

# Neighborhood Knowledge for Change

## The West Oakland Environmental Indicators Project

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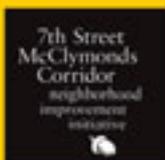
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Cover photograph by Nicholas Cain of children playing at a playground in West Oakland (18th and Campbell) adjacent to a truck transfer and repair facility.

Interior photographs by Nicholas Cain, James Thomas, Meena Palaniappan, and Letricia Cumbertson.



 PACIFIC INSTITUTE  
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## The Partners

The **Pacific Institute for Studies in Development, Environment, and Security** is an independent, non-profit center founded in 1987 to do applied policy research to assist policymakers, communities, and activists with finding sustainable solutions to natural resource and community development problems. Fundamental in our search for sustainable solutions is the need for democratic, participatory decision-making.

The *Community Strategies for Sustainability and Justice* program grew out of the recognition of the need to consider and support communities as a unit for sustainable practices and to empower communities as decision-makers. We initiated this neighborhood indicators project to support Oakland and Bay Area neighborhoods to utilize data in ways that can strengthen meaningful community participation and sustainable development, influence public policies, and impact economic, social, and environmental conditions that contribute to a community's quality of life. Past and current project directors are Steve Costa, Meena Palaniappan, and Arlene Wong.

The **7th St./McClymonds Corridor Neighborhood Improvement Initiative** is a seven-year project that emphasizes resident leadership in the development and implementation of strategies to improve the West Oakland Community. Funded by the William & Flora Hewlett Foundation and managed by The San Francisco Foundation, its goal is to improve the physical, economic, and human conditions in West Oakland. It also seeks to strengthen the ability of residents, associations, religious institutions and organizations to plan and implement community improvement strategies by increasing coordination, improving access to assistance and training, and increasing the availability of money to support specific projects. The Executive Director of the 7th St. Initiative is Allen Edson.

## Acknowledgments

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We are deeply grateful to the West Oakland residents who volunteered their time, ideas, and energy to make this project successful. Their commitment to community change is inspiring, and we hope this document helps them achieve their vision for West Oakland.

### **West Oakland Environmental Indicators Committee Co-Chairs:**

Allen Edson and Mary Lake

### **Coordinating Team Members:** Monsa Nitoto and James "Tim" Thomas

**Neighborhood Task Force/Committee Members:** Aman Bloom, Dedria Carlise, Letricia Cumbertsom, Margaret Gordon, Mary Gilmore, Jimmy Kendow, Cordelia Lewis, Renee Morrison, Rashida Mustafa, Shomari Mustafa, Arthur O'Neal, Phoebe Rossiter, Kathryn Washington, Yolanda Woodard, Ellen Wyrick-Parkinson, and Betty Youngblood

Numerous persons at public and private agencies assisted us in obtaining data for the indicators. They are acknowledged along with the author's biographies at the end of the introduction. Many of these people went beyond the call of duty to answer questions for us and we are very grateful for their time and assistance.





How polluted is the air I breathe?  
Is my neighborhood getting cleaner or dirtier?  
Is it safe for my kids to play outdoors?  
Will I be able to afford a home,  
or is gentrification happening where I live?

Residents of many communities have these questions about the places where they live. In under-resourced communities, the answers to these questions — so critical for the health, safety, and vitality of a neighborhood — are too often impossible to find.

The Pacific Institute began its Environmental Indicators Project (EIP) to answer these questions and give neighborhood residents access to the information they need to revitalize their communities. In 2000, we began by partnering with a neighborhood organization, the 7th St./MyClymonds Initiative, to initiate the EIP in the West Oakland neighborhood of Oakland, California.

We facilitated a community-driven process where residents selected the neighborhood indicators they wanted to track; collected, analyzed, and reported on the selected indicators; and supported the continuing use of this data to advocate for positive change in West Oakland. This report is owed to the dedication of our Neighborhood Task Force members, and the product of two years of work in West Oakland.

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“This is a great time to be a member of the West Oakland community because our city is changing very rapidly. We need to be involved so that the outcomes from this change are what we want and we can enjoy the results. The indicators project is giving us the tools to influence these outcomes.”

Mary Lake,  
West Oakland Resident,  
WO EIP Neighborhood  
Committee Co-Chair



“The indicators were very powerful and very useful in our complex community. We found that the indicator information could be used at any level in government agencies and community based organizations to advocate for change. I hope that other communities see the power of having knowledge to improve their neighborhoods.”

Margaret Gordon,  
West Oakland Resident,  
WO EIP Neighborhood Committee

## What are Indicators?

Indicators convey information about the quality of life in a community: its economic vitality, the strength of its social institutions, the well-being of its members, and the state of its environment. Indicators are discreet packages of information that can be tracked over time to gauge change, and also compared among communities. But indicators are more than just a measurement tool: they reflect the values and concerns of those who select them, and are invested with the hopes that residents have for their communities.

Residents can use indicators to make their case for improving neighborhood conditions, and track whether or not conditions are improving. Thus, neighborhood level indicators can serve as a powerful tool for advocacy and action by helping people communicate a vision of the future, set goals and priorities, and measure progress towards those goals.

## Why Neighborhood Level Indicators?

For decades, we’ve used economic indicators to measure the health of our economy, social indicators to look at the well-being of residents and, more recently, environmental indicators to understand environmental threats and consequences. Most of these indicator projects, however, have operated at scales ranging from international measures down to the city level, with very few projects implemented at a neighborhood level.

Yet within one city exists the spectrum of neighborhoods, from wealthy, mostly residential neighborhoods to working class neighborhoods, which house most of the city’s industries. With such great disparities in even adjacent neighborhoods, **neighborhood level** indicators are a critical tool to help residents tell an

accurate story about their community and the unique issues they face, and determine the necessary steps to improve neighborhood conditions. We have focused on **environmental indicators**, broadly defined, at this level because of the need to integrate environmental measures with the community’s social and economic well being.

*Environmental indicators at the neighborhood level promote social and environmental justice.* For too long, communities have faced inequities in the distribution of services, resources, and the burdens of social and environmental problems. Certain neighborhoods in a region, often poor or people of color communities, bear the brunt of environmental pollution and the health impacts of that pollution, while enjoying few economic benefits. But a clean environment is just as much a basic human right as freedom from discrimination or oppression.

Environmental justice compels us to uncover and address the policies that create the gulf in resources, capacity, and quality of life among communities. Neighborhood environmental indicators, by helping residents understand and articulate these inequities, can empower those most affected to improve their living conditions. Residents can use indicators to educate residents, undertake advocacy efforts, and implement needed policy changes.

*Neighborhood indicators support community revitalization and sustainable development at a local scale.* Often even when there is neighborhood-level data it is not accessible to local residents, leaders, or organizations, is isolated from other issues, and is separated from larger scale planning. Thus, there continues to be a paucity of neighborhood level information and focus, even as neighborhoods are expected to engage in their own revitalization efforts.



West Oakland residents demonstrating in front of a major polluter in the neighborhood, Red Star Yeast, during the Clean Air Festival, September 29, 2001.

Through the use of compelling neighborhood information, local communities can better articulate their concerns and understand challenges, while also gaining the tools they need to influence and coordinate with wider planning efforts. If neighborhoods are to truly benefit from the opportunities of city, regional, and larger scale planning, then they must be able to create and advocate their own vision for their neighborhood. Indicators offer neighborhoods a tool for communicating, informing, and measuring progress towards that vision.

### Working in West Oakland

The West Oakland Environmental Indicators Project (WO EIP) both demonstrates the value of neighborhood indicators for community change and is helping refine and develop the concept of neighborhood indicators for use in other communities.

West Oakland was chosen as the pilot site because of the environmental issues faced by the community, the history of community activism, and the opportunity to support the community revital-

ization efforts facilitated by the 7th St./MyClymonds Corridor Neighborhood Improvement Initiative.

West Oakland is a neighborhood located on the San Francisco Bay with 23,475 residents (2000 US Census).

West Oakland, the oldest district in Oakland, was the final stop on the Transcontinental Railroad and was originally a vibrant and diverse working class neighborhood. By the mid-1900s, African Americans were the most prominent ethnic group in this community, and West Oakland became known as a center of cultural activity and social activism.

After World War II, West Oakland's economy began to decline. Federal Renewal Projects including freeways, public transportation, and a main post office began to fracture the community, displacing residents and weakening commercial activity.

Since the 1980s, the ethnic character of West Oakland has been changing to include a growing population of Latinos and Asian immigrants.

# Why EIP?

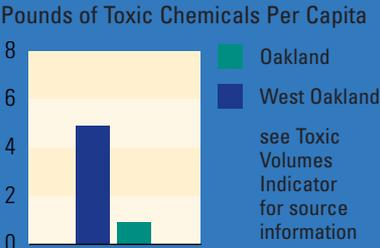
The West Oakland Environmental Indicators Project is a unique collaboration between a research organization and community-based groups. There are three key aspects that distinguish this project:

**1** The process is community driven: Residents collaboratively decide what needs to be measured or reported to further community goals.

**2** We recognize that data is not an end in itself. By ensuring that the information is returned to the community in a useable form, and by providing training and support to help community activists use this knowledge, EIP helps bridge the gap between research and advocacy.

**3** The Indicators project is working to build community capacity to continue the process of data collection and reporting so that the project will become self-sufficient.

**Comparison of Per Capita Toxics Generated in West Oakland and Oakland, 1998**



**Indicators to Action**

**Clean Air for West Oakland**

West Oakland residents face five times more toxics per person than Oakland residents.

