Overview of Cumulative Impacts Policy Landscape

Pennsylvania Department of Environmental Protection
Citizens Advisory Council and EJ Advisory Board
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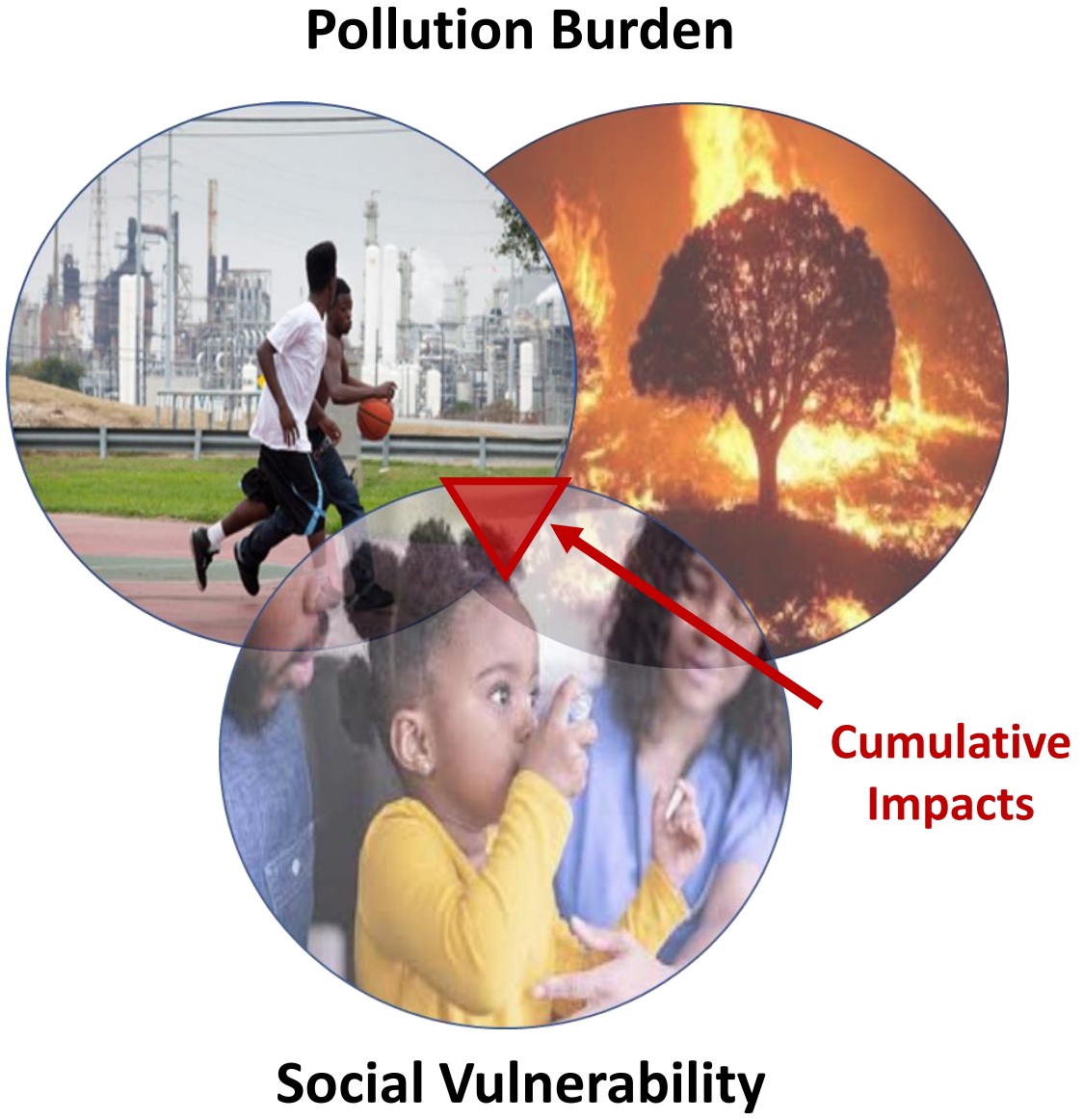
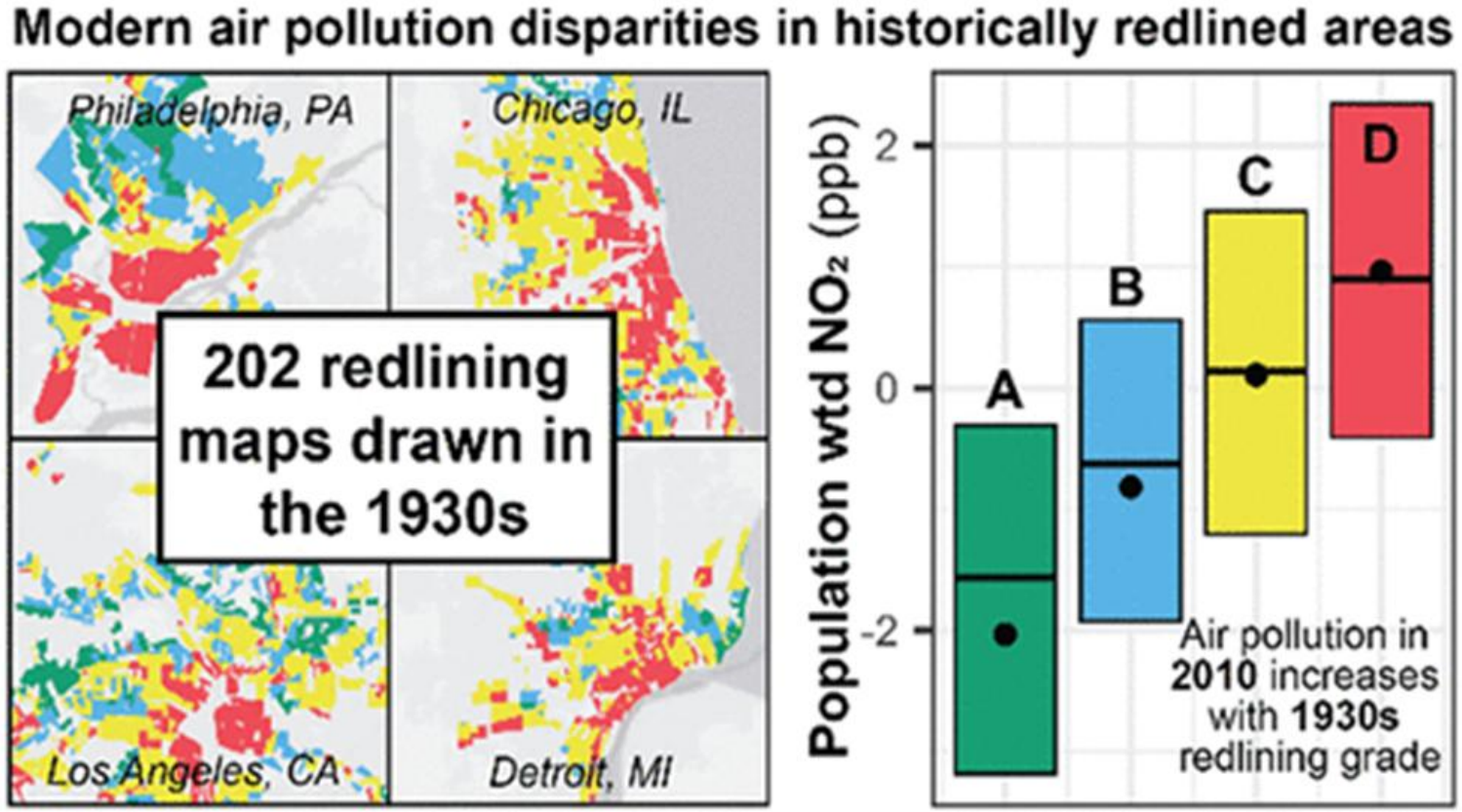
What are cumulative impacts?

