AGENDA: 3

2024-2029 Strategic Plan

Advisory Council

October 30, 2024

Greg Nudd

Deputy Executive Officer

Bay Area Air Quality Management District

Outline

- Strategic Plan Development
- Strategic Plan Overview
- Goals and Strategies
- Implementation
- Strategy Deep Dives:
  - Strategy 1.1 Change to Approach to Air Quality
  - Strategy 2.11 Cumulative Health Impacts

Strategic Plan Development

Why a Strategic Plan?

- Aligns Board of Directors, Community Advisory Council, employees, and public on mission, values, and vision
  - Ensure alignment on work and decision making
- Sets goals and objectives for next 5 years; aligns resources to support them
- Provides tool for accountability; track progress and communicate feedback

Why focus on Environmental Justice?

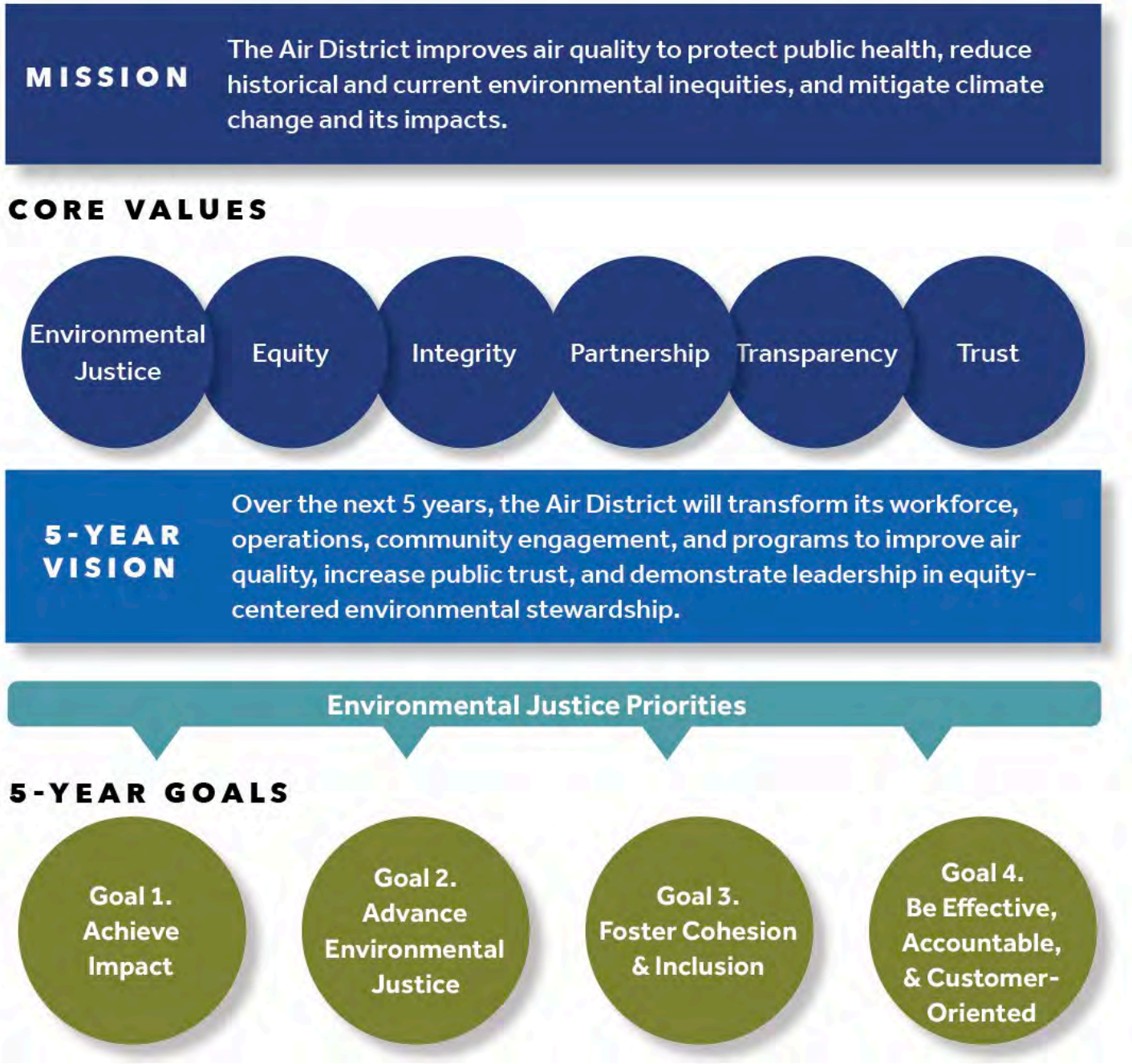
- Many low-income, communities of color experience relatively higher air pollution than rest of region
- Work with AB 617 communities, Community Advisory Council (CAC) and others has inspired a shift in focus for agency
- Plan demonstrates commitment to work with communities to reduce disparities in exposure to air pollution
- CAC Environmental Justice Priorities inform plan goals and strategies

Plan Development Engagement

- Visioning exercises, workshops, and meetings with employees
- Surveyed partners: community, industry, and government agencies
- Collaborated with Board via ad hoc committee and retreats
- Worked with our Community Advisory Council to align plan with EJ priorities

Strategic Plan Overview

Strategic Plan Framework



Goal 1: Achieve Impact

- Reduce health impacts of air pollution
- Hold violators accountable
- Mitigate climate change and its impacts

Sample Commitments to Action

- With community partners, determine which sources cause the highest level of pollution and which actions to take.
- Update regulations to ensure health protection and stringency.
- Increase inspections and monitoring where flaring occurs.
- Develop enforcement policy that considers environmental justice principles and community perspectives.
- Develop regional climate plan.