Much of this is air pollution: West Oakland’s zip code of 94607 has the highest amount of toxic air pollution of any Oakland zip code.

To take on this problem, Citizens for West Oakland Revitalization (CWOR) created a Clean Air Coalition to help clean the air, protect the health of residents, and promote positive economic development in the neighborhood.

The Coalition recently held the first annual Clean the Air Festival, which was attended by over 600 people, to distribute information and educate the community about clean air issues. Now armed with information, activists are working with elected officials and regulators to begin assessing and improving the air quality in the neighborhood.

Currently, West Oakland is a community whose boundaries are defined by free-ways, where residential and industrial areas intertwine, and where the activities of the Port of Oakland and Army Base are strongly felt. Aside from the rail, freeway, and truck traffic which divide the community, West Oakland residents face a high concentration of brown-fields, lead contamination, illegal dumping, and industrial activity.

West Oakland residents have begun to address these concerns in their Community Revitalization Plan, the 7th St. Initiative.

One of the core visions identified by the 7th St. Initiative’s Community Plan is “An environmentally safe and physically attractive West Oakland,” affirming that West Oakland residents have a right to clean air, water, and land.

**Our Process**

The West Oakland Indicators process began with a strong awareness of the complexity of the issues in West

Oakland and the community actors already engaged in revitalization efforts. From its inception, the project was designed to support a community driven process. The West Oakland EIP established a Taskforce of neighborhood residents who served as the community center/conscience of the project.

Over the course of seven meetings, participants sought to define the term “environment” in the context of West Oakland; identify environmental issues in the community; select what indicators community members would want to measure and track; and determine how such information can be incorporated into current advocacy, policy, education, and organizing work. By July 2000, the Neighborhood Taskforce had agreed on a core set of indicators.

The indicators selected by the Neighborhood Taskforce represent a broad range of environmental concerns, from issues of air quality and toxics, to environmental health, land use, housing affordability, transportation, and even

West Oakland bears the brunt of over 10,000 trucks-trips per day. This photograph shows some trucks parked near homes along Mandela Parkway.





Ten percent of sensitive sites, like schools, hospitals and homeless shelters are within one-eighth of a mile of industrial facilities at high risk for chemical accidents.

civic engagement. These were the areas identified by neighborhood residents in which improvement was needed.

By engaging residents in a collaborative process of identifying community concerns and data needs, indicator development in West Oakland made information more relevant and meaningful to community stakeholders, promoted community learning and capacity building, and helped define community objectives and set priorities to gauge change.

The participatory nature of the indicator process also broadened community involvement beyond the staff of community based organizations to include residents who had previously lacked access to such information.

After the indicators were selected, Pacific Institute's team of researchers collected and analyzed data from city, county, state, and national agencies and compiled the information in the 17 indicator reports that make up the bulk of this report. The methodologies that Pacific Institute researchers used to find, analyze and create reports for each of the indicators are in Appendix A.

In some cases, data was not available either because agencies were not collecting this information or collected infor-

mation was not reliable, consistent, or regularly updated. In these cases, issues that residents identified as being important were not translated into indicators.

We wanted to make sure that after our involvement, it would be easy for community organizations to continue to update the indicator information by accessing data that agencies were collecting on a regular basis. By identifying when data was not available, we wanted to help residents highlight data gaps in their community so that government agencies can begin to collect this information consistently. These data gaps or Indicators Not Included are described in Appendix B.

## Putting the Indicators to Work

Key to the project was to do more than just produce information, but to use it for action. One of the main criteria that community residents used to select indicators was their usefulness in moving forward community goals and supporting ongoing community advocacy efforts.

Indicators are a tool to help support community change. The West Oakland Environmental Indicators Project did not end when the indicators had been



"I always talked about toxic pollution in West Oakland, but now I have the specifics I need — I can now tell people there are 33,000 pounds of acetaldehyde coming out Red Star Yeast every year. This information has helped me be a better advocate for clean air in West Oakland."

**Monsa Nitoto,**  
Vice Chair, 7th St. Initiative,  
Executive Director, Coalition for  
West Oakland Revitalization



“The Indicators Project really gave us the information we needed to fight the environmental and economic racism that people in West Oakland have to deal with on a daily basis. The EIP is an excellent model of a partnership between a research organization and community based organizations.”

**James “Tim” Thomas,  
West Oakland Resident,  
Executive Director, Emergency  
Services Network**

selected and the information collected. In the words of a Neighborhood Taskforce member: “Now it is time to take action.”

In the next phase of the project, begun in 2001, the Neighborhood Taskforce was reconstituted as the West Oakland Environmental Indicators Committee. The group’s next charge was to ensure that the indicators research was integrated into the neighborhood’s planning, advocacy, and education work. Another critical goal was to build community capacity to continue data gathering and advocacy.

The good news is that community residents, policy makers, and agencies have already been able to use indicator information to begin to improve quality of life for West Oakland residents. During this phase, we heard many stories from excited residents and community activists who could now use the indicator data to detail their concerns and propose solutions at community meetings and in policy venues.

To support the bridging of indicators to action in West Oakland, the project partners provided training and tools to West Oakland residents. A few examples of these tools are listed below:

- **Providing technical assistance** The WO EIP Committee selected three on-going West Oakland **community campaigns** to support with further technical assistance and the indicator information. These were: the Clean Air Coalition (to promote clean air and environmental justice), the Anti-Displacement Network (to enhance community stability and protect residents from gentrification), and the West Oakland Asthma Coalition (to help neighborhood residents prevent and control asthma). Information on these campaigns is given in the “Indicators to Action” boxes of the introduction.
- **Disseminating the information** Along with the indicator reports, WO EIP designed **brochures** on groups of indicators relevant to the

Red Star Yeast pollutes West Oakland’s air with over 33,000 pounds of toxic emissions a year.





Freeways surround the neighborhood of West Oakland. These freeways are adjacent to a playing field in the neighborhood.

campaigns to make the information more accessible and understandable to community stakeholders, and help educate residents on community advocacy efforts.

- **Educating the community** The project has developed a **Speakers Bureau** of community residents to promote the understanding and use of indicator information. The WO EIP, in collaboration with the community, developed presentations on the indicators and trained residents to give presentations to community and policy audiences to initiate community education and policy change.
- **Moving policy** WO EIP held a **policy forum** where community residents and policy analysts came together to develop a matrix of policy implications and opportunities to generate positive change on the indicators.

This information has been used to create community goals for different campaigns and meet with local, county, and state policy makers to generate action on policy goals.

- **Working with the media** WO EIP held a media training for community residents and organizations on how to use the indicator research as part of advocacy efforts. Participants were taught how to communicate with the media, how to use media strategically and how to get coverage for community campaigns.
- **Building Community Capacity** An important goal from the outset was to ensure that the community has the ability to update indicator information on a regular basis. The Pacific Institute is training the community on the methods to research, collect, and report on indicator information. We are working with our community partners to develop a system that ensures that indicators continue to be accessible to and used by the community.

### Using this report

This report tells the story of West Oakland that residents wanted to tell. Much of the information in this document has never been reported at a neighborhood level before. And, this

## Indicators to Action Taking Control of Asthma

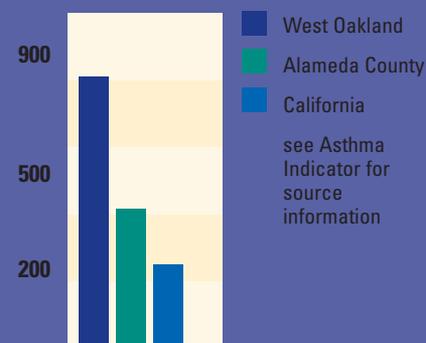
West Oakland children are seven times more likely to be hospitalized for asthma than the average child in the state of California.

Asthma is more than just difficulty breathing: This chronic inflammation of the lungs harms the quality of life for the neighborhood's most vulnerable residents and can lead to serious health problems and even death.

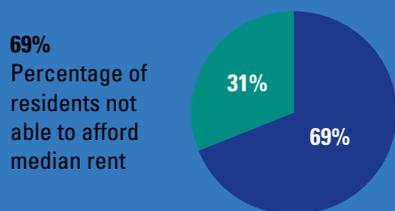
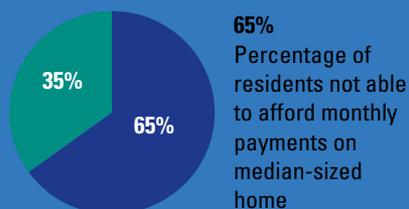
The West Oakland Asthma Coalition, made up of agencies, community organizations, and public interest groups, has been able to use the Asthma indicator and other tools to advocate for better asthma management, more health care resources, and cleaner air in West Oakland.

The Coalition, with indicator information and other resources, is also helping educate families, teachers, and health care providers about asthma in West Oakland and how it can be managed and controlled.

### Age-adjusted Asthma Hospitalization Rates for Children Under 15, 1998



## West Oakland Households in 1999



see Vulnerability to Displacement Indicator for source information

## Indicators to Action Ensuring Housing for All

Few residents can afford to buy a home in West Oakland or afford rent.

As residents of West Oakland need new housing, many may be forced to look for more affordable housing outside the neighborhood.

Displacement or gentrification occurs when long-term low-income residents can no longer afford to buy or rent a home in their own neighborhood. Higher income households from outside the neighborhood move in, displacing current residents and changing the character of the community.