Total burden of co-existence of multiple environmental and social vulnerability stressors, and their effects on health, well being and quality of life

Disproportionate impacts	**Concentration of burdens**
Social determinants of health	**Includes lack of benefits**
Communities know issue, not term	



Why is working on cumulative impacts important?



- Substantial scientific evidence
- Key to understanding accurate health impacts
- Long-standing testimony from communities
- Government policies/practices leading to inequitable distribution

Lane, et al. Environ. Sci. Technol. Lett. 2022, 9, 4, 345–350

Definitions of Cumulative Impacts: Key Concepts

California EPA

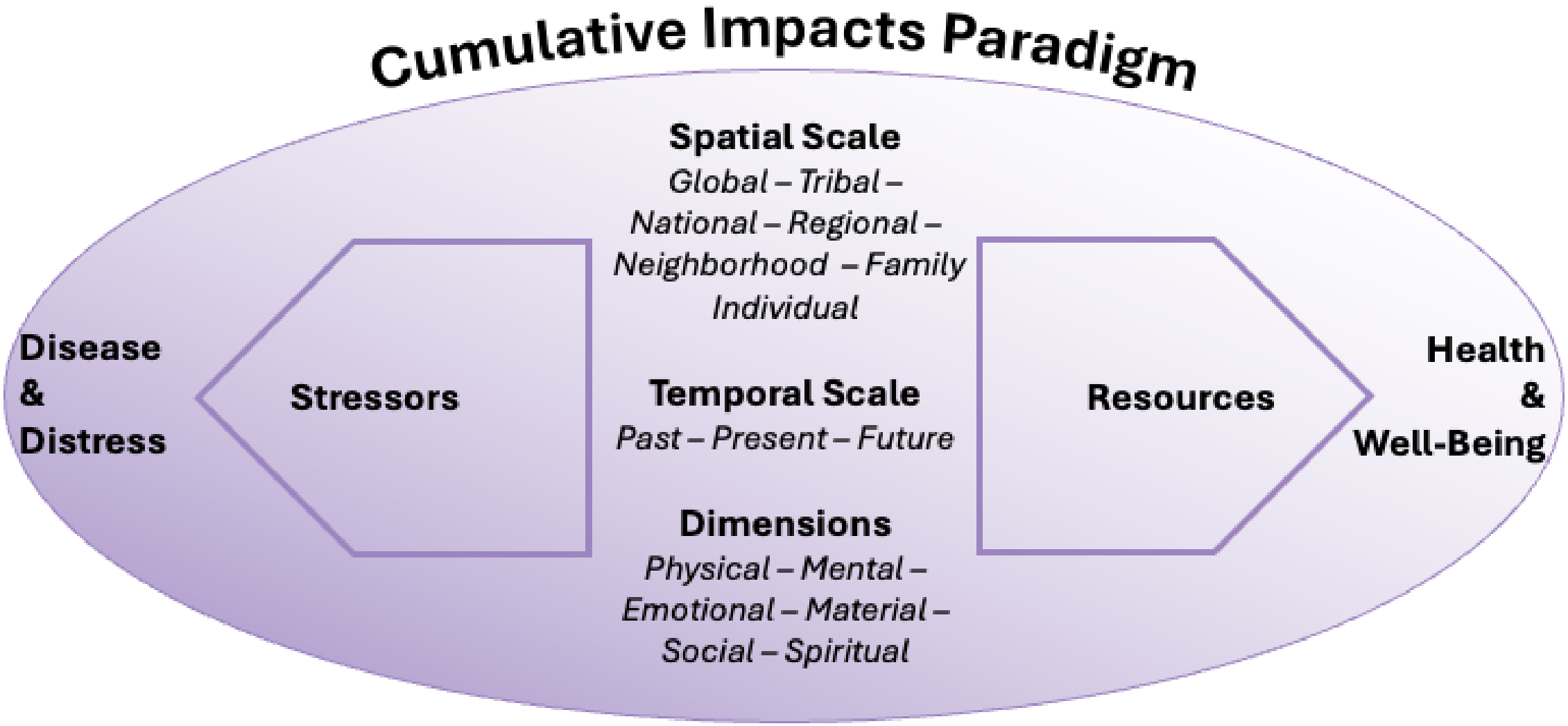
Cumulative impacts means exposures, public health or environmental effects from the combined emissions and discharges, in a geographic area, including environmental pollution from **all sources…**

US EPA

Cumulative Impacts (CI) are defined as the **totality of exposures** to combinations of chemical and nonchemical stressors and their effects on health, well-being, and quality of life outcomes… (including **distributional** factors)

Tishman Center

Cumulative impacts (CI) are the **co-occurrence of multiple environmental pollution burdens** alongside socioeconomic stressors… (and reflect **lived reality**)



Source: NASEM, State of the Science and Future of Cumulative impacts Assessment, October 2025

