

NAEP Webinar

Environmental Justice: Assessing Social and
Health Impacts on Vulnerable Populations

*Health Impact Analysis for
Environmental Planners: A Case Study*

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Yorke Presenter

- Gregory Wolffe, SCAQMD C.P.P.
 - 30+ years environmental, 25 years Air Quality Impact Assessment
 - Expertise in air dispersion modeling, health risk assessment, monitoring & measurements
 - Industrial Facility Air Permitting
 - Federal, State, and Regional Regulatory Compliance



Yorke Engineering, LLC



- Yorke assists Industrial and Government clients with air quality and environmental regulations issued by the local, state, and federal agencies
 - Founded in 1996 and has worked for over 2,000 customers and facilities in CA
 - Over 7,500 air, water, waste, and safety projects completed



Agenda

- HIA: Purpose and Function
- Case Study: *Los Angeles GreenZones*
- HIA: Beyond Environmental Review
- Metrics of Health Outcome
- Program Features
- Conclusions

Health Impact Analysis Purpose

- Focus on ‘whole impact’
- Environmental Impact Analysis (EIA)
 - National Environmental Policy Act (NEPA)
 - California Environmental Quality Act (CEQA)
- Include analysis of direct and indirect health impacts and compare them to standards
- EIA addresses: “How bad is it?”
- HIA addresses: “How bad or good is it?”

HIA Purpose and Function

- Health impact assessments (HIAs) “bring together scientific data, health expertise, and public input to understand how a proposed plan, policy, program, project, or action could affect the public’s health.”
- Considers broad influences including social, economic, and environmental changes on human health.
- HIAs further environmental laws and policies by providing decision-makers with critical information to identify project alternatives or potential mitigation measures, broader effects on the environment and community, and potential overall health impacts

Source: Network for Public Health Law, December 2016

HIA Purpose and Function

- No statutory or regulatory laws requiring an HIA
 - Multiple legally-supported paths to incorporate health analyses, especially early on, into reviews pursuant to NEPA and CEQA
- EIA and HIA have similar process steps
 - Baseline conditions (Affected environment)
 - Environmental consequence analysis,
 - recommendations for measures to protect health.
 - A specific consideration in determining “significance” of an effect is “the degree to which the proposed action affects public health or safety”

Case Study: LA County GreenZones

- Los Angeles County Program Initiative
 - Implements the 2035 County General Plan
 - Zoning Ordinance for unincorporated areas
- Specific focus on recycling and solid waste facilities
- Regulates proximity development
 - Industrial uses ↔ Sensitive uses