Several community organizations have come together to fight gentrification and are using indicator information to educate residents and push a number of goals, including passage of a Just Cause Eviction ordinance to protect renters. Financial institutions are also using these indicators to demonstrate the need for a community land trust and other investments to provide affordable housing for current residents.



Residents in West Oakland coming together at the Clean the Air festival to demand cleaner air.

information is already being used in policy and advocacy arenas to generate action on issues in West Oakland.

By publishing a comprehensive set of indicators, we hope that more policy makers and residents can begin to use this information to initiate a dialogue among residents, policy makers, and the private sector to improve the quality of life in West Oakland, and create a healthy, safe environment.

This report hopes to support the community revitalization and environmental justice efforts of communities like West Oakland all over the country.

Thus, we describe the details of the Neighborhood Environmental Indicators process, how information was collected, and how it was used.

We hope that this resource leads other community organizers to begin to ask and answer pressing questions about their neighborhood, and obtain the information they need to improve environmental conditions where they live.

A companion to this publication is the Environmental Indicators Project Website ([www.neip.org](http://www.neip.org)), which is a resource for neighborhood indicator data, information on methodology, links to other neighborhood sustainability indicator projects, and other project resources.

This web site can assist residents and activists to build a neighborhood indicators project, and acts as a clearinghouse for neighborhood urban environmental indicators information.

This report includes:

**Indicators in Brief** — This two page section summarizes all the indicators and conveys a key fact about each issue found in our research in West Oakland. It gives an overview of the indicators that neighborhood residents found to be important, and gives a snapshot of some of the issues of concern in West Oakland. This is an excellent stand alone piece that can be used by residents, policy makers, and others to describe the state of the environment in West Oakland.



### Author Biographies and Acknowledgments

— Includes brief biographies of the five main authors and their roles, as well as their acknowledgments to the numerous persons at public and private agencies who assisted them in collecting and analyzing information to produce the indicator reports.

**Indicator Reports** — This section presents the results from the extensive indicator research and analysis undertaken for each of the 17 community selected indicators. Each indicator report includes relevant charts, maps and tables, a description of the indicator, its

relevance and importance to neighborhood residents, and the analysis of that indicator for West Oakland.

Also included is a description of data limitations for each indicator, information for residents who want to get involved in improving West Oakland conditions, and contact information.

**Appendix A: Methodologies** — This Appendix details how information was collected and analyzed to generate each of the 17 indicators presented here.

We hope that this section allows residents, activists, and community organizations in other neighborhoods to reproduce the analysis that was undertaken in West Oakland to create similar indicators to track for their community.

### Appendix B: Indicators Not Included

— This Appendix gives a description of 4 indicators that the Neighborhood Taskforce selected as being important, but were not included because agencies were not collecting the data needed to evaluate these indicators.

The data was either not available or the available data was not reliable, consistent, or regularly updated for the following indicators: Noise Pollution, Neighborhood Blight, Truck Pollution, and Indoor Air Quality.



“The impact on me came from the overall sum of the indicators. This project proves that there is a socially-responsible community of researchers whose interests coincide with the grassroots and who can take part in the process of improvement without taking control.”

Aman Bloom,  
West Oakland resident,  
WO EIP Neighborhood  
Committee

It has been an exciting process to watch the West Oakland community take ownership of indicator information and begin to use it to make this neighborhood more livable for its residents. We are energized by the success of Neighborhood Environmental Indicators in West Oakland, and look forward to the use of indicators to help other communities define and reach their goals. As more neighborhoods begin to ask questions about their quality of life, we hope that this report and the EIP website can help them begin to find answers.

# Indicators in Brief

Air Quality & Health	<b>Air Pollution</b> In 1998, West Oakland zip code 94607 registered 34,103 pounds of toxic air releases by TRI permitted facilities, the highest of any Oakland neighborhood and nearly half of the total Oakland air releases.	13
	<b>Air Pollution Health Risks</b> West Oakland residents had the second highest health risk from air pollution in the city of Oakland in 1997.	16
	<b>Asthma Rates</b> In 1998, West Oakland children were seven times more likely to be hospitalized for asthma than the average child in the state of California.	20
Civic Engagement	<b>Voting Power</b> Less than half of the registered voters in West Oakland voted in the last Presidential election; this is over 15% lower than the voting rate in District 3, and over 20% lower than in the city of Oakland as a whole.	25
Gentrification & Displacement	<b>Vulnerability to Displacement &amp; Housing Affordability</b> In 1999, only 35% of West Oakland residents could afford to buy the median priced home in the neighborhood, and only 31% could afford the median rent on available housing units.	27
	<b>Community Stability &amp; Market Trends</b> Out of the 1,276 West Oakland parcels that were sold from January 1997 to June 1999, nearly a quarter of them (23.6%) were being sold for the second time within two years.	29
	<b>Subsidized Housing Supply</b> While West Oakland is considered saturated in the number of publicly assisted housing units in the neighborhood (over 20% of all public housing in Oakland is located in West Oakland); there has been a decline in the number of private units renting to HUD Section 8 voucher holders.	31



# Indicators in Brief

Physical Environment	<b>New Business Development</b> The last few years has seen a steady increase in new business development in West Oakland, most notably in the retail, services, and advanced services (e.g., computer software, consulting, architecture) sectors.	33
	<b>Illegal Dumping</b> Between January and June 2000, the City of Oakland removed 263 tons of illegally dumped garbage from the streets of West Oakland; per capita, this was three times the amount collected in the rest of city.	35
	<b>Land Use Conflict</b> Nearly 82% of West Oakland residents live within 1/8 mile of an industrial area.	37
Toxics	<b>Neighborhood Toxic Volumes</b> In 1998, West Oakland generated five times more toxic chemicals per per capita than the city of Oakland.	41
	<b>Resident Toxic Exposure</b> The overwhelming majority of West Oakland residents (83%) live in close proximity to at least one of the 403 contaminated or potentially contaminated sites in the neighborhood; this is significantly higher than resident toxic exposure in the rest of Oakland (54%).	45
	<b>Sensitive Area Toxic Hazard Exposure</b> Over 10% of the sensitive sites (schools, hospitals, etc.) in West Oakland are within 1/8 mile of a Priority 1 High Hazardous Facility. In the rest of Oakland, only 2% of sensitive sites face this level of risk.	50
	<b>Lead Poisoning</b> Since 1995, the West Oakland zip code of 94607 has ranked as one of the top three worst zip codes for childhood lead poisoning risk within the entire Alameda County.	53
	<b>Lead Abatement</b> Although West Oakland is considered one of the highest risk areas in Alameda County for lead poisoning, the number of lead abatement projects in West Oakland in 2000 was less than 8% of the total for Oakland.	57
Transportation	<b>Transit Access &amp; Service</b> From 1995 to 1999, the West Oakland neighborhood experienced a 15% reduction in the frequency and range of bus service.	61
	<b>Bikeable Streets</b> West Oakland currently has only 0.95 miles of designated bikeways, although Oakland's Bicycle Master Plan has proposed adding 10 miles of new bikeways.	64

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## About the Authors

**Steve Costa** is a project co-director. Over the past thirty-three years he has been involved in shaping cities through a variety of community organizing roles. From 1995-1999, Mr. Costa served as the Executive Director of Oakland Sharing the Vision (OSV), the non-profit organization established in 1991 to guide the city's comprehensive strategic planning program. He has designed and managed many of OSV's community building, planning and policy development processes including three major Oakland Strategic Plan drafting efforts involving over 3000 residents. He continues to work on several projects in Bay Area as a consultant and is serving as a UCB Visiting Scholar.

**Jeremy Hays** will complete masters' degrees in City and Regional Planning and International Studies at UC Berkeley in the Spring of 2002. His studies have focused on the issues of environmental justice and sustainable community development. Mr. Hays has a background in community organizing, environmental leadership training, and conflict resolution. Mr. Hays lives in the Temescal neighborhood of Oakland.

**Clara Landeiro** is a research associate of the Institute of Urban and Regional Planning at the University of California at Berkeley, and of the Instituto Superior Tecnico at the Technical University of Lisbon. Receiving her PhD in Environmental Planning in Berkeley, Landeiro has worked on the requirements for technical information used in participatory planning models, both in urban and natural resources management contexts, and she is an advocate of community-based consensus planning. She has been involved in efforts to operationalize the concept of sustainable development, both local and globally, through the development of indicators. In addition to local sustainability indicator projects, she is working on a more global scale on the implementation of the European Common Indicators, European Environmental Agency, in the area of urban sustainability indicators.

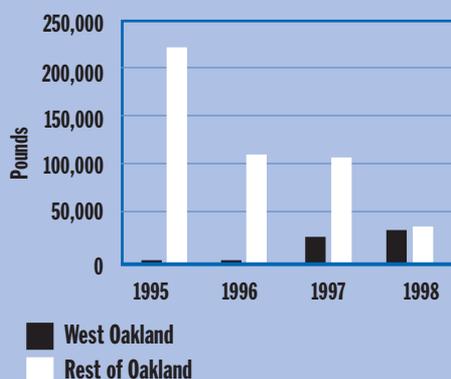
**Meena Palaniappan** is co-director of the Environmental Indicators Project. Her interests include environmental justice, community sustainability, pollution prevention, and international sanitation. Before coming to the Pacific Institute, Ms. Palaniappan worked with the Environmental Defense Fund on sustainable community development, pollution prevention, and environmental justice in the Great Lakes region. In addition, she co-authored the Environmental Defense Fund's Environmental Sustainability Kit. Ms. Palaniappan has also worked with public interest organizations in Madras, India on water pollution issues. She received a Master of Science degree in Energy and Resources from the University of California, Berkeley in May 2000. She also holds an undergraduate degree in Environmental Engineering from Northwestern University.

