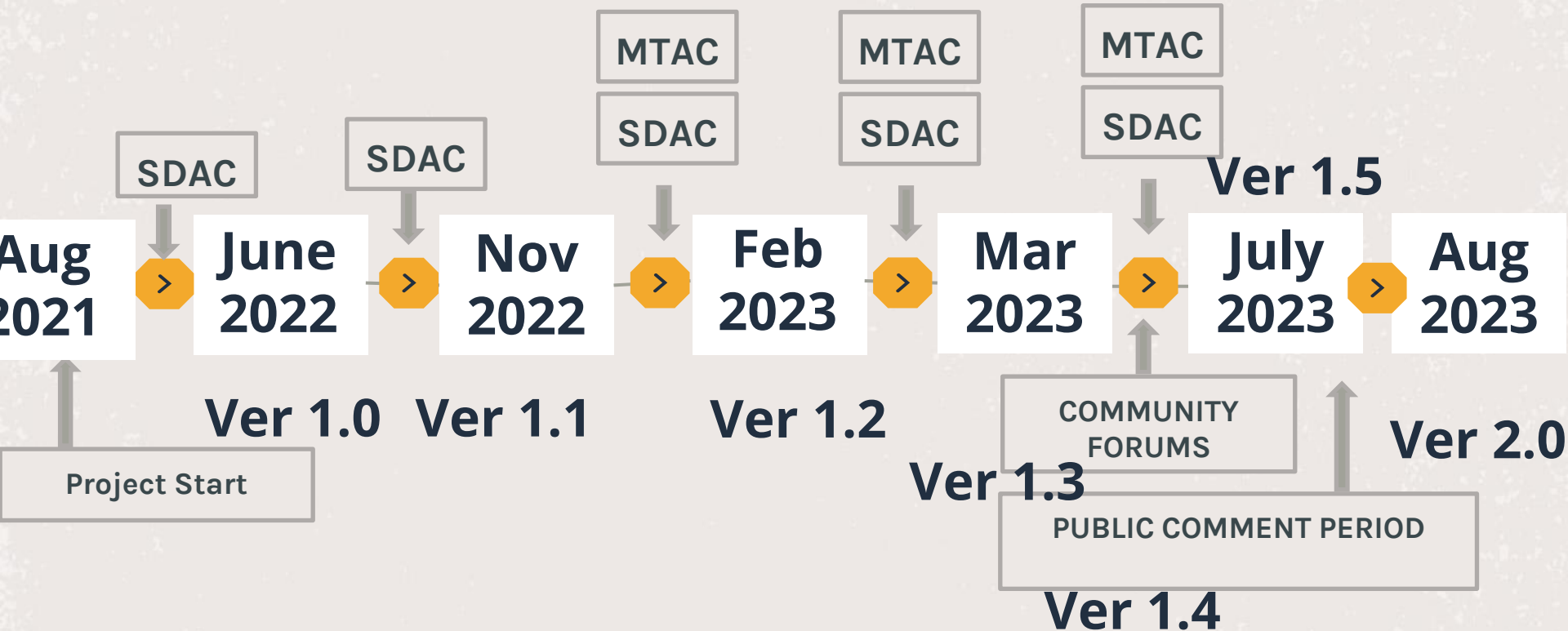




Forums

Bridgeport - East End NRZ
Waterbury - Waterbury Health
Department and Bridge to Success
Hartford- Center for Latino Progress
Groton - City of Groton
New Haven - Junta Progressive Action

Project Timeline



The public Comment Period Starts with a Webinar on July 17th and ends on July 30th.

Methodology



- GC3 Report Suggestions
- CT Specific Data Updates
- Environmental, Pollution, Health and Socioeconomic data sources

Methodology

**Data
Collection**

**Indicator
Selection and
Calculation**

**Cumulative
Index
Calculation**

Mapping

- Each indicator is equal within the category.
- If the data inside the indicator is weighted based on either proximity, value range or rate difference.
- Percentile and Rank calculation among census tracts.
- Allows relative comparison between census tracts.

Methodology

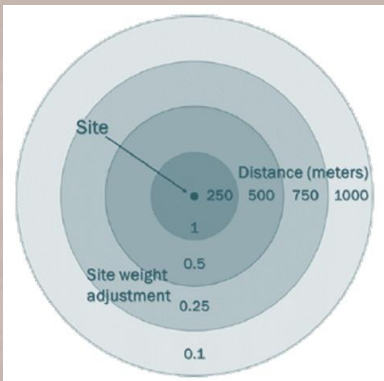
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“Percentiles show the placement of the data point within the dataset”

“Percentiles are normalized to ranks from 0 to 10 to standardized units among the indicators”

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Methodology



Overall Score	Environmental Justice Index Score = Pollution Burden x Sensitive Populations			
Composite Category	Pollution Burden $\frac{0.5 \times \text{average}(PPS) + \text{average}(PPE)}{1.5}$		Sensitive Populations $\frac{\text{average}(SF) + \text{average}(HS)}{2}$	
Category	Potential Pollution Sources (PPS)	Potential Pollution Exposure (PPE)	Socioeconomic Factors (SF)	Health Sensitivity (HS)