Goal 2: Advance Environmental Justice

- Build partnership and community capacity
- Identify disparities
- Reduce disparities

Sample Commitments to Action

- Expand community partnership models to other communities impacted by air pollution.
- Provide community with air quality and health data, data collection tools, and training.
- Improve the transparency of complaint outcomes.
- Meet regularly with community members on compliance and enforcement activities.

Goal 3: Foster Cohesion & Inclusion

- Embody diversity, equity, inclusion, and belonging
- Become *One Air District*

Sample Commitments to Action

- Establish recruitment, hiring, retention, and advancement policies and practices that promote diversity and inclusion and remove any structural biases.
- Conduct annual diversity and unconscious bias training for all levels of the organization.
- Add advancing environmental justice and equity as a core competency in performance reviews.

Goal 4: Be Effective, Accountable, and Customer-Oriented

- Improve permitting, monitoring, and enforcement
- Build relationships and enhance communications
- Be accountable

Sample Commitments to Action

- Target inspections and other compliance activities where they are most needed.
- Increase social media presence to expand youth outreach and engage young people.
- Strengthen internal organizational knowledge and communication skills so people experience the highest level of service.
- Create measurable performance outcomes for each strategy and associated action.

Strategy Deep Dives

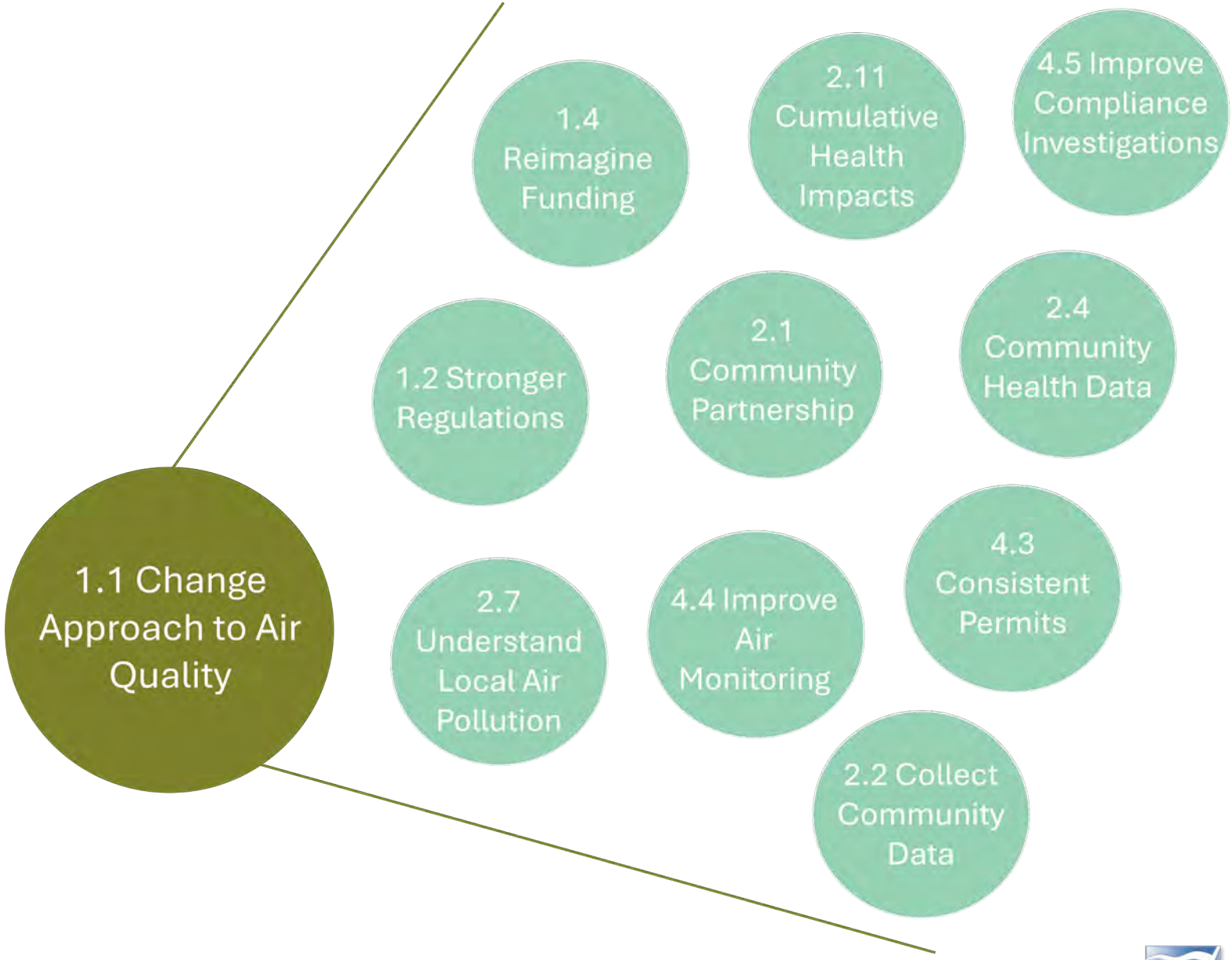
Strategy 1.1 Change Approach to Air Quality

Description: Change approach to reducing air pollution so that we achieve more meaningful improvements to air quality in communities, with a focus on those overburdened by air pollution.