**Jane Rongerude** completed her masters degree in City and Regional Planning at UC Berkeley in the Spring of 2001 and began her PhD studies in Fall 2001. Her focus has included urban sustainable development, public participation in planning, and communicative planning theory. Ms. Rongerude currently works at the Institute of Urban and Regional Development at UC Berkeley. She lives in the Bernal Heights neighborhood of San Francisco.

**Arlene Wong** is a Senior Associate at the Pacific Institute. Ms. Wong directs the Institute's program on Community Strategies for Sustainability and Justice. Her current work focuses on sustainable communities and environmental justice, including water, brownfields redevelopment, and public participation in natural resource policy. She recently co-authored Pacific Institute's report *Brownfields Redevelopment: Meeting the Challenges of Community Participation*. For the past two years, Ms. Wong has participated in the Oakland Indicators Project to develop framework for five Oakland-based partners to collaborate in supporting indicator development and data analysis throughout Oakland and co-directed the current EIP effort. She received a Master's degree in Public Policy from Harvard in 1995.

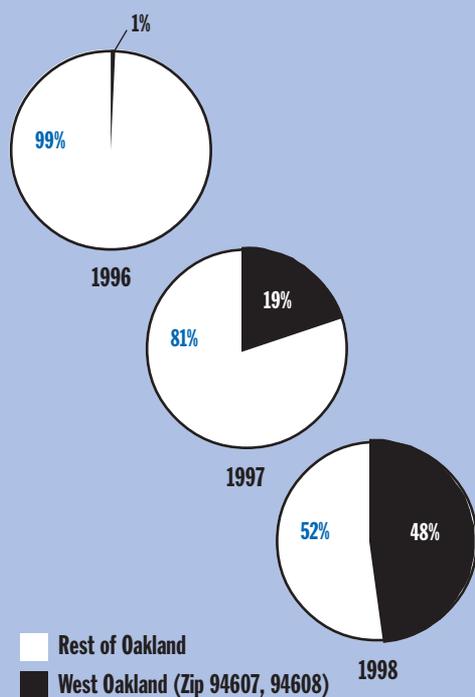
# Amount of Air Pollutants Released by Large Polluters

**West Oakland Relative to Rest of Oakland Trends in TRI Air Emissions, 1995-1998**



Source: TRI Data, 1995-1998, USEPA

**West Oakland's Contribution to Total Oakland TRI Air Emissions**



Source: TRI Data, 1996-1998, USEPA

*In 1998, West Oakland registered 34,107 pounds of toxic air releases by TRI permitted facilities; this was nearly as much as the rest of Oakland combined.*

## The Indicator

This indicator measures the amount of toxic chemicals released into the air<sup>1</sup> by facilities reporting to the Toxic Release Inventory (TRI) in West Oakland. TRI tracks the pounds of air pollution generated per year by large polluters, i.e., those facilities that manufacture or process over 25,000 pounds of the approximately 600 chemicals listed (or 28 categories of chemicals) in the regulations, or those that “otherwise use” more than 10,000 pounds of any listed chemical or category.<sup>2</sup> This indicator is an aggregation of the emissions from TRI facilities reporting in the West Oakland zip code 94607, and the facilities in zip code 94608 that are within Oakland.

## Why Is This Indicator Important?

Air pollution has been of great concern to the West Oakland community for many years. This is a community whose boundaries are defined by freeways, where residential and industrial areas intertwine, and where the activities on the Oakland Port and Army Base are strongly felt. Communities feel the impact of air pollution at many levels, such as reduced visibility, damage to buildings and property, which can contribute to neighborhood blight, and eventual contamination of soil and water which in turn creates other impacts. Perhaps most critically, air pollution can have serious impacts on human health, causing respiratory illnesses from asthma to cancer.

Federal criteria pollutants such as carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM), and sulfur dioxide (SO<sub>2</sub>) which are measured in regions across the nation give us a good picture of the national and regional ambient air quality by measuring the concentration of criteria pollutants in the air we breathe. However, this existing ambient air quality data is not effective at measuring air quality conditions at the local scale due to a sparse monitoring system, the many types of air pollutants that are not measured, and the wide variability in local atmospheric conditions. Air pollution due to air emissions of big industrial facilities (point sources) is only a part of the total air quality picture; however, it can serve as a very rough proxy for local air quality conditions in the absence of better information.

air pollution at the local level from one of the common sources of air pollution—industry. Additionally, we can identify who and where major polluters are. This is especially useful when evaluating trends. For example, the indicator can be used to evaluate whether community efforts in implementing pollution prevention measures in large facilities are being successful. Also, a comparison of how different communities score in this indicator will show whether certain areas take on more of the air emission burden than others, and can target actions to where they are most needed.

## How Are We Doing?

West Oakland has not seen the progress in lowering air emissions that the city of Oakland has seen over the last five years. Since TRI reporting began in 1987, the city of Oakland has shown a great overall reduction in total toxic air releases, which was due both to a decrease in the number of large polluters (from 19 to 8 facilities with reported TRI air releases) and to a decrease in the amount of their air emissions (from 755,991 to 71,785 pounds). Contrary to the city trend, this indicator has actually shown a *rapid increase* in the West Oakland neighborhood since 1996.

Out of a total six “big” polluters (TRI permitted facilities) in the city of Oakland in 1998, three were located in the West Oakland neighborhood (zip codes 94607 & 94608<sup>3</sup>)—Red Star Yeast & Products, Precision Cast Products Inc., and E-D Coat Inc. The amount of air releases by all three West Oakland TRI facilities during 1998 totaled 34,107 pounds, almost the same amount that was released by the rest of Oakland during the same year.

In 1998, out of all Oakland zip codes, the West Oakland zip code 94607 registered the highest amount of toxic air releases (34,103 pounds) by TRI permitted facilities (followed by zip code 94603, with 29,135 pounds).

This indicator presents us with a very troublesome trend for West Oakland zip code 94607. From a total of 1,320 pounds of toxics released in 1996, the indicator has rapidly increased more than 30 fold—with 34,103 pounds being released in 1998. Similarly, we note that the West Oakland community is bearing an increasingly higher proportion of the city’s total TRI air releases, from 1% of total Oakland TRI air releases in 1996 to almost half (48%) of the city’s emissions in 1998!

## Additional Findings

In 1997, a regional comparison of this indicator for all 484 zip codes in the nine county Bay Area shows that the West Oakland zip code 94607 had the 24<sup>th</sup> highest level of TRI air releases. It is important to note that a great part of these West Oakland TRI air releases contain chemicals known or suspected to cause cancer. In comparing pounds of carcinogens emitted within a zip code area, the West Oakland zip code of 94607 ranked as the 4<sup>th</sup> highest contributor of TRI carcinogen air emissions in the whole Bay Area in 1997. Red Star Yeast was the major contributor of carcinogenic air emissions in West Oakland, mainly from its emissions of acetaldehyde.

## Data Limitations

The indicator *Amount of Air Pollutants Released by Large Polluters* only tracks stack and fugitive air releases from TRI permitted facilities. This is a very incomplete picture of air quality in the community. It is only a fraction of the total amount of air emissions released in West Oakland. Other contributors to air pollution are: point sources such as small businesses and industries not required to file a TRI report (e.g., dry cleaners), exhaust from mobile sources (e.g., trucks, cars, railways, ships), and pollution from residential and commercial areas (e.g., fireplaces, outdoor grills, lawnmowers, and heating and cooling units of commercial buildings).

**Bay Area Top 5 TRI Facilities  
Emitting Carcinogens, 1997**

Facility	City	Zip	TRI Carcinogens (Pounds)
Fleishman's Yeast Inc.	Oakland	94603	50,605
Strongwell	San Jose	95133	35,703
Owens-Corning	Santa Clara	95050	31,736
Red Star Yeast	Oakland	94607	23,200
Dow Chemical Co.	Pittsburgh	94565	17,483

■ West Oakland  
Source: TRI Data, 1997, USEPA

These small pollution sources not tracked under TRI can, when combined, have a significant impact on air quality, especially in urban areas. Point sources account for about 23% of all air toxic emissions and TRI data represent less than half this category.<sup>4</sup> For example, small businesses and residential and commercial units can account for as much as 50% of particulate matter in the air, whereas emissions from mobile sources account for about 75% of carbon monoxide pollution nationwide.

Local air quality is affected not only by local toxic air emissions but by regional toxic air emissions, by local atmospheric conditions, and by those pollutants resulting from reactions between different airborne chemicals. Thus, a better indicator of local air quality conditions would be one that would rely on ambient air measures, measuring concentration of pollutants in the air rather than emissions. At this point in time, the ambient air quality data is still insufficient to effectively depict local air quality conditions. However, technological advances in recent years and efforts of local agencies and NGOs are advancing rapidly in this direction.

## What Can You Do About Air Pollution?

Local community organizations have been active in air quality issues. They have been putting pressure on local manufacturing facilities to implement cleaner technologies or to opt for closure or relocation of their activities. Organizations have also demanded better ambient air quality monitoring that can more accurately assess residents' exposure to toxic chemicals in the air.