Community Development Standards

- Establish Proximity Buffers



- Project and Building Design Features

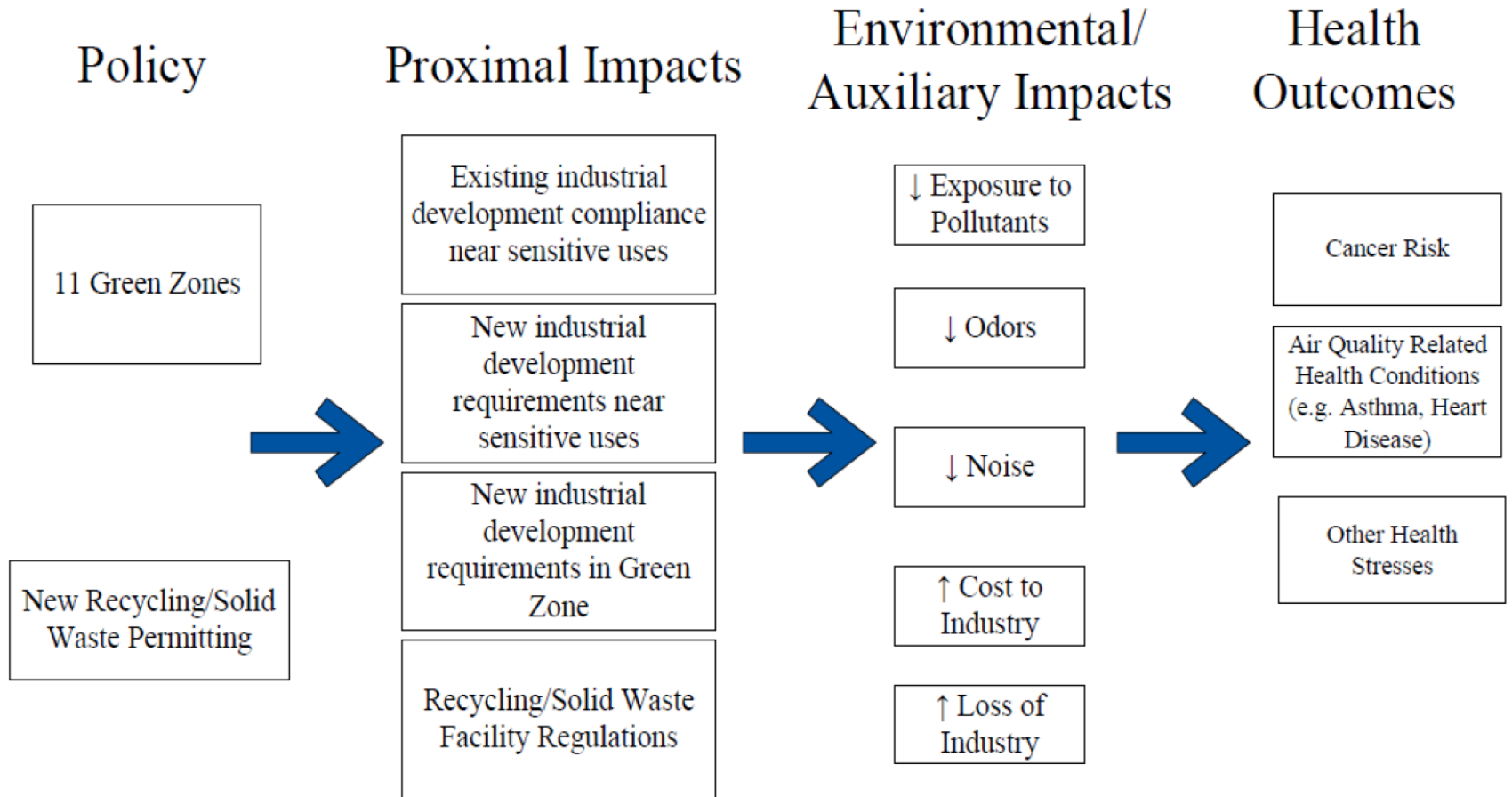


Focus: CA Solid Waste & Recycling

- California Waste Diversion Bills
- Los Angeles County Department of Regional Planning (DRP)
 - Organic waste recycling facilities
 - Composting, green waste only
 - Composting, mixed or food waste
 - Composting, vermiculture
 - Supermarket recycling collection center



Beyond Environmental Review



LA GreenZones HIA: Data Sources

■ Publicly Available Data

- Environmental Justice Screening Method (EJSM)
- U.S. EPA Toxics Release Inventory (TRI) emissions and air toxics exposures
- Multiple Air Toxics Exposure Study (MATES) ambient air monitoring for toxic air pollutants.

- Project-level Health Risk Assessment (HRA) to evaluate Air Toxics emissions

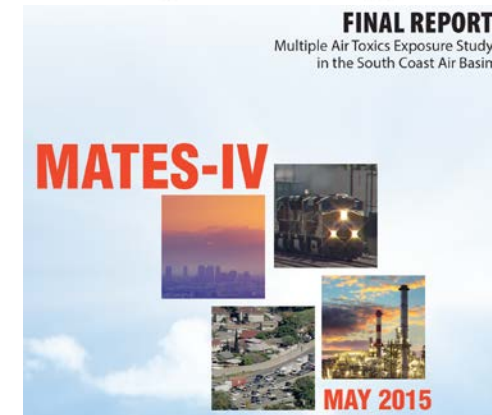


Environmental Topics

Laws & Regulations

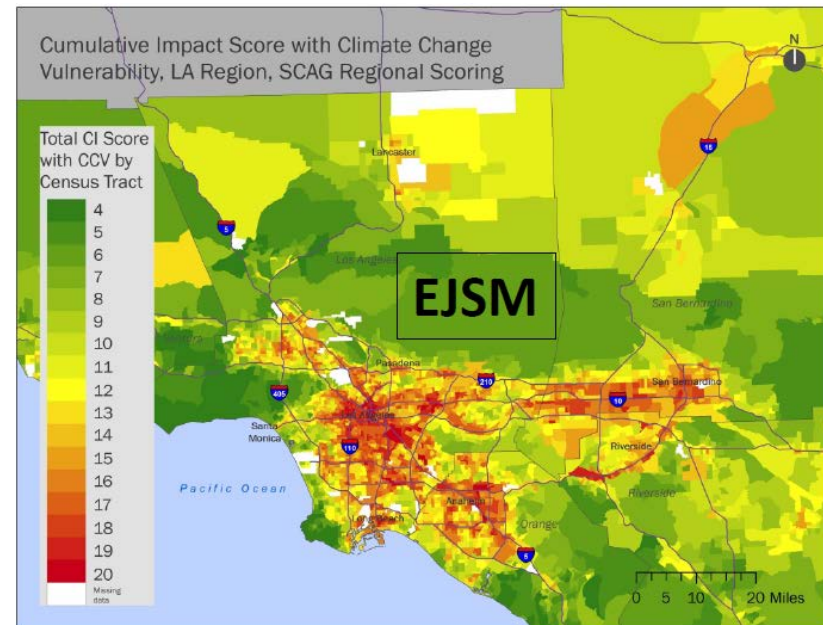
About EPA

Toxics Release Inventory (TRI) Program



Environmental Justice Screening Method (EJSM)

- Scores cumulative impacts from multiple health, environmental, and social vulnerabilities
- Identifies areas over-burdened with environmental hazards and socially vulnerable
- Census-tract criteria:
 - Sensitive (hazard) land use;
 - Health risk exposure;
 - Social and health vulnerabilities; and
 - Climate change.