Strategy Commitments:

- Determine which sources cause highest level of air pollution.
- Partner with communities to determine which sources most impact them.
- Determine which actions have the greatest impact in reducing pollution.
- Prioritize actions that reduce inequitable exposures to air pollution.

Strategy 1.1 Nexus to Other Plan Strategies



Strategy 1.1 Nexus to Other Plan Strategies (cont.)

- **Strategy 1.2 Stronger Regulations:** Develop stronger regulations, prioritizing those that can improve local air pollution.
- **Strategy 1.4 Reimagine Funding:** Reimagine funding programs so that they better benefit communities impacted by air pollution.
- **Strategy 2.1 Community Partnership:** Develop partnerships with communities so they can directly participate in the solutions to air quality problems that impact them.
- **Strategy 2.2 Collect Community Data:** Build community capacity to collect air pollution data; ensure the Air District better utilizes data to reduce the pollution that harms communities most.
- **Strategy 2.4 Community Health Data:** Provide communities with better health information, so they know the potential health implications of air pollution and are better able to participate in decision-making.

Strategy 1.1 Nexus to Other Plan Strategies (cont.)

- **Strategy 2.7 Understand Local Air Pollution:** Work with communities overburdened by air pollution to develop a more complete understanding of air pollution in their neighborhoods.
- **Strategy 2.11 Cumulative Impacts:** Develop our understanding of the cumulative effects of air pollution and other stressors; use this information to focus regulatory efforts in areas experiencing the most serious air pollution and related cumulative impacts.
- **Strategy 4.3 Consistent Permits:** Ensure Air District regulations and associated air quality permits issued are clear, consistent, and enforceable so that air pollution affecting communities is minimized.
- **Strategy 4.4 Improve Air Monitoring:** Update design and operations of air quality monitoring network to improve reliability, efficiency, data quality, and accessibility to better meet monitoring objectives and to support efforts to understand local exposure to air pollution.
- **Strategy 4.5 Improve Compliance Investigations:** Increase the efficiency and effectiveness of inspection and investigation resources to improve compliance and increase the impact of our enforcement program.

Strategy 2.11 Cumulative Impacts

Description: Develop our understanding of the cumulative effects of air pollution and other stressors and use this information to focus regulatory efforts in areas experiencing the most serious air pollution and related cumulative impacts.

Strategy Commitments:

- Develop and share methods to better understand where cumulative impacts exist and how they should be considered in decision making.
- Consider cumulative impacts in our programs, including permitting, regulations and compliance.
- Provide tools and guidance to local governments to address cumulative impacts.

Cumulative Impacts Commitment 2.11.2

Consider cumulative impacts in our programs, including permitting, regulations and compliance.

Air Quality Planning

- Opportunities for a community-focused approach

California Environmental Quality Act Guidance

- Opportunities for more thorough consideration of cumulative impacts

Permits (New and Modified Facilities)

- Opportunities for a more refined and protective health risk assessments

Stationary Source Regulations (Existing Facilities)

- Opportunities to consider cumulative impacts when setting emission standards

Strategy 2.11 Nexus to Other Plan Strategies

Strategy 2.11 Nexus to Other Plan Strategies (cont.)

- **Strategy 1.1 Change Approach to Air Quality:** Change our approach to reducing air pollution so that we achieve more meaningful improvements to air quality in communities, with a focus on those overburdened by air pollution.
- **Strategy 2.1 Community Partnership:** Develop partnerships with communities so they can directly participate in the solutions to air quality problems that impact them.
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- **Strategy 4.3 Consistent Permits:** Ensure Air District regulations and associated air quality permits issued are clear, consistent, and enforceable so that air pollution affecting communities is minimized.
- **Strategy 4.9 Land Use Impacts:** Provide tools for local governments to consider environmental justice, air quality, and climate priorities in local land use plans, policies, projects, and permitting decisions.