Other entities have been also involved in studying ways to improve overall air quality and mitigate air pollution in West Oakland. The Port of Oakland and the city of Oakland have been working with organizations such as Coalition for West Oakland Revitalization (CWOR), West Oakland Commerce Association (WOCA), and others on air pollution issues. An example of a current effort to quantify and abate non-TRI sources of air pollution is the diesel study commissioned by the city of Oakland, whose objective is to estimate diesel emissions generated in West Oakland and to devise strategies to mitigate these emissions in the community.

## Contact Information for Additional Resources

*Bay Area Air Quality Management District (BAAQMD)*  
Air Pollution Complaints: 1-800-334-ODOR  
Report Smoking Vehicles: 1-800-EXHAUST

BAAQMD has information on how you can help clean the air and daily air quality conditions and forecasts by calling 1-800-HELPAIR.

*City of Oakland Environmental Services Hotline*  
(510) 238-7630

*Coalition for West Oakland Revitalization (CWOR)*  
(510) 451-2967

*Envirofacts*  
<http://www.epa.gov/enviro/html>

*Pollution Prevention Information Clearing House (PPIC)*  
<http://www.epa.gov/opptintr/library/libppic.html>  
(202) 260-1023

*Clean Air Technology Center (CATC)*  
<http://www.epa.gov/ttn/catc>  
(919) 541-0800 (English)  
(919) 541-1800 (Spanish)

CATC serves as a resource on areas of air pollution prevention and control technologies, and provides public access to data and information on their use, effectiveness and cost.

## Notes

<sup>1</sup>This includes both stack and fugitive releases. Fugitive air releases of toxic chemicals can result from many sources such as loading, unloading and transfer of products, normal leakage from equipment in use (valves and fittings, pumps, etc), formulation and packaging of products, and losses during periodic process-related cleaning operations. Chemicals from point sources that are not captured by pollution control devices exit as stack emissions.

<sup>2</sup>Manufacturing facilities reporting to TRI are those in Standard Industrial Classification (SIC) codes 20-39 (or Federal facilities in any SIC code), and that have the equivalent of 10 full-time workers. These facilities include chemicals, petroleum refining, primary metals, fabricated metals, paper, plastics, and transportation equipment. Recently, other industrial sectors have been added.

<sup>3</sup>In zip code 94608 only one TRI facility falls within the City of Oakland boundary; other facilities in that zip code are located in Emeryville. Only emissions from the Oakland 94608 facility were counted when estimating West Oakland and Oakland total releases.

<sup>4</sup>National Air Quality and Trends Report, 1996.

# Air Pollution Health Risks to Neighborhood Residents

## Relative Risk Rankings

Oakland Zip Code	Relative Risk Ranking (where 1 is the highest risk)		
	1995	1996	1997
94603	1	1	1
94607	5	4	2
94601	2	2	3
94608	4	3	4
94621	3	-	-
94662	6	5	-

### West Oakland Zip Codes

## Ranking of TRI Facilities Posing Air Pollution Health Risks in Oakland, 1997

Facility	Zip Code	Ranking
Fleishmann's Yeast Inc.	94603	1
Red Star Yeast & Products	94607	2
Owens-Brockway Glass Container	94601	3
Pressure Cast Products Corp.	95050	4
Precision Cast Products, Inc.	94607	5

### Facilities in West Oakland

Sources: TRI Data, 1997, USEPA; OPPT's Risk-Screening Environmental Indicators Model: Version 1.0, USEPA 1999

*The West Oakland zip code of 94607 ranked as the zip code with the 2nd highest health risk from air pollution in the city of Oakland in 1997.*

## The Indicator

This indicator measures the relative health risks posed to residents from chronic exposure to toxic air emissions from facilities reporting to the Toxic Release Inventory (TRI) in a given zip code.<sup>1</sup>

Rather than representing an absolute measure of risk, the indicator value represents a *relative* measure of the health risks to which residents in different zip codes are exposed. A relative risk ranking value of one means that residents in that zip code area are exposed to the highest air pollution health risk relative to all other zip codes considered.

The air pollution health risk indicator takes into account the amount and toxicity of the chemicals released by “big polluters” (TRI permitted facilities), pathway-specific exposure potentials, and the size of the general population potentially exposed.

## Why Is This Indicator Important?

Air pollution—from the air releases of toxic chemicals by manufacturing facilities to other sources such as motor vehicles—can cause severe health problems in populations exposed to it. These problems can range from a “minor” itchy throat and breathing problems, to more serious effects such as cancer, long-term nerve damage, or even death.

The indicator *Air Pollution Health Risks to Neighborhood Residents* gives us important information regarding the relative health risks that residents in the West Oakland zip code 94607 face due to the air pollution caused by “big polluters” compared to other zip codes.

Overall health risks from air pollution are difficult to measure in part due to the still inadequate ambient air quality information at the local level (e.g., for the West Oakland neighborhood). In other words, without local ambient air quality information, we don't know exactly what is in the air we breathe. Exposure is also affected by a number of factors: weather patterns, population characteristics, etc. However, using a risk screening model we can estimate the relative health risks posed by air releases from a small but significant group of air pollution emitters—specifically, those manufacturing facilities reporting to TRI.

## All Bay Area TRI Facilities Ranked for Carcinogen Risk-Related Impacts, 1997

Ranking	Facility	City	Zip Code
1	U.S. Pipe & Fndy. Co.	Union City	94587
2	Pacific Steel Casting Co.	Berkeley	94710
3	Hosokawa Bepex Corp.	Santa Rosa	95407
4	Fleishmann's Yeast Inc.	Oakland	94603
5	Wyman Gordon Invstmt. Castings	San Leandro	94577
6	ECS Refining	Santa Clara	95050
7	Acme Packaging Corp.	Bay Point	94565
8	Red Star Yeast & Prod.	Oakland	94607
9	Seagate Tech Inc.	Fremont	94538
10	Owens-Corning	Santa Clara	95050
11	Owens-Brockway Glass Container	Oakland	94601
12	Owens-Brockway Glass Container	Hayward	94541
13	Chevron Prods. Co.	Richmond	94801
14	Titanium Hearth Technologies	Vallejo	94590
15	Crain Ind.	San Leandro	94577

Ranking	Facility	City	Zip Code
16	Criterion Catalyst Co.	Pittsburg	94565
17	Leybold Materials Inc.	Morgan Hill	95037
18	United Defense LP	Santa Clara	95050
19	Dow Chemical Co.	Pittsburg	94565
20	Exxon Co. USA	Benecia	94510
21	Moyno Oilfield Prods.	Fairfield	94533
22	Kaiser Cement Corp.	Cupertino	95014
23	USS-Posco Ind.	Pittsburg	94565
24	Signode Western Ops.	Pittsburg	94565
25	Bordon Chemical Inc.	Fremont	94538
26	Precision Cast Products Inc.	Oakland	94608
27	Strongwell	San Jose	95133
28	Bell Ind.	Mountain View	94043
29	Catalytica Bay View Inc.	East Palo Alto	94303
30	Tosco Refining Co.	Martinez	94553

### Facilities in West Oakland

Source: TRI Data, 1997, USEPA; OPPT's Risk-Screening Environmental Indicators Model: Version 1.0, USEPA 1999

The ability to estimate these risks is especially important to people living next to industrial areas, where concentrations of these harmful air pollutants tend to be higher. It is certainly important to West Oakland, where a majority of the population lives within 1/8 mile of an industrially zoned area.

By ranking different areas according to their relative level of health risk, and by identifying “big polluters” and the relative risk they pose to residents living nearby, this indicator allows communities and governments to target actions and resources to the most needed areas. However, this indicator should always be tracked along with the indicator *Amount of Air Pollutants Released by Large Polluters*, which measures the total amount of TRI air emissions by zip code area. This ensures that the lessening of the relative health risk (i.e., a lower risk ranking) in a certain area is indeed the result of reduced toxic emissions, and not due to the worsening of conditions in other neighborhoods.

### How Are We Doing?

Compared to other Oakland zip codes and Bay Area zip codes, West Oakland has been progressively increasing the air pollution health risk it poses to residents. The West Oakland zip code 94607 ranked as the second highest risk zip code in the city of Oakland in 1997. In recent years, indicator results for West Oakland (zip codes 94607 and 94608<sup>2</sup>) show a disturbing trend. From 1995 to 1997, West Oakland has increased its relative risk ranking from the fifth to the second highest risk zip code in all of Oakland. When compared to 484 Bay Area zip codes, West Oakland has been progressively ranking at higher health risks since 1995. For example, West Oakland zip code 94607's risk ranking moved from 57<sup>th</sup> to 17<sup>th</sup> place between 1995 and 1997! With the exception of zip code 94608 (where the Oakland contributing TRI facility is actually in the West Oakland neighborhood), no other Oakland zip code has registered an increase in this indicator during that period.<sup>3</sup>

The air pollution health risk model captures two “big polluters” in West Oakland: Red Star Yeast and Precision Cast Products. Red Star Yeast in particular contributes greatly to West Oakland’s relative ranking as a higher-risk area. Red Star Yeast was the second highest risk facility in the city of Oakland in 1997.<sup>4</sup> That year, this facility ranked 18<sup>th</sup> amongst all the facilities in the Bay Area that reported to TRI. One should note that the results for the air pollution indicator *Amount of Air Pollutants Released by Large Polluters* for the city of Oakland also follow the same order for the same period, i.e. zip code 94607 had the second highest amount of TRI air emissions in the city of Oakland (and Red Star Yeast was the major emitter).