Methodology

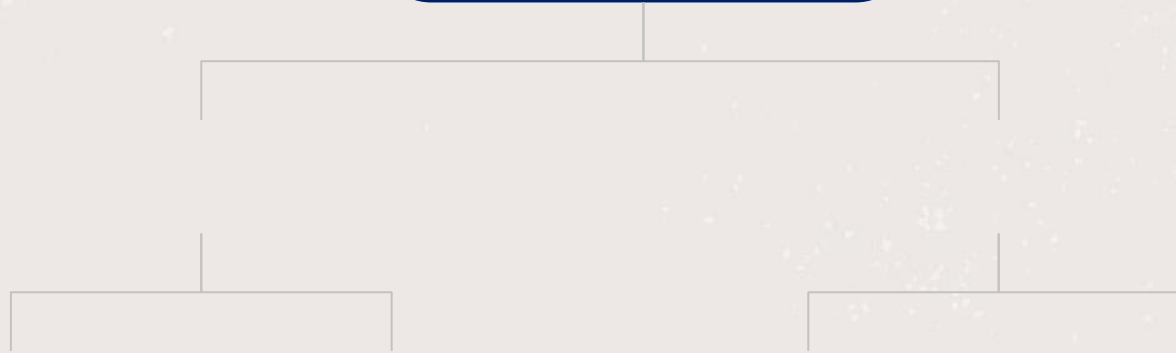


Darker areas = Higher rankings = Higher potential impact

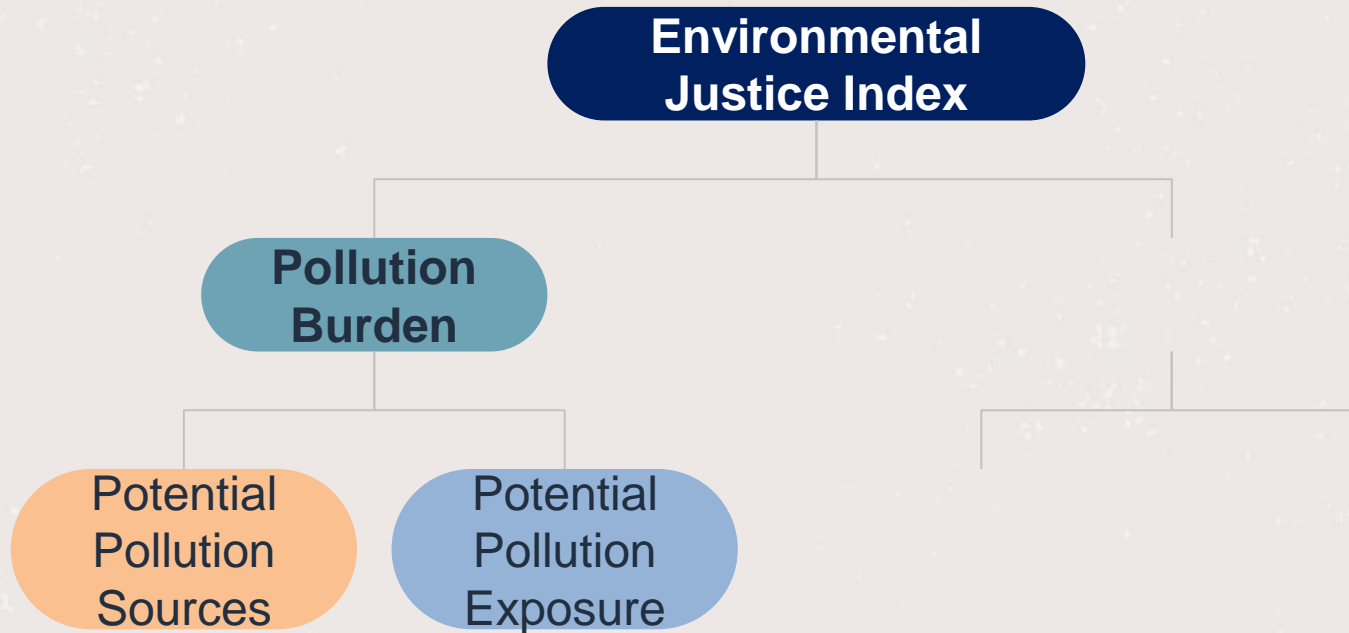
Least impacted							Most impacted		
0-1 10% of census tracts	1-2 10% of census tracts	2-3 10% of census tracts	3-4 10% of census tracts	4-5 10% of census tracts	5-6 10% of census tracts	6-7 10% of census tracts	7-8 10% of census tracts are similarly impacted	8-9 10% of census tracts	9-10 10% of census tracts
70% of census tracts are less impacted							20% of census tracts are more impacted		