Next Steps

Next Steps

- Put supporting infrastructure into place
- Develop action plans
- Align next budget cycle with goals and strategies
- New strategic plan website will show progress through performance metrics
- Report annually

AGENDA: 4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

National Academies Project on Cumulative Impact Assessment

Advisory Council Meeting
October 30, 2024

David Holstius, PhD
Senior Advanced Projects Advisor
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Presentation Outline

- Overview of current National Academies project*
  - Organizations
  - Process and timeline
  - Charge questions
  - Key participants

* Project title = “State-of-the-Science and the Future of Cumulative Impact Assessment” (National Academies of Sciences, Engineering, and Medicine)

https://www.nationalacademies.org/our-work/state-of-the-science-and-the-future-of-cumulative-impact-assessment

Organizations

- Leading: National Academies of Sciences, Engineering, and Medicine
- Sponsoring: U.S. Environmental Protection Agency (EPA)

Charge Questions

- How can elements of prior risk assessment advice from the National Academies, developments by EPA and others, and response from communities inform a holistic and inclusive approach to developing and implementing cumulative impact assessment?
- What types of stressors should be prioritized, characterized, and considered in combination in a cumulative impact assessment (e.g., chemical, nonchemical, and climate-related stressors)?
- How should stressors be conceptualized relative to community assets and vulnerability, and how can environmental justice considerations be incorporated in relation to cumulative exposures and health risks facing diverse communities and populations?
- How can community-generated data and tribal ecological knowledge be incorporated into cumulative impact assessment?

Charge Questions (cont’d)

- How can cumulative impact assessment be adapted to different communities, generalized to regional or national scale, and remain flexible for EPA's different programmatic needs?
- What methods for assessing health effects, such as allostatic load (or biological aging, or toxic stress) are most useful for incorporating into cumulative impact assessment?
- How should uncertainty in cumulative impact assessments be characterized, particularly when using mixed methods?
- What are the key considerations in characterizing and managing environmental justice in relation to cumulative exposures and health risks facing diverse communities and populations?

Process and Timeline

- June–September 2024
  - Open: 1 multiday event; 1 workshop
  - Closed: 5 additional meetings; 5 subgroup meetings
- **October 2024**
  - Oct 15: Workshop #1 (open)
    - Member self-introductions + quick summaries of prerecorded full presentations
    - Moderated panel discussions
    - Public comments
  - Oct 22: Meeting #6 (partly open)
    - Moderated panel discussion
    - Public comments
- Consensus report (TBD)

Committee

Chair

Dr. Weihsueh A. Chiu
Professor
Department of Veterinary Physiology and Pharmacology, Texas A&M

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Kathryn Guyton
Senior Program Officer
Board of Environmental Studies and Toxicology, National Academies

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Executive Director Emeritus, Silent Spring Institute; Research Associate in Epidemiology, Brown University

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Dr. Deborah Cory-Slechta
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Dr. Walter E. Auch III
FracTracker Alliance

Jo Banner
The Descendants Project

Dr. DeeDee Bennett Gayle
University at Albany, State University of New York

Cassie Cohen
Portland Harbor Community Coalition

Tewentahawih'tha Cole
Akwesasne Mohawk Tribe

Jess Conard
Resident, East Palestine, OH

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Jackson State University

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Dr. Nikita Patil
Aquasaic

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Indiana University School of Public Health Bloomington

Shereyl Snider
East Trenton Collaborative

Dr. Orly Stampfer
Washington State Department of Health Climate and Health Section

Raymond Sweet
Hollygrove-Dixon Neighborhood Association

Workshop Presenters

KEYNOTE

Cumulative Impacts of Pollution and Environmental Policy

- Dr. Janet Currie, Princeton

SESSION 1: Key Concepts

What is cumulative impact assessment?

- Dr. Na'Taki Osborne Jelks, Spelman College

Regulatory policy basis of cumulative impact assessment

- Dr. William Boyd, UCLA
- Dr. Tracey Woodruff, UCSF

An exposome approach to understanding disparities in risk-trajectories to chronic disease

- Dr. Darryl B. Hood, Ohio State

SESSION 2: Combined Impacts

Combined impacts of pollutants, climate, the social environment, and other factors on community health

- Dr. Joan Casey, U Washington

Vulnerability, resilience, and capacities to respond to environmental impacts

- Dr. Christopher Emrich, U Central Florida

Opportunities for promoting health and community well-being

- Dr. Denise Dillard, Washington State

Salutogenesis

- Dr. Sacoby Wilson, U Maryland

SESSION 3: Methods/Approaches

The role of geospatial models in representing and addressing cumulative impacts

- Dr. Marcos Luna, Salem State Univ

Available models to combine cumulative impacts across domains

- Dr. Bill Rish, ToxStrategies

Multicriteria decision analysis

- Dr. Ben Trump, U.S. Army Corps of Engineers

Integration of environmental, health, and government administrative data

- Dr. Reed Walker, UC Berkeley

Discussion

- Thank you

Risk Assessment and the Challenge of Cumulative Impacts: Some Lessons from Regulatory History

William Boyd, JD, PhD

Professor UCLA School of Law & UCLA Institute of the Environment & Sustainability