Air Quality Metrics

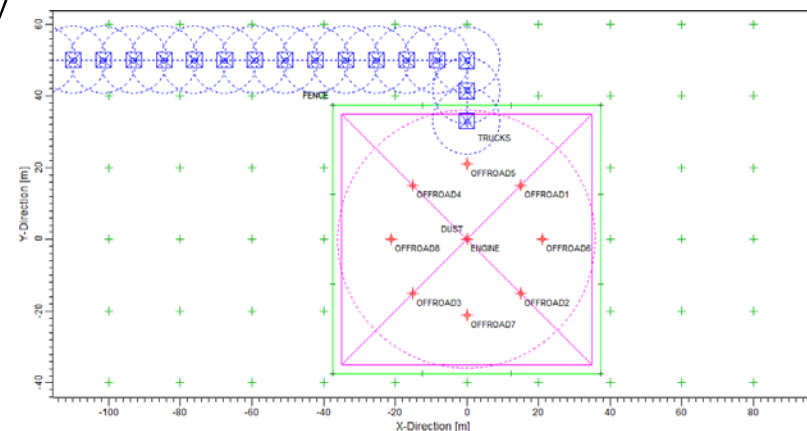
- Four SCAQMD ambient air monitoring stations in the Los Angeles area
 - Compton – 700 North Bullis Road;
 - Long Beach – 2425 Webster Street;
 - Los Angeles – 1630 North Main Street; and
 - Pico Rivera – 4144 San Gabriel River Parkway
- Air Quality Criteria Thresholds
 - Ozone: 1-Hour and 8-Hour Averages
 - PM_{2.5}: 24-hour and annual averages
 - PM₁₀: 24-hour and annual averages

Demographic Metrics

- Eleven (11) GreenZone District Communities
 - Median Household Income
 - Adults with high school diploma
 - Adults with post-secondary education
 - National Violent Crimes (per 100,000 residents)
 - Assault, Murder, Rape, Robbery
 - National Property Crimes (per 100,000 residents)
 - Burglary, Theft, Motor Vehicle Theft
 - Hazard Score
 - Health Score
 - Social Vulnerability Score
 - Climate Vulnerability Score

Programmatic HRA – Waste Facility

- Hypothetical Facility on a 1.4-Acre Parcel
- Air Dispersion Modeling and Health Risk Analysis
 - Material handling (paper, metals, and other recyclables);
 - Shredding and grinding (paper, greenwaste, waste wood);
 - Metal recycling & salvage (scrap, compacting/shredding);
 - On-road trucking (heavy-duty and medium-duty trucks);
 - Off-road equipment (e.g., loaders, forklifts, etc.); and
 - Renewable a synthesis gas-fired engine-generator set



Development Standards: Pro-Health

- Establish 11 Green Zone Districts
- Recycling and Solid Waste Permitting
- “Sensitive Use” Definition
- Specific Use Standards
 - Auto Dismantling and Auto Impound Yards
 - Junk & Salvage and Pallet Yards
 - Recycling Facilities: Collection, Processing
 - Organic and Solid Waste Facilities



Recycling and Solid Waste

- Best Available Control Technology (BACT);
- Setbacks and landscaping (aesthetics);
- Solid walls (noise control);
- Height limits;
- Paving (fugitive dust control);
- Recycling and waste storage;
- Storage of materials, vehicles, and equipment;
- Improved vehicular access (emissions minimization);
- Signage (safety, idling limits, etc.); and
- General site maintenance.



New “Sensitive Use” Features

- Setbacks and landscaping (+ score);
- Open space standards (+ scoring);
- Indoor air filtration [Minimum Efficiency Reporting Value (MERV) 13 or better] (+ score);
- Protective window and balcony design; and
- Solid walls between non-sensitive use facilities (neutral scoring)

Health Risk Reduction - GreenZones

- Cancer Risk Reduction from “Sensitive Use” Features at Recycling Centers
 - Estimated reduction of 9.25 cancer risk cases per million individuals
 - Range of Background cancer risk for Districts of 810 - 1593 cases per million individuals (MATES data)
- Lowered risk but not statistically significant
- Regional influences mask local outcomes

Conclusion of the HIA

- GreenZone Districts will *overall reduction in adverse health outcomes* related to odor, noise, aesthetics, soil contamination, and air quality on neighboring property
- Health Outcomes of the Zoning would be Positively Impact Districts, however more work needs to be done for these areas to significantly raise overall EJSM scores

Questions?

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