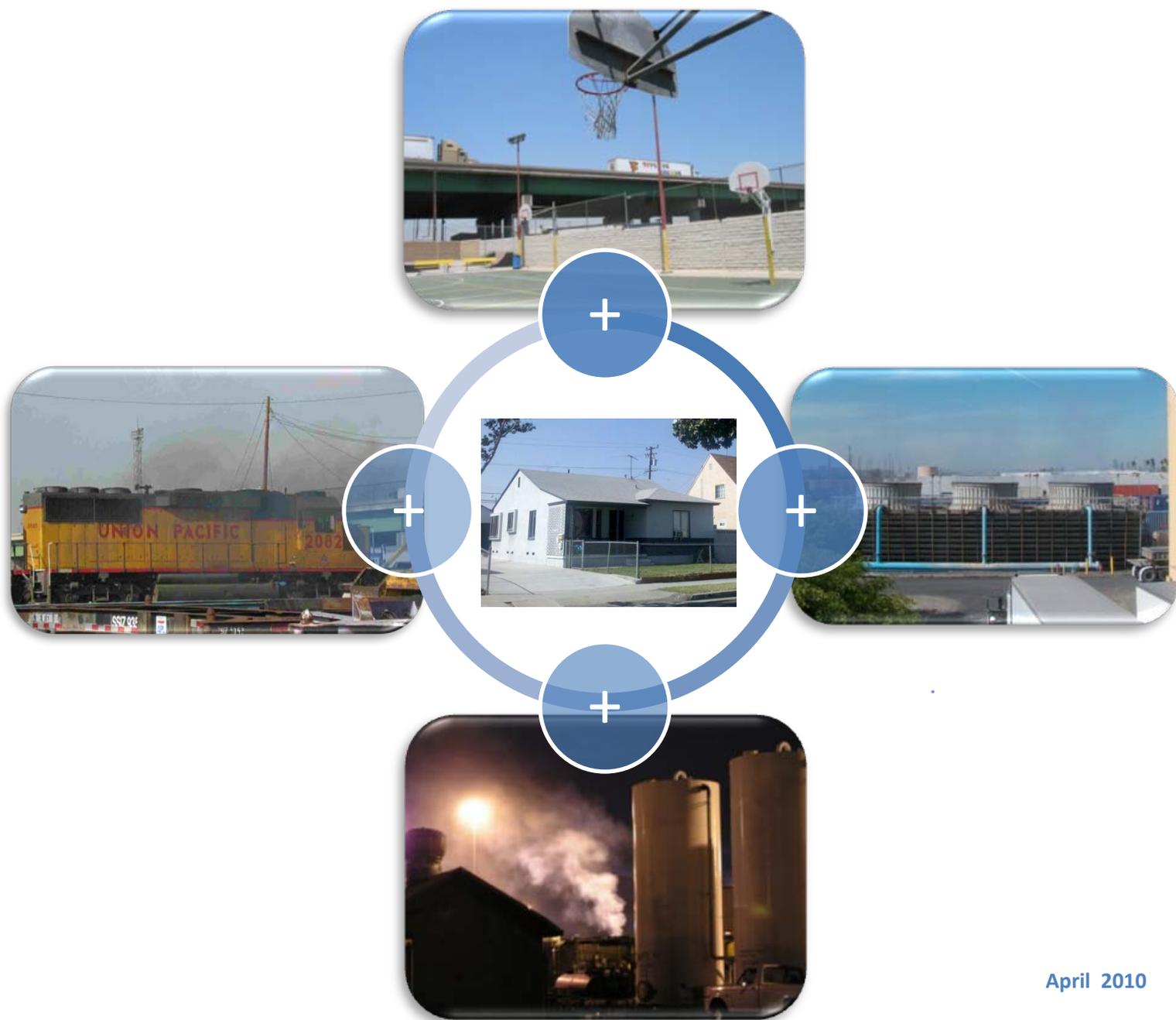


CUMULATIVE IMPACTS:

Recommendation for buffer zones to address
environmental burdens & incompatible
land-uses



Purpose

Cumulative impacts from environmental pollution weigh heavily on environmental justice communities. Such impacts represent the reality of living in burdened communities where socio-economic, environmental and health factors combine to create deleterious effects on the most vulnerable populations.¹ Although the problem of cumulative adverse impacts is complex, the city has the opportunity to alleviate these burdens of excessive pollutants as well as revitalizing the local economy.