BAAQMD Advisory Council | October 30, 2024

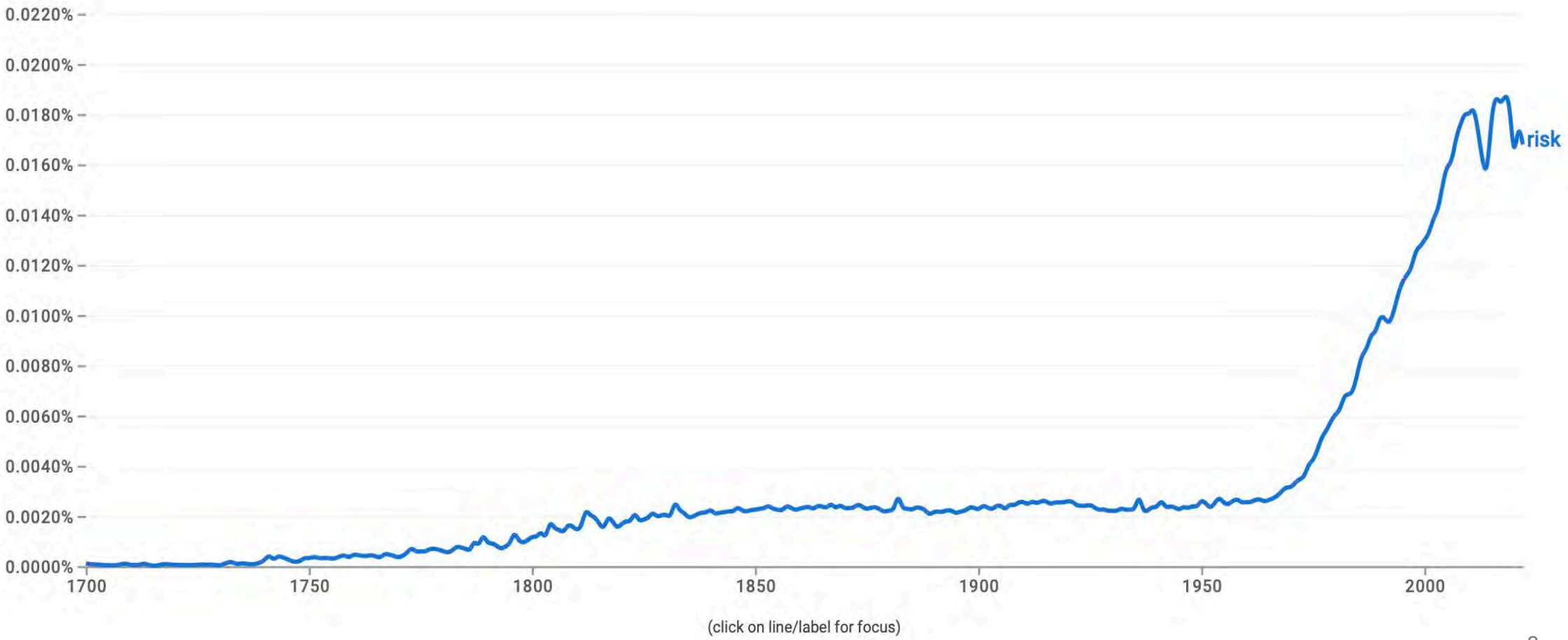
Roadmap

- Brief, selective history of risk assessment in health, safety, and environmental law
- Challenges of accommodating cumulative risk and cumulative impacts in the risk assessment framework
- Some lessons from the regulatory history of risk assessment