### **Additional Findings**

This health risk indicator ranks the total health risk posed by all TRI chemicals that can be modeled. However, an analysis of the risk posed only by those chemicals that are known or suspected human carcinogens<sup>5</sup> gives us another, more worrisome picture of how high (*i.e., how bad*) West Oakland ranks in terms of cancer risks to which its residents are exposed. In 1997, the West Oakland zip code 94607 ranked as the 8<sup>th</sup> highest cancer risk zip code within all 484 zip codes of the nine Bay Area counties. That same year, Red Star Yeast, Inc. posed the 8<sup>th</sup> highest carcinogen risk of all the TRI facilities in the Bay Area.

### **Data Limitations**

The indicator *Amount of Air Pollutants Released by Large Polluters* only reports on relative health risks associated with toxic emissions from TRI permitted facilities, and takes into account toxic chemicals for which toxicity weights are available.<sup>6</sup> It is an estimate of effects on the surrounding population, not including the employees at a facility.

The existing ambient air quality monitoring network is still insufficient to provide adequate measures of air quality conditions at the community scale (e.g., West Oakland). An improvement of this monitoring system by adding more monitors and monitoring more pollutants, and a better quantification of hazardous air pollutants from sources other than TRI facilities, would help to better estimate the total air pollution health risks to which neighborhood residents are exposed. Similarly, increased knowledge about exposure pathways and toxicity for additional chemicals would also lead to a more accurate estimation of health risks.

### **What Can You Do About Air Pollution Health Risks?**

Several local community organizations have been active in air quality issues and have paid particular attention to health impacts from air pollution. They have been putting pressure on local manufacturing facilities to implement cleaner technologies, studying closure and relocation options, and have also asked for better monitoring of air pollution (ambient air quality) at the neighborhood scale.

Public agencies and other groups have been also involved in studying ways to improve air quality and mitigate air pollution health risks for West Oakland residents. The Port of Oakland and the city of Oakland have been working with community organizations on air pollution measures that can be implemented to decrease local air pollution levels. The Alameda County Health Services and Children’s Hospital have been studying the incidence respiratory problems in children and providing education packages to help the community address this serious problem.

### **Contact Information for Additional Resources**

*California Department of Health Services, Environmental Health Investigations Branch*  
[http://www.dhs.ca.gov/deodc/ehib/EHIB2/contact/health\\_concerns.html](http://www.dhs.ca.gov/deodc/ehib/EHIB2/contact/health_concerns.html)

The Environmental Health Branch provides information and training to residents and local organizations about hazardous substances that may exist in their community, and exposure and health issues related to those chemicals. They have been working on health education programs to make communities understand more about preventing or mitigating health effects from exposures to hazardous substances in the their community. Information on a variety of topics can be found on their “Who do I contact” web page listed above.

*National Institute of Environmental Health Sciences*  
<http://www.niehs.nih.gov/external/faq/alpha.htm>

NIEHS provides information on a variety of health topics including environmentally related diseases.

*US Environmental Protection Agency*  
USEPA's Air Risk Information Support Center (Air RISC)  
<http://www.epa.gov/ttnuatw1/hapindex.html>  
(919) 541-0888

USEPA Concerned Citizens  
<http://www.epa.gov/epahome/citizen.htm>

USEPA Concerned Citizens Protecting our Children  
<http://www.epa.gov/epahome/children.htm>

The USEPA is another important source of information. The web pages listed above and the Air RISC hotline can be particularly useful to community residents.

## Notes

<sup>1</sup>TRI facilities can generally be defined as manufacturing facilities (SIC codes 20-39, or Federal facilities in any SIC code) with the equivalent of 10 full-time workers, that manufacture or process over 25,000 pounds of the approximately 600 designated chemicals or 28 chemical categories specified in the regulations, or “otherwise use” more than 10,000 pounds of any designated chemical or category. Other industrial sectors have been added recently and are also required to report to TRI if they meet certain conditions.

<sup>2</sup>In zip code 94608, only TRI air emissions from Precision Cast were counted to estimate totals for Oakland and West Oakland. All other facilities reporting TRI air emissions within this zip code are located in the City of Emeryville.

<sup>3</sup>Caution must be exercised when interpreting results for this indicator. For some zip codes, particularly those that fall within more than one city boundary, the estimated total releases taken into account in the risk ranking may vary depending on the universe of analysis. For example, Alameda County or Bay Area rankings of relative health risks from toxic air releases by zip code will reflect the relative risk posed by all facilities located in that zip code (e.g. total of releases for all facilities in 94608 zip code), regardless of the city where they are located.

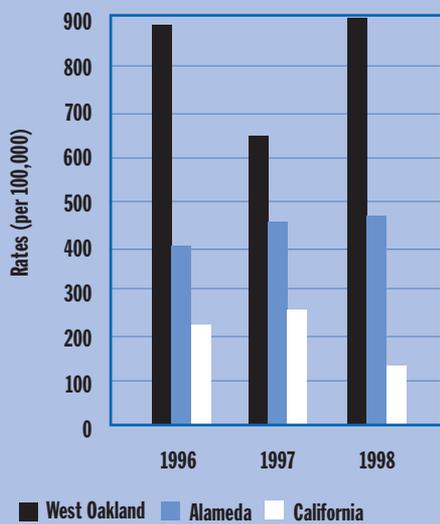
<sup>4</sup>Results incorporating 1998 data are expected in the near future when the second version of EPA's model is released. RSEIM Version 2 will also allow the calculation of relative risks for other media besides air releases, e.g. water and soil.

<sup>5</sup>Chemicals considered known or suspect human carcinogens are based on OSHA criteria (USEPA, 1998) and are listed in the 1997 TRI Public Data Release. Known human carcinogens are those that have been shown to cause cancer in humans; suspect human carcinogens have been shown to cause cancer in animals.

<sup>6</sup>This indicator takes into account most TRI chemicals, those for which toxicity and exposure pathways are known – for example, of the total 604 chemicals on the 1997 TRI Chemical List, RSEIM models 405 chemicals (those for which there are toxicity weights), which account for 98% of the reported pounds for all on-site releases in 1997 (OPPT, 1999).

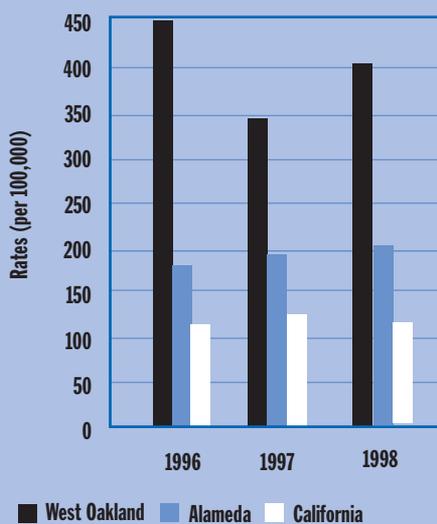
# Children Hospitalized With Asthma

**Age-Adjusted Asthma Hospitalization Rates for Children Under 15**



Source: Patient Discharge Data, 1998; 1990 Census

**Age-Adjusted Asthma Hospitalization Rates for All Ages, 1996-1998**



Source: Patient Discharge Data, 1998; 1990 Census

*In 1998, West Oakland children were seven times more likely to be hospitalized for asthma than the average child in the state of California.*

## The Indicator

This indicator measures the number of hospitalizations of children under 15 years of age who are hospitalized due to asthma (with asthma as their principal diagnosis) in a given year as a proportion of the total number of children in that age group.<sup>1</sup> It is a proxy for the incidence rates of acute asthma episodes. This indicator is calculated as an age-adjusted rate,<sup>2</sup> so comparisons can be made between different areas with populations of different age structures. This rate is reported per hundred thousand people (/100,000) and per zip code.

## Why Is This Indicator Important?

Asthma is becoming a serious problem for an increasing number of communities. The Centers for Disease Control and Prevention (CDC) estimates that approximately 2.2 million Californians suffer from asthma and about 40,000 are actually hospitalized each year because of asthma. Asthma affects children in particular, and is the leading cause of hospital admissions for young children in California.

Asthma is a chronic, inflammatory lung disease characterized by recurrent breathing problems. Symptoms include shortness of breath, chest tightness, wheezing, and coughing. People with asthma can have acute episodes and may have to be hospitalized. Sometimes episodes of asthma are triggered by allergens, although infection, exercise, cold air, and other factors are also important triggers.

Research has shown that there is an association between poor air quality and the incidence of asthma. There are numerous studies analyzing the health impacts of poor ambient air quality and its effects on increasing the incidence of asthma. Other studies analyze the effects of indoor air quality on asthma rates, although it has been difficult to develop good indicators of indoor air quality.

Results obtained for the *Amount of Air Pollutants Released by Large Polluters*<sup>3</sup> indicator show an increasing amount of air emissions in West Oakland where as the city of Oakland revealed an opposite trend in recent

years. In addition, West Oakland is affected by numerous other sources of air pollution such as enveloping freeways, the presence of numerous smaller polluters, high volumes of truck traffic, and the presence of the Oakland Port and Army Base.

Asthma is aggravated by exhaust from diesel vehicles, which contains 41 Toxic Air Contaminants as listed by the state of California, such as benzene, arsenic, and acetaldehyde.<sup>4</sup> Diesel exhaust may also increase the incidence of other respiratory diseases, particularly in young children and the elderly. Many constituents of diesel exhaust are also carcinogens. According to the 1997 Vision 2000 Maritime Development Environmental Impact Report, the projected 2010 daily total of truck trips during peak weeks through West Oakland is 22,210 for the Reduced Harbor Fill Alternative (Option D).<sup>5</sup> This is a significant increase (225%) from the 1996 total of 9,870 trucks in peak weeks.<sup>6</sup> Since many of these trucks use diesel engines, diesel exhaust levels will also rise significantly in West Oakland. Because of the projected increase in truck traffic, West Oakland faces increasing diesel exhaust and health problems it causes.