Effective policies for environmental health protection must take into account the interrelationship of land use and air quality to protect public health and minimize impacts on existing land use patterns and future land use development. The goal of Section 3 of the City of Commerce Environmental Justice Resolution is to use available environmental and public health data to identify existing and proposed industrial and commercial facilities and areas in residential communities for which compliance, enforcement, remediation, siting and permitting strategies will be targeted to address impacts from these facilities.

Controls on land zoning and subdivision imposed by local governments can be very effective tools for protecting public health and promoting desired economic opportunities. Zoning consists in dividing a locality into areas where the allowed land uses are specified and can be used both to define the kind of land uses permitted and to regulate the permitted uses. Zoning can be used, therefore, to direct future development towards defined objectives (public health and environmental justice).

What Are Cumulative Impacts?

“Cumulative impacts” refers to exposures, public health or environmental effects from the combined emissions and discharges in a geographic area, including environmental pollution from all sources, whether single or multi-media, routinely, accidentally, or otherwise released.

To emphasize the human health effects that may result from the proximity to sources of pollution, creating buffer zones will prevent clustering and disproportionate siting and ensure the protection of public health from numerous emission sources operating near residences, schools, or other sensitive sites. The cumulative impacts of pollutants emitted from both stationary and mobile sources in high concentrations affects the health of people living in nearby residential communities. This exposure can cause specific problems such as breathing difficulties, eye irritation, damage to the brain and central nervous system, and other illnesses. Cumulative impacts may be mitigated through siting and zoning policies that consider, where feasible, appropriate buffer zones to disperse the pollutants before they reach sensitive receptors. Focusing attention on these siting situations is an important prevention action.

Findings & Data

Ground Truthing, A Community Based Research Project

Map 1: Community Mapping Results with Reporting Sites



Sensitive Sites or Sensitive Land Uses: Land uses where sensitive individuals are most likely to spend time, including schools and schoolyards, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities.

Reported Hazards: Any site and or facility that handles and or emits hazardous pollutants into the air, ground or water.

A community-based research project (“Ground Truthing”) was conducted in which members of the community took part in verifying hazard site data held by State databases, providing community-based knowledge about sensitive receptors, and identifying hazard sites in their community. Map 1 shows the hazards & sensitive receptors recognized by state agencies, as well as the 592 member observations of hazardous sites and sensitive receptors.

This study has identified risk, exposure, locations, populations and social vulnerability that may be of regulatory concern for disparate impact using existing and first sources data.

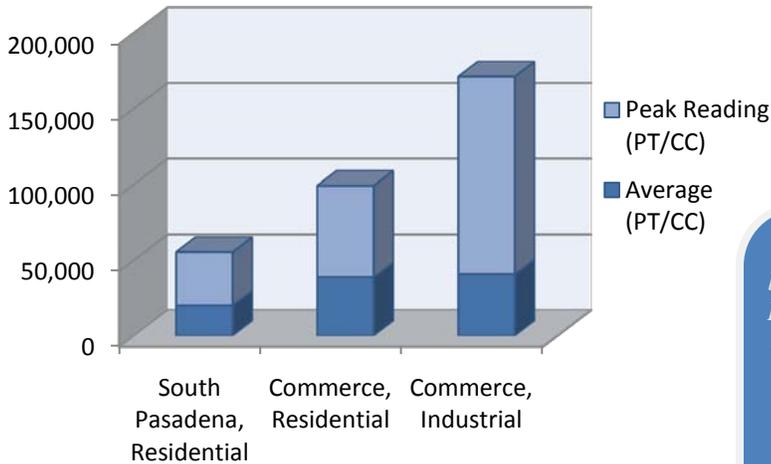


Figure 1

Readings are based on a 7 day average/peak from the 3 sites. The readings were conducted 3 times a day at the same time for all 3 sites. 8 days were attempted; however, it was not possible due to scheduling difficulties.

We can talk about the need for more jobs and small businesses in our urban centers and metropolitan regions. But that conversation must also include the understanding that environmental challenges in our neighborhoods hold back economic growth. Poison in the ground means poison in the economy. . . And unhealthy air means an unhealthy atmosphere for investments. And in many neighborhoods, visible environmental degradation compounds other problems.

-Lisa Jackson, U.S. Environmental Protection Agency

P-track Sampling

Members of the community conducted p-track sampling shown on Figure 1. The p-track sampling device measures ultra fine particulate matter (pollutants) in particles per cubic centimeter (PT/CC). Readings demonstrated that in comparison to South Pasadena, a community about 8 miles away with significantly less industrial uses and vulnerabilities, ultrafine particle readings on average almost doubled in the residential area of Commerce, and more than tripled in the industrial area of Commerce.