Google Books Ngram Viewer

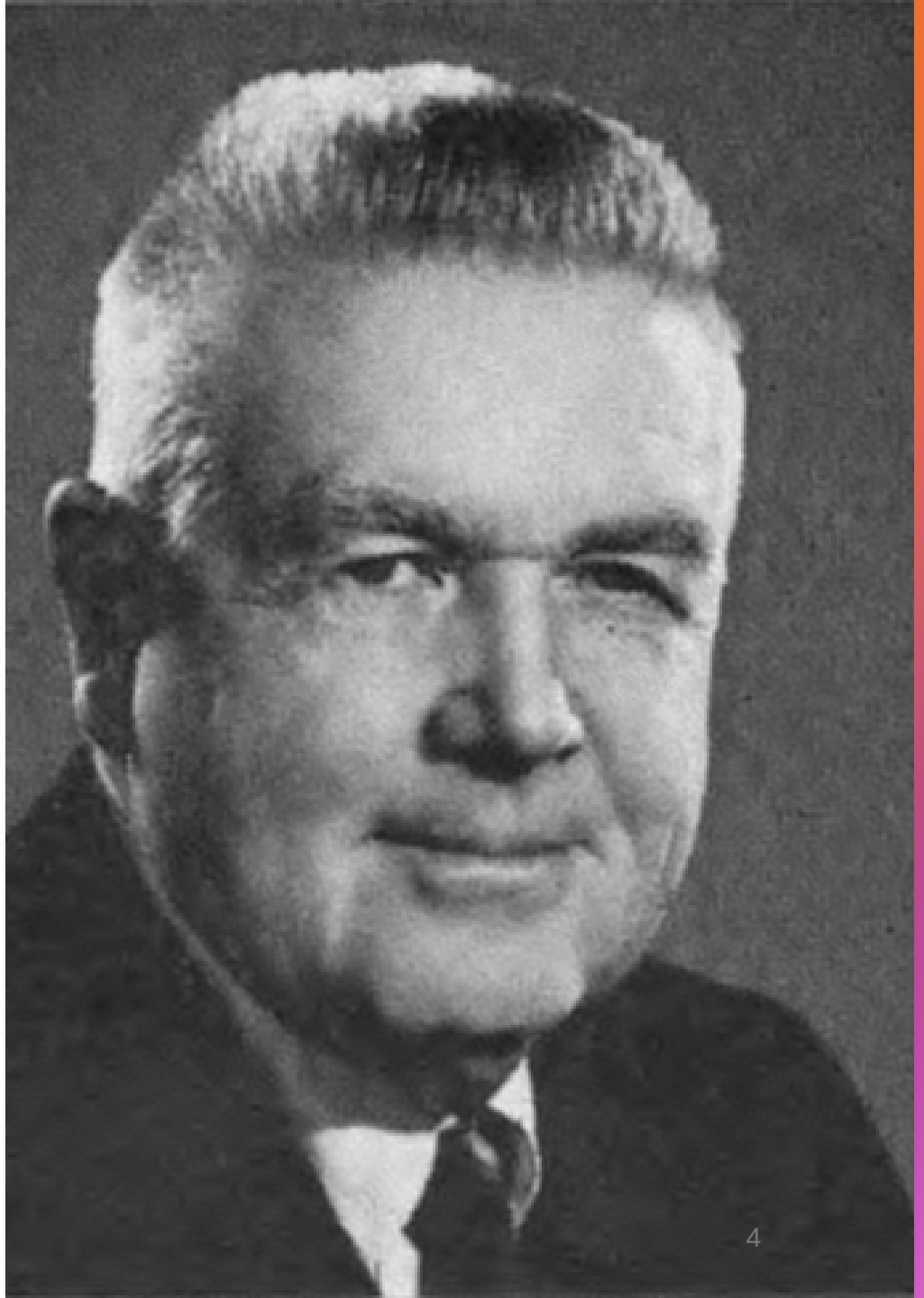
risk

1700 - 2022 | English | Case-Insensitive | Smoothing of 0



1958 “Delaney Clause” amending 1938 Federal Food, Drug, and Cosmetic Act

No food additive “shall be deemed to be safe if it is found to induce cancer when ingested by man or animal, or if it is found, after tests which are appropriate for the evaluation of the safety of food additives, to induce cancer in man or animal”



Between 1958 and 1978 significant advances in detection capabilities and analytical techniques reveal vast new world of environmental hazards

- Sensitivity of detection capabilities increases by ~ 5-6 orders of magnitude
- Substantial increase in animal testing and development of new low-dose extrapolation techniques
- Recognition of vast range in cancer potencies
- Advances in pollutant fate and transport models and attention to problems of environmental persistence and biomagnification reveal widespread global contamination

Expanding Universe of Carcinogens

4 = Known Human Carcinogens in 1958

37 = Known Human Carcinogens in 1978

500+ = Known Animal Carcinogens in 1978

Source: Richard Wilson, *Risks Caused by Low Levels of Pollution*, 51 YALE J. BIOLOGY & MEDICINE 37, 48 (1978)

"When FDA entered the 1970s, the Agency believed that it was feasible to eliminate virtually all carcinogens from the food supply. By the end of the 1970s, the Agency had indisputable proof that it [was] impossible. Thus, it became essential to adjust regulatory policy to accommodate this new scientific information."

-Peter Hutt, Former FDA Chief Counsel, *Use of Quantitative Risk Assessment in Regulatory Decisionmaking under Federal Health and Safety Statutes*(1985)

OSHA Generic Cancer Policy, 1977

Identification, Classification, and Regulation of Toxic Substances Posing a Potential Occupational Carcinogenic Risk, 42 Fed. Reg. 54148 (Oct. 4, 1977)

- OSHA completed only 4 rulemakings in the health area during its first six years (1970-76)
- Workers were being exposed to hundreds of toxic chemicals in the workplace with outdated or non-existent standards
- OSHA proposed Generic Cancer Policy as means to move quickly on carcinogens in the workplace
- If chemical was found to induce cancer in animals or humans – OSHA would automatically set permissible exposure limits (PELs) at lowest feasible level

"It is OSHA's belief that if this proposal or something like it is not promulgated, with present resources the output of standards to protect American workers from carcinogens will never be adequate and may collapse by means of the futility of the effort. Indeed, to follow the present system and procedure for each and every individual substance and hazard would be, we contend, beyond the abilities of any agency, no matter how large a staff it may have."

-42 Fed. Reg. 54148, 54154 (Oct. 4, 1977)

Supreme Court Benzene Decision, 1980

Industrial Union Dept., AFL-CIO v. American Petroleum Inst., 448 U.S. 607 (1980)

- Industry challenge to OSHA's benzene rulemaking, which was promulgated in parallel to OSHA's Generic Cancer Policy
- Case becomes a referendum on OSHA's Generic Cancer Policy
- Split plurality decision requires OSHA to make a threshold finding of "significant risk" for individual chemicals before issuing any standards
- Widely viewed as requiring quantitative risk assessment before regulating
- Although decision applied specifically to OSHA, it was viewed as a strong signal to EPA and FDA on the need for quantitative risk assessment

1983: National Research Council Publishes Risk Assessment in the Federal Government (The "Red Book")

- Elaborates basic conceptual architecture of risk assessment
- Distinguishes between **risk assessment** as a largely technical exercise aimed at developing facts and **risk management** as a normative process of weighing alternative policy responses based on the facts provided by risk assessment
- Outlines four-step process for risk assessment:
  - Hazard identification
  - Dose-response assessment
  - Exposure assessment
  - Risk characterization

Source: US Environmental Protection Agency

1983: William Ruckelshaus Returns to EPA and Embraces Risk Assessment as Way to Restore Public Trust

"When I began my current, and second tenure as Administrator of EPA, my first goal was the restoration of public confidence in the Agency, and it was impressed upon me that straightening out the way we handled health risk was central to achieving [that]."