Key Moments

2004
NEJAC issues CI recommendations report

2004 & 2009
CA and NJ EJ Councils issue CI recommendations

2008
MN adopts CI permitting law

2010
CalEPA releases *CI: Building a Scientific Foundation* report

2012
CA issues CalEnviroScreen tool

2012
EPA issues EJScreen tool for internal use

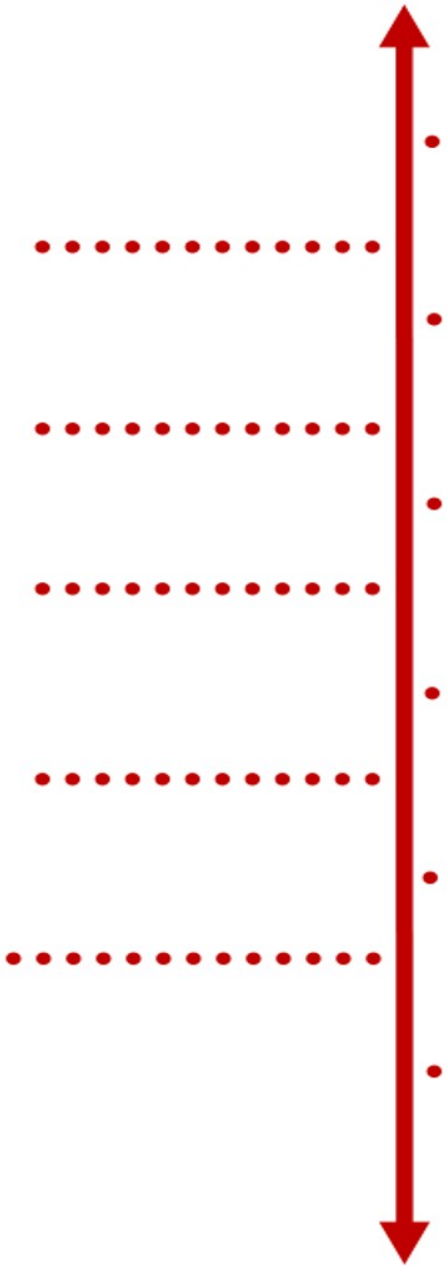
2012
CA passes SB 535–California Climate Investments to Benefit Disadvantaged Communities

2020 & 2023
NJ incorporate CI in EJ Law and Regulations

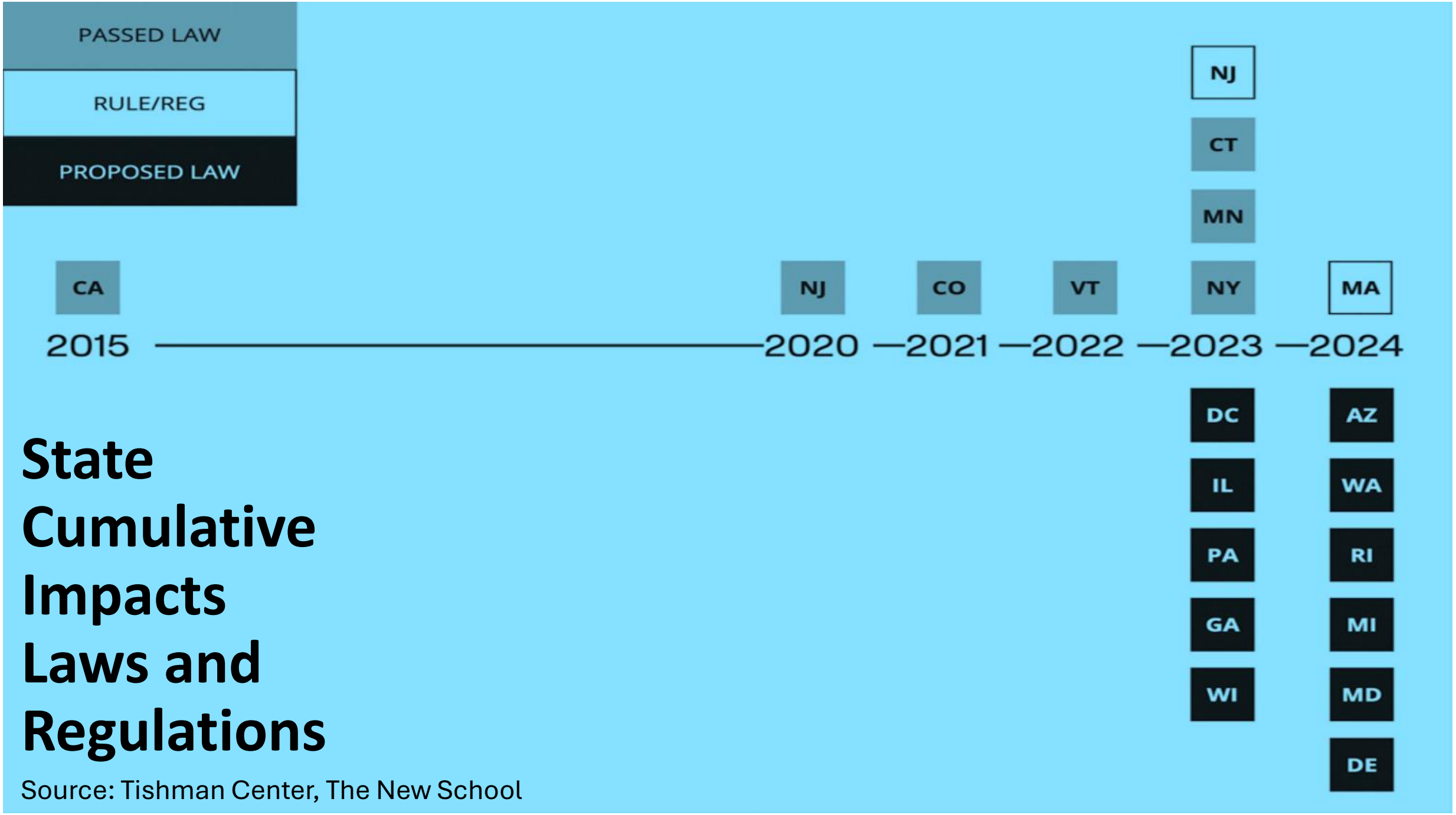
2022 & 2023
Chicago issues General Iron Health Impact Assessment/permit denial; subsequent Citywide CI Assessment