Data Categorization

**Environmental
Justice Index**



Data Categorization



Data Categorization

Environmental Justice Index

Pollution Burden

Sensitive Population

Potential
Pollution
Sources

Potential
Pollution
Exposure

Socioeconomic
Factors

Health
Sensitivity

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Indicator	<ul style="list-style-type: none"> • Brownfield sites • Proximity to Superfund Sites • Impervious Surfaces • Incinerators • Landfills • Housing Lead Risk • Municipal Transfer Stations • Potentially Contaminated/Clean-Up Sites • Recycling Processing Facilities • Significant Environmental Hazards • Underground Storage Tanks • Facilities Managing Hazardous Chemicals • Wastewater Discharges 			

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Project Deliverables

Web Interface

CT EJ Screen Project
Website in English
and Spanish

CT EJ Screen Web
Application in
English and Spanish

Data Hub for Shapefiles

User Guides

2-Pager User Guide
explaining the
interface

Widget Description User
Guide

Web Application Tutorial
Document

Web Application Video
Tutorial

All materials Translated
into Spanish

Engagement Materials

Factsheet

General Audience Guide on
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List of Community
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Ideas for What to do with
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Applications of Statewide
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Second Language Speaker
High School Curriculum

Final Report

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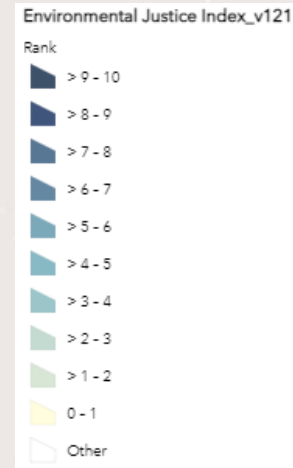
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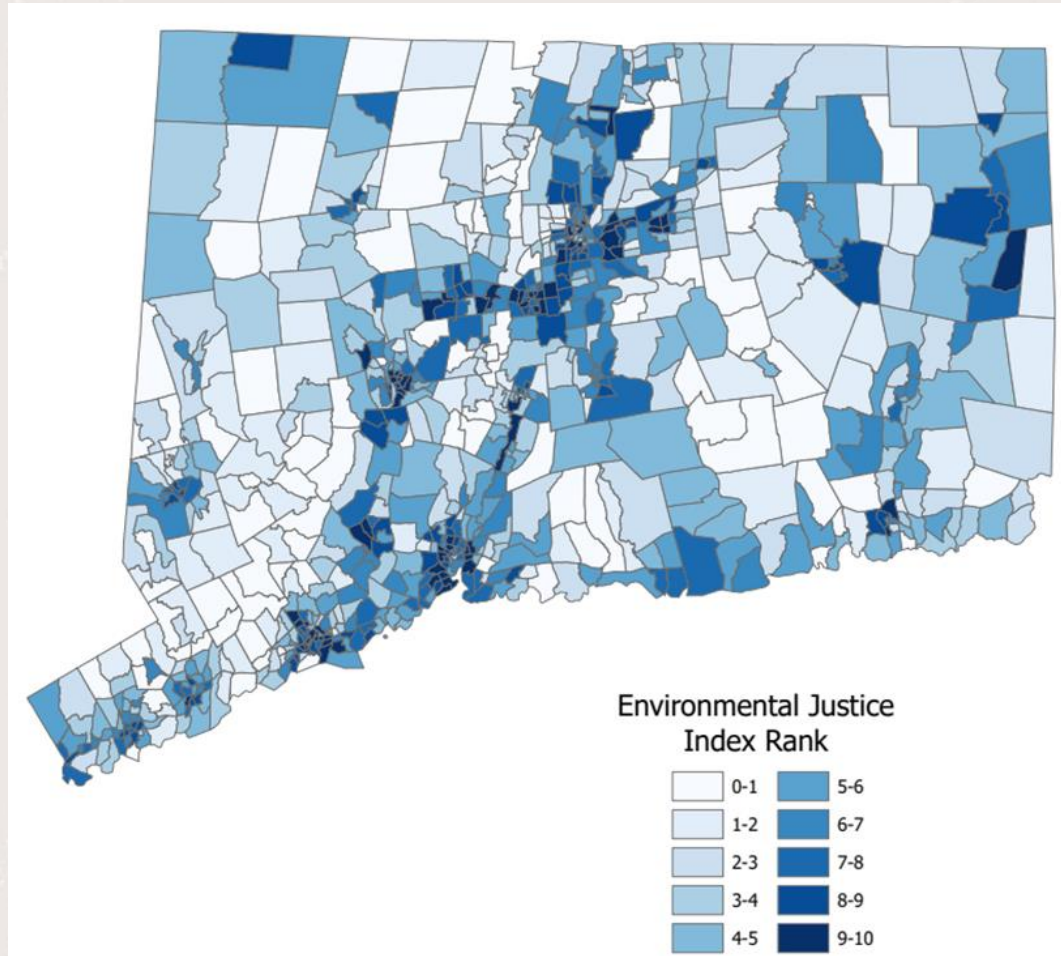
Final Report

CT EJ Index ver 1.5



Composite representation

- Pollution is accumulated in major cities and highway line
- Population characteristics are dominant on the east



Connect



<https://connecticut-environmental-justice.circa.uconn.edu/>

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Connecticut Environmental Justice Mapping Tool

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Thank you!

Do you have any questions?

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Credits: Slidesgo