-William Ruckelshaus, *Risk in a Free Society*, Speech delivered at Princeton University (Feb. 18, 1984)

Risk Assessment at EPA, 1980s-2010s

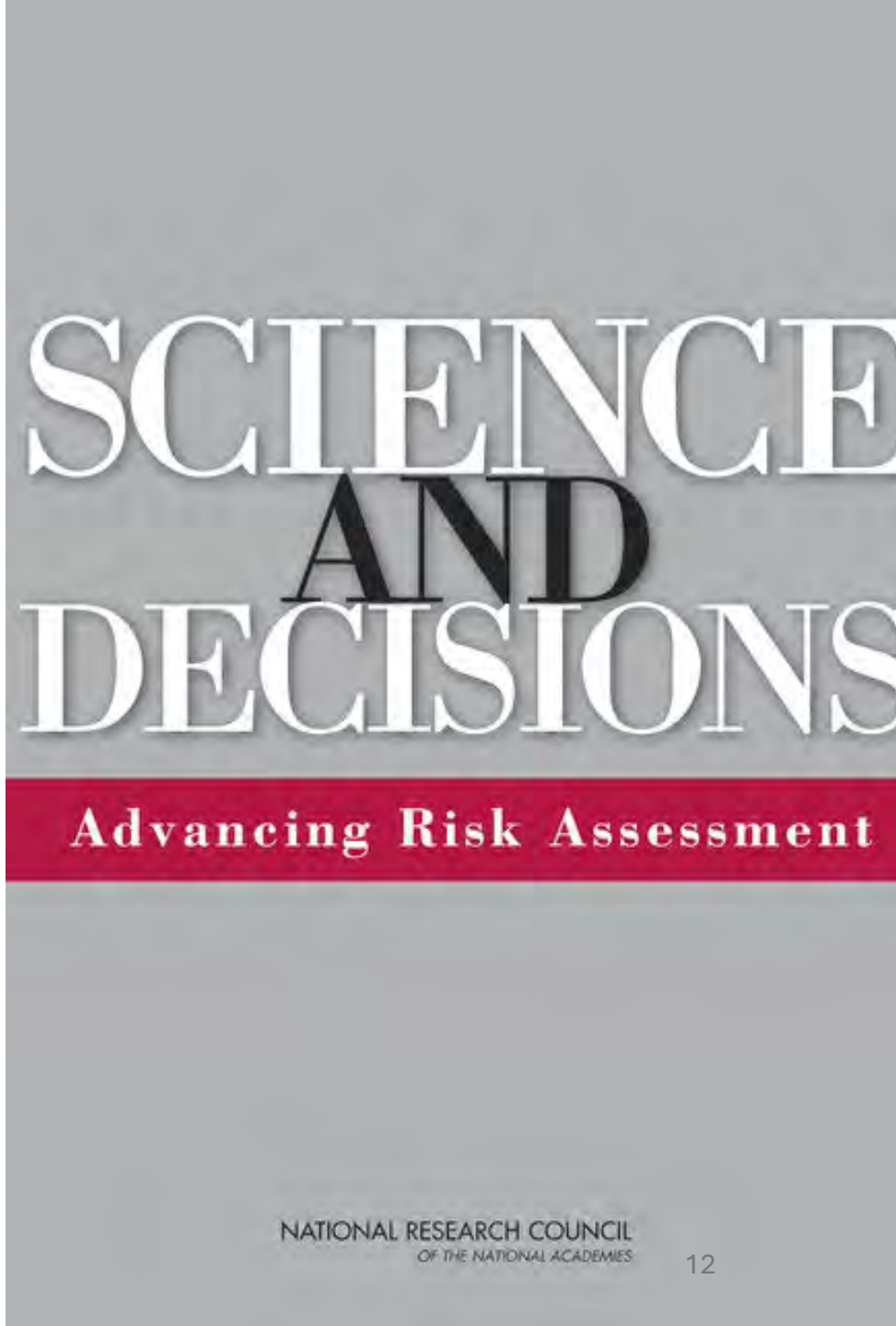
- Risk assessment becomes key part of the foundation of major regulatory programs for industrial chemicals, pesticides, hazardous waste, air and water pollution
- Substantial increase in use of models across statutory programs
- Growing emphasis on increasingly formal and elaborate approaches to quantifying and managing uncertainty in risk assessments
- Push to make comparative risk assessment overarching framework for determining priorities across agency programs
- Major risk re-assessments initiated in 1990s for dioxins, TCE, formaldehyde, etc.