2024
EPA adopts CI Framework

2025
NASEM issues CI State of the Science Report



State Cumulative Impacts Laws and Regulations



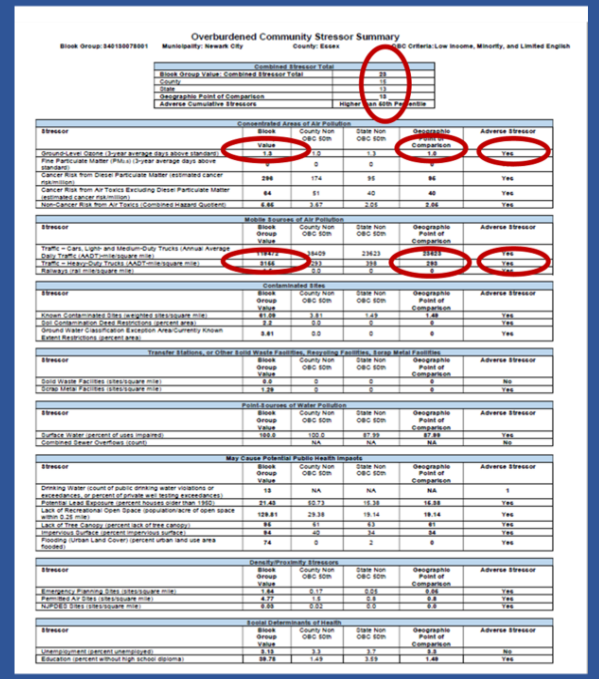
Source: Tishman Center, The New School

State and Local Cumulative Impacts Approaches: Major Prototypes

- California: Single score
- New Jersey: Matrix
- Massachusetts: Risk based thresholds focused on health endpoints
- Chicago: Health impact assesment

Adding to Cumulative Impacts Methodologies

CalEnviroScreen: Single Score



NJDEP: Matrix

Uses of cumulative impacts assessment

Single Scoring	Matrix Approaches	Community-Based Approaches	Epidemiological Toxicological/ Exposure Modeling Approches
• CalEnviroScreen • MiEJScreen • MI EJScreening • Chicago EJ Index • CDC EJ Index • WA Health Disparities Map	• New Jersey Regulations • MassDEP Methods • CEQ CEJST	• Health Impact Assessment • EJ Collaborative Problem Solving grants • Environmental Benefits Districts • Green zones	• Identifying modifying factors in risk characterization • Epigenetic approaches
Inform decisions in • siting • permitting • enforcement • infrastructure improvement	• Permit decisions (e.g., NJ, MA) • Prioritizing allocation of resources (CEQ CEJST)	• Community participatory research, place-based planning to revitalize communities • Identify how project influences health	• Risk assessment • Cumulative risk assessment