Cumulative Impacts, Planning and Policy Decisions

- Consider cumulative impacts – move beyond facility-by-facility regulation to holistic approaches.
- Take into account social vulnerability – consider neighborhood stressors together with exposures/risk.
- Promote community participation – assessments of cumulative impact must involve input and engagement from residents.
- Take meaningful action – precaution dictates that policy-relevant indicators of impact and vulnerability should guide decision-making in order to protect health and eliminate environmental health inequalities.

CARB’s Recommendations on Siting New Sensitive Land Uses

In April 2005 CARB published the, “Air Quality and Land Use Handbook: A Community Health Perspective which recommends that specific sources of pollution are within “Sensitive Land Uses” and calls on local agencies to have specific distances from sources of pollution and land uses outlined in Table 1-1.

In addition, the CARB Handbook contains recommendations for the siting of new sensitive land uses within certain buffer zones. The Environmental Justice Task Force’s recommendation also includes buffer zones for the siting of polluting sources identified in the CARB Handbook near sensitive land uses.

Table 1-1
Recommendations on Siting New Sensitive Land Uses
Such as Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceeded 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	<ul style="list-style-type: none"> • Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts of the ARB on the status of pending analyses of health risks.
Refineries	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a chrome plater
Dry Cleaners Using Perchloroethylene	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility using 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

Policy Recommendation

On August 2 of 2004, the City of Commerce passed resolution 04-38, whereas the City of Commerce committed to addressing environmental health and quality of life issues to its residents as a priority.

To address *Section 3 of Resolution 04-38* with respect to the Environmental and Public Health Data, the Commerce Environmental Justice Task Force recommends the following:

- a. Create a “buffer zone” by implementing a land use and zoning policy to create a ‘minimum separation’ between sensitive land uses and the sources of pollution as recommended by the California Environmental Protection Agency, Air Resource Board (CARB).
- b. Use Methodologies and Strategies presented by Dr. James Sadd, Occidental College, to identify existing and proposed facilities and residential areas in addressing environmental health impacts from land use conflicts.
- c. Ensuring that the environmental health impacts are addressed, convene the City of Commerce Planning Commission, EJ Task Force and researchers from USC Program for Environmental and Regional Equity (PERE) to develop land use strategies for protecting public’s health.

The City of Commerce Planning Commission, the EJ Task Force and researches from USC PERE will produce a formal policy recommendation to the City Council of the City of Commerce, to establish “Buffer Zones”.

This “buffer zone” tool can be used to address environmental health impacts from land use conflicts, such as unhealthy exposure to a polluting source due to the close proximity to a sensitive receptor (e.g. a power plant across the street from an apartment building). Buffer Zones have been developed around residential zoned areas for several types of land uses, such as, a 50 foot buffer between gas stations and sensitive receptors and 1,000 foot buffer between warehousing and sensitive receptors. These buffer distances are recommended by the Commerce Environmental Justice Task Force using ARB’s Air Quality and Land Use Handbook recommendations and include both siting of hazardous facilities and sensitive receptors.

Map 2: Residential buffer zone of 500ft



Map 2

The map on the left is an example of a 500ft buffer zone around residential land uses in the City of Commerce, CA.

Policy Considerations

- **Creating a Green Economy:** To encourage growth, provide financial and planning incentives to attract new uses and operations that would contribute to overburdened communities’ economic vitality and quality of life without increasing the concentration of environmentally hazardous land uses. This can be through investment in clean industries and put people to work in well-paid, green collar jobs through utility and tax rebates, financing and permitting assistance.
- **General Plan:** The establishment of “Buffer Zones” would have an effect on the city’s general plan, therefore specific steps and procedures would need to take place to implement this policy. The EJ Task Force would need to identify the decision-making process and venues for implementation of the recommended policy.
- **Screening Tool:** Use USC PERE’s evidence-based screening tool for planning and land use policy development and decision-making that will allow the City to geographically identify local communities and land use patterns with hazardous uses with cumulative environmental impacts.
- **Conditional Use Permits (CUP):** Establish a CUP process for land uses that create environmental hazards in the buffer zone areas. New uses as well as existing uses that are significantly expanded or altered should be required to obtain a CUP. The CUP should also address the siting of new sensitive uses next to existing hazardous uses to ensure public health and safety.
- **Inspection and Enforcement:** Develop protocols and provide resources for a comprehensive inspection and enforcement program to ensure compliance with applicable conditions, regulations and laws to prevent and reduce concentrations of environmentally hazardous land uses.