Multiple Independent Reviews by the NRC, GAO and Others Point to Major Problems with Practice of Risk Assessment

"...risk assessment is at a crossroads. Despite advances in the field, it faces a number of substantial challenges, including long delays in completing complex risk assessments, some of which take decades to complete; lack of data, which leads to important uncertainty in risk assessments; and the need for risk assessment of many unevaluated chemicals in the marketplace and emerging agents."

"Decision-making based on risk assessment is also bogged down. Uncertainty . . . continues to lead to multiple interpretations and contribute to decision-making gridlock. Stakeholders—including community groups, environmental organizations, industry, and consumers—are often disengaged from the risk-assessment process at a time when risk assessment is increasingly intertwined with societal concerns. Disconnects between the available scientific data and the information needs of decision-makers hinder the use of risk assessment as a decision-making tool."

-NRC, Science and Decisions: Advancing Risk Assessment ix, 5 (2009)



Cumulative Risk & the Challenge of Complexity

- Standard approach to risk assessment tends to focus on single chemicals and single endpoints
- But hazardous chemicals are often implicated in multiple types of harm
- People are also exposed to multiple chemicals and other stressors across multiple exposure pathways in their daily lives
- Environments and exposure pathways are also constantly shifting, undermining the stability of any particular risk assessment

Narrowly focused risk assessments that omit complex interactions will be increasingly uninformative and unsupportive of effective preventive decisions. The broad challenge before the agency will involve developing tools and approaches to characterize cumulative effects in complex systems and harnessing insights from multistressor analyses without paralyzing decisions because of analytic complexities or missing data.

-NRC, Science for Environmental Protection: The Road Ahead 138 (2012)

Cumulative Risk & the Challenge of Complexity (cont.)

- Mid 1980s: Attention to cumulative risk under the Superfund program given the need to understand risks associated with potential exposure to large number of substances at individual sites || 1986 Guidelines for Health Risk Assessment of Chemical Mixtures introduces concept of Toxic Equivalency Factors (TEFs)

- Early to mid 1990s: Growing attention to exposures to multiple pesticides from diet and other pathways (particularly for children) || 1996 Food Quality Protection Act mandates attention to aggregate exposures across multiple pathways and to the cumulative effects of multiple pesticides with "common mechanism of toxicity"

- 1990s-2000s: EPA develops cumulative risk assessments for several pesticide groups; EPA proposes framework and additional guidance on cumulative risk (1997, 2003)

- 2016: New provisions in 2016 TSCA amendments do not require cumulative risk assessment but do provide possible basis for assessing exposure to multiple chemicals in risk evaluations

- 2022-23: New EPA general guidelines on cumulative risk + specific guidelines for cumulative risk assessment under TSCA + EPA ORD report on Cumulative Impacts

Structural Vulnerability and Environmental Justice

- Longstanding environmental justice critiques of risk assessment have demonstrated that risk assessment focus on averages and aggregates ignores the uneven and inequitable distribution of environmental harms
- Problem of structural vulnerability and the manner in which environmental harms compound these vulnerabilities has been largely invisible to standard risk assessment approach
- Quantitative risk assessment disempowers public participation and excludes certain facts, voices, and lived experiences
- Statutory provisions under FQPA and amended TSCA mandating attention to vulnerable subpopulations are a modest step in the right direction
- Emerging approaches to cumulative impacts might provide a way to accommodate these broader concerns – but if pursued within the standard risk assessment framework, could add to the complexity and contestability of these assessments

Going Forward: Some Lessons from Regulatory History

- Risk assessment in health, safety and environmental law emerged during a specific period (the late 1970s and early 1980s) and displaced earlier, more precautionary approaches
- Risk assessment is not simply a tool for discovering and developing facts; it has also operated as a political technology intended to discipline and constrain agency decision-making
- Risk assessment has not delivered the information needed for effective and timely regulation; individual risk assessments for single, data-rich chemicals take far too long, with many thousands of additional chemicals waiting in the queue
- Cumulative risk assessment and attention to structural vulnerabilities could make this all more difficult by increasing the analytical challenges and complexity of the exercise
- Many good recommendations exist for reforming risk assessment, including burden shifting, more pre-market testing, no data no market, increased attention to vulnerable subpopulations, use of stopping rules, etc.
- But also need to consider alternative approaches that employ simple hazard-based triggers for initial action based on a broad screening across a range of potential harms, employ generous safety factors to account for multiple uncertainties, improve research and surveillance on emerging contaminants of concern, consider generic class-based approaches where feasible, and iterate and adjust as new information becomes available
- Goal should be to move fast and protect people, to use simple default rules to drive innovation toward sustainability and health, and to build a more holistic framework that accounts for the ways that specific harms materialize and insinuate themselves into the lives of actual people

Thank you and further reading

Genealogies of Risk: Searching for Safety, 1930s-1970s, 39 ECOLOGY LAW QUARTERLY 895 (2012) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2203136

With Regard for Persons, 86 LAW & CONTEMPORARY PROBLEMS 101 (2023) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2203136

De-Risking Environmental Law, 48 HARVARD ENVIRONMENTAL LAW REVIEW 153 (2024) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4753197

Everywhere and Forever All at Once: PFAS and the Failures of Chemicals Regulation, Legal Planet (May 29, 2024) https://legal-planet.org/2024/05/29/pfas-and-the-failures-of-chemicals-regulation/

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