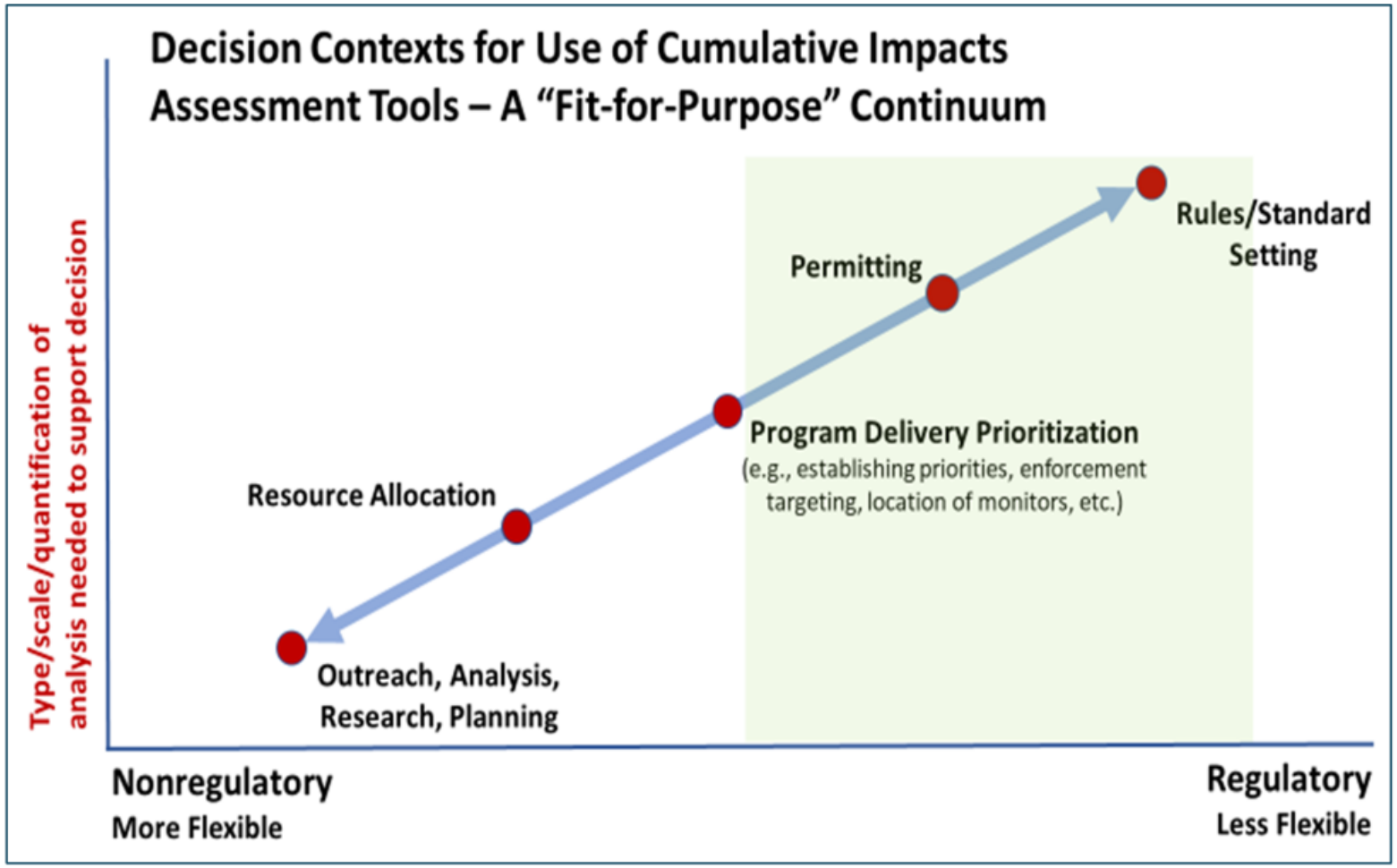
Fit-for-Purpose for Different Decision Contexts

Different decision contexts need different types of analyses.

Cumulative impacts analysis already used in significant ways (e.g., resource allocation/ program prioritization)

Regulatory contexts (e.g., permits, rules) require new approaches

New developments represent challenges and opportunities for cumulative impacts assessment.



CalEnviroScreen
CDC EJ Index
EJScreen
CEJST

NJDEP CI Regs
MassDEP Regs

Graphic Source: Lee, "Confronting Disproportionate Impacts and Systemic Racism

Recent Developments and Resources

- Cumulative impacts regulations development in NY, MN and CN. Statutes enacted and bills proposed in many other states and cities
- Johns Hopkins University studies on SE Pennsylvania and Cancer Alley
- Tishman Center database on state cumulative impacts laws, regulations and policies
- NASEM Report on State of the Science and Future of Cumulative Impacts Assessment
- Harvard Environmental and Energy Law Program CleanLaw Podcast and analysis of state regulations (November 2025, forthcoming)
- Environmental Justice Journal Special Issue on Cumulative Impacts and Government Decision-Making (December 2025, forthcoming)