All of these pollution impacts are warning signs that the prevalence of asthma in this community may be particularly serious and may be worsening. Thus, it is important to be able to see how community health is being affected by increasing air pollution, and whether efforts undertaken by the different agencies, policy and advocacy groups are having positive results in curbing asthma rates.

Locally, some studies have reported on the health status of this community, and they have concluded that age-adjusted asthma hospitalization rates for all ages in Alameda County were significantly higher than state rates,<sup>7</sup> and well above Healthy People 2000 goals. Healthy People 2000 goals are set by an interagency work group within the US Department of Health and Human Services. They define the national agenda related to leading health indicators such as asthma and set ten-year targets for each indicator.<sup>8</sup> Also, a study published by the Regional Asthma Management Program (RAMP) on age-adjusted asthma hospitalization rates for the period 1994-1996 showed that the West Oakland Zip Code 94607 was among the worst six zip codes in all of Alameda County. The RAMP study also found that West Oakland had an asthma hospitalization rate approximately two times higher than the Healthy People 2000 target (HP 2000).

Asthma is a disease that affects different age groups unevenly. Younger children are more frequently affected than older children.<sup>9</sup> Thus, the best way to track asthma rates is to use age-adjusted rates that are weighted according to the age distribution of a standard population,<sup>10</sup> rather than using a simple rate (all age groups) or even age-specific rates. Age-adjusted rates allow us to compare indicator values (an aggregate value for all ages or age-specific values) for different time periods even if the age composition of a neighborhood undergoes great change. Also, age-adjusted rates allow for comparisons with other communities that may have very different age distributions. We are reporting standardized rates for comparison purposes and not the actual number of cases.

The present indicator offers a way of estimating the impact of asthma in young children by tracking age-adjusted hospitalization rates for children under 15 years old. It allows us to monitor how young children in West Oakland are affected by and coping with asthma.

### 1998 Age-Adjusted Hospitalization Rates and Actual Hospitalizations for Oakland Zip Codes, Alameda County, and California

Zip Code	Geographic Area	Children <15 Rate per 100,000	Children <15 # Hospitalized	All Ages Rate per 100,000	All Ages # Hospitalized
94601	Fruitvale	850	110	429	206
94602	Holy Names	472	28	190	54
94603	98th Ave.	1,012	78	401	127
94605	Oak Zoo	1,104	96	435	172
94606	Highland	664	61	288	112
<b>94607</b>	<b>West Oakland</b>	<b>899</b>	<b>46</b>	<b>405</b>	<b>87</b>
94608	Emeryville	1,423	59	527	112
94609	North Oakland	1,347	47	502	90
94610	Grand Lake	536	22	152	32
94611	Piedmont	NA	13	108	40
94612	Downtown	2,340	26	825	60
94618	Piedmont/Rockridge	NA	11	NA	11
94619	Merritt Colledge	585	28	240	61
94621	Coliseum	952	73	499	145
County	Alameda	475	1,228	208	2,633
State	California	124	14,531	124	37,953

■ West Oakland

Note: "Number of Patients" were estimated using SSN to identify a patient and discount multiple visits from a single patient in one year. Discharges without SSN were all counted and are part of the totals shown.

Source: Patient Discharge Data, 1998; 1990 Census

## How Are We Doing?

The indicator table shows a comparison of the 1998 results for all Oakland zip codes, Alameda County, and the state of California. In 1998, the asthma indicator for the West Oakland zip code 94607 ranked among the worst seven zip codes in Oakland with a value of 899 per 100,000<sup>11</sup> (i.e., out of a group of 100,000 children under age 15, there were the equivalent of 899 hospitalizations during this particular year). This was almost double the value of the indicator for Alameda County, which registered 475 hospitalizations per 100,000 children under age 15, and more than seven times higher than the asthma rate in the state of California (124 per 100,000 children under age 15) for that same year. The 1998 age-adjusted rate for the West Oakland zip code is also four times higher than the Year 2000 target rate set by Healthy People 2000 for children under 15, which is 225 per 100,000.

The indicator results for the period 1996-1998 show high asthma rates in West Oakland. Although this analysis does not show a consistent time trend for the indicator for West Oakland, we see that asthma rates for West Oakland children are consistently higher than the same rates for Alameda County and the state of California, and significantly higher than Healthy People 2000 goals.

In the 1995-1997 period, Alameda ranked as the second worst county, among all counties in California, in terms of asthma hospitalization rates for children under 15.<sup>12</sup> This fact, coupled with the fact that the rate in West Oakland (and in most Oakland zip codes) is significantly higher than in Alameda County as a whole,<sup>13</sup> indicates that West Oakland's young children, and indeed children throughout the city of Oakland, are suffering greatly from asthma.

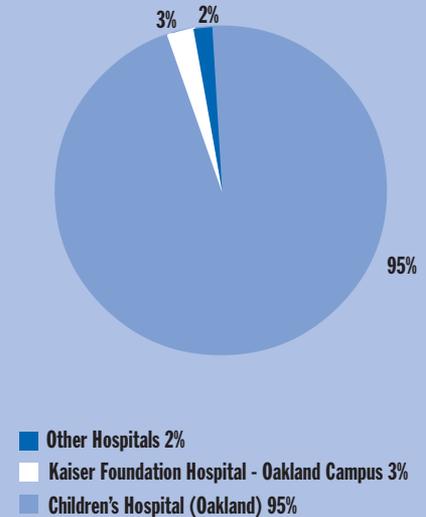
If we look into how the community is doing as a whole, the age-adjusted hospitalization rates for all ages do not show a much better picture for West Oakland. Although significantly lower than the hospitalization rate for young children, the asthma hospitalization rate for all ages in 1998 was 405 per 100,000 in the West Oakland zip code 94607, which was among the top seven worst zip codes in Oakland. This rate was approximately two times higher than the corresponding rate for Alameda County, and well above the Healthy People 2000 target rate of 160 per 100,000.

Where are residents seeking assistance? Oakland Children's Hospital handles almost all (95%) of the asthma hospitalization cases for Oakland children under 15. Oakland residents of all ages are also most likely to be hospitalized at Oakland Children's, which registers the highest number of hospitalizations due to asthma (53% in 1998) of any medical facility in Oakland.<sup>14</sup> In 1998, a significant number of asthma hospitalizations of older residents<sup>15</sup> in Oakland took place at Highland (40%) and Summit (20%) Hospitals.

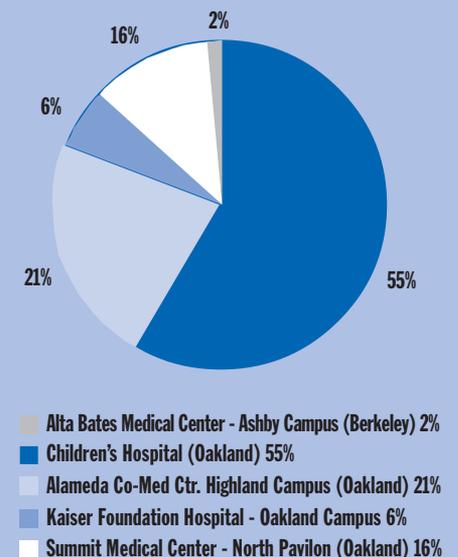
Another piece of information that should be monitored by the community is the age-adjusted rate for African American children under age 15. The RAMP analysis of age-adjusted rates for different race/ethnic groups (1994-1996) showed that African American children in Alameda County had a very high rate (1,001 per 100,000) when compared with other groups—approximately three times higher than Latino children (343 per 100,000) who ranked second, and more than 6 times higher than white children (164 per 100,000).

Our analysis of West Oakland's zip code 94607 during the period 1996-1998 revealed that these rates remain high. West Oakland African American children under age 15 registered an average age-adjusted rate for this three-year period of 979 per 100,000, with a rate of 1,019 per 100,000 in 1998,<sup>16</sup> which is well above Healthy People 2000 objectives (225 per 100,000).

### Asthma Hospitalizations for Oakland Children Under 15 Years of Age, 1998



### Asthma Hospitalizations for West Oakland Residents of All Ages, 1998



**Note:** Percentages are proportion of discharges of patients with asthma as the principal diagnosis per medical center. Oakland total correspond to discharges attributed to patients residing in zip codes starting with 946XX (including Emeryville zip code 94608).

## Data Limitations

The indicator only tracks the number of acute cases of asthma in children, i.e., those that required hospitalization. It does not tell us how many children have asthma (prevalence), or how many people have to be treated for asthma (not hospitalized, but through private doctors or outpatient clinics).

The indicator is based on the Office of Statewide Health Planning and Development (OSHPD) Patient Discharge Database (Version B) for California, which records information on patients that have been hospitalized in a given year with asthma as the principal diagnosis, including address and zip code information, age, race, etc. Reporting errors associated with this database are hard to estimate, and may include inaccurate reporting of a patient's age, race, address, or other information. These reporting errors will introduce errors into this analysis as well.

Of particular significance are errors associated with a zip code level analysis. We know, for example, that incorrect zip code recording occurs (e.g., the zip code reported does not correspond to any existing US Postal Zip Code), some zip code information is not reported (zip code unknown), or some patients cannot be associated with a specific zip code (homeless patients). All these errors result in an undercount of zip code hospitalization rates. An additional source of error is associated with the need to estimate population values for each zip code as OSHPD data is only disaggregated at the zip code level.<sup>17</sup>

Finally, we should point out that the indicator values (age-adjusted rates) were calculated using 1990 Census Data available at the zip code level, instead of the population during the year reported. This was due to the fact that population estimates per zip code, disaggregated by age and race, for the years 1996-1998 were not available. Indicator results should be recalculated once 2000 Census data population demographics by zip code become available.

Estimation of the number of patients hospitalized for asthma involves another type of error associated with the identification of individual patients.<sup>18</sup> OSHPD uses patients' social security numbers (SSN) to identify multiple visits of a single patient. In calculating number of hospitalized patients, only one record was counted for each patient hospitalized. However, records for which there was no SSN recorded were all included in the estimates, thus resulting in some potential over-counting of the number of patients hospitalized (because some of these non-SSN records may refer to the repeated hospitalization of the same patient). On the other hand, when a patient's zip code was unreported, this would result in a slight undercount of hospitalizations, because only records with zip code information were tabulated.

Although age-adjusted rates (such as the one that constitutes this indicator) allow for a direct comparison of asthma rates for different communities or different time periods, this is only true if the rates to be compared are calculated using the same standard population. The California 1990 Population was used as the standard population so that comparisons with previous studies about Oakland could be made. However, this limits our ability to compare West Oakland results with areas outside California (which are unlikely to use the same standard population) and, in particular, it limits in part our ability to make direct comparisons with the national target rates established by Healthy People 2000 and Healthy People 2010 (although these targets remain widely used as policy goals). The Center for Disease Control is advocating for comprehensive reporting and tracking guidelines that allow for consistency and comparability in age-adjustment procedures among users of health-related data.<sup>19</sup>

## What Can You Do About It?

Resources are available to community residents who wish to learn about asthma and get involved in helping the community to combat asthma. There are a multitude of organized and individual efforts that can contribute to the improved health of West Oakland children and residents in general.

Numerous local community organizations and other public interest groups have joined together to form the West Oakland Asthma Coalition. The West Oakland Asthma Coalition's mission is to improve the quality of life for West Oakland residents affected by asthma through community education, partnerships, and advocacy for a healthy environment. They are working to educate the West Oakland community about asthma prevention and treatment, improve ambient air quality, improve indoor air quality or the quality of indoor air in schools, bring increasing medical assistance at the community level (e.g., a new community "asthma clinic"), and participate in education and training of teachers and children on how to take control of asthma.

At the individual level, there are a number of actions that West Oakland residents can take to combat asthma and improve the quality of life in their community. If you or someone in your family have asthma, probably the most important step you can take is to ask your doctor for an asthma action plan so that you know how to prevent asthma symptoms and how to respond in case of an asthma attack (this may include taking medicines on a daily basis, learning how to reduce asthma triggers in your everyday environment, and knowing where to go and what to do in case of a sudden asthma attack).<sup>20</sup>

## Contact Information for Additional Resources

*West Oakland Asthma Coalition*  
Brian Thomas, (510) 451-4906

*Children's Hospital Oakland Asthma Start Program*  
Mindy Benson, (510) 428-3885 x 4145  
Provides free medical care for children 0 to 5 years of age who qualify without insurance with "persistent" asthma.

*Alameda County Public Health  
Department's Asthma Start Program*  
Paul Cummings, (510) 577-7082  
Provides asthma education, in-home visiting, and resources such as vacuums and mattress covers for children 0-5 years old with asthma.

*Nurses in Action*  
(510) 346-7034  
Provides asthma education, in home visiting, and resources such as mattress covers for children 0-5 years old with asthma.

*Regional Asthma Management Program*  
[www.rampasthma.org/resources.htm](http://www.rampasthma.org/resources.htm)

*American Lung Association*  
[www.californialung.org](http://www.californialung.org)

*USEPA - Asthma and Indoor Environments*  
[www.epa.gov/iaq/asthma/index.html](http://www.epa.gov/iaq/asthma/index.html)

## Notes

<sup>1</sup>The indicator is based on data from the Patient Discharge Database, Office of Statewide Health Planning and Development (OSHPD), and on 1990 Census Data. Patient Discharge Database Version B was used to acquire data on patients hospitalized with Principal Diagnosis ICD\_9 codes within the range 493.01 through 493.99 (i.e. those codes for asthma).

<sup>2</sup>Using 1990 California population as the standard population.

<sup>3</sup>Tracked by the Toxic Release Inventory (TRI).

<sup>4</sup>Natural Resources Defense Council. *Exhausted by Diesel- How America's Dependence on Diesel Engines Threatens Our Health- Table 1 Substances in Diesel Exhaust Listed by the CalEPA as Toxic Air Contaminants*. April 1998. (<http://www.nrdc.org/air/transportation/ebd/chap2.asp>)

<sup>5</sup>Fleet and Industrial Supply Center, Port of Oakland. FISCO/Vision 2000 Disposal and Reuse Final EIS/EIR: Table 3.10 2010 Daily Truck Traffic During Peak Week. July 1997. Oakland, CA. Appendix J.2 pp. 28.

<sup>6</sup>Fleet and Industrial Supply Center, Port of Oakland. FISCO/Vision 2000 Disposal and Reuse Final EIS/EIR: Table 3.2 1996 Peak - Daily Truck Traffic During Peak Week to Rail Yard. July 1997. Oakland, CA. Appendix J.2 pp. 19.

<sup>7</sup>California County Asthma Hospitalizations Chart Book (CDHS, August 2000) - data analyzed refers to the period 1995-1997.

<sup>8</sup>The Healthy People target for asthma hospitalizations for all ages in the year 2000 is 160 hospitalizations per 100,000 people. Healthy People 2000 also set a target rate for children under 15 years old at 255 hospitalizations per 100,000. Healthy People 2010 goals have already been proposed.

<sup>9</sup>Thus, hospitalization rates for asthma for children under 15 years old are usually higher than rates for all ages because asthma will affect younger children more than people of older ages.

<sup>10</sup>Age-adjusted rates are weighted averages of specific age-specific rates. The weight for a given age group is the size of the corresponding age group in the standard population divided by the total standard population for all ages of interest (Healthy People 2000 Statistical Notes, 2001).

<sup>11</sup>Note that indicator values were calculated using 1990 Census Tiger data and 1996-1998 OSHPD data; they should be recalculated using populations estimates per zip code for the corresponding years (1996-1998) once 2000 Census population demographic information is available at the zip code level.

<sup>12</sup>California County Asthma Hospitalization Chart Book, California Department of Health Services, 2000.

<sup>13</sup>In fact, asthma rates in almost all Oakland zip codes are higher than in Alameda County.

<sup>14</sup>Alameda County Medical Center (Highland Campus) ranked second with 19% of all hospitalizations of Oakland residents.

<sup>15</sup>People 15 or older.

<sup>16</sup>Higher than the age-adjusted rate for West Oakland young children of all race/ethnic groups (899/100,000).

<sup>17</sup>A detailed discussion of errors associated with the Zip-block equivalence and population estimates per zip is presented at [www.oseda.missouri.edu/plue/geocorr/](http://www.oseda.missouri.edu/plue/geocorr/).

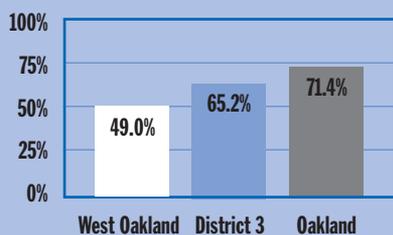
<sup>18</sup>OSHPD only recently acquired the capability of distinguishing single patients from visits (discharges) and this report shows some results obtained using number of patients hospitalized rather than number of hospitalizations (discharges).

<sup>19</sup>In 1998, Department of Health and Human Services issued a policy statement directing all DHHS agencies to use the year 2000 projected U.S. population as the standard population.

<sup>20</sup>Adapted from the Asthma Control Top Ten List by Harold J. Farber, MD and the Regional Asthma Management and Prevention Program.

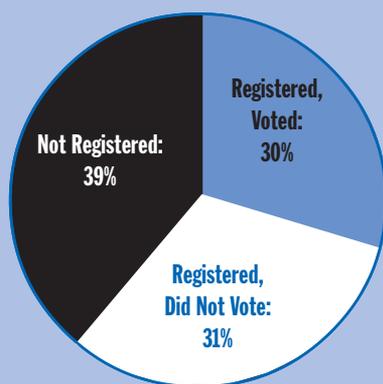
# Voting Power

**Voting Rates: Percentage of Registered Voters Who Voted, November 2000 Election**



Source: City of Oakland, Office of the City Clerk, 2000

**Voting Patterns in West Oakland, November 2000**



Source: Claritas, 1999; City of Oakland, Office of the City Clerk, 2000

*Less than half of the registered voters in West Oakland voted in the last Presidential election; this is over 15% lower than the voting rate in District 3, and over 20% lower than in the city of Oakland as a whole.*

## The Indicator

The voting power indicator tracks the number of adults who were registered to vote and who voted in any given election. This indicator looks at presidential election years, primaries, and non-presidential election years beginning in 1990. This indicator also compares the number of registered voters to the potentially eligible adult population in a community.

## Why Is This Indicator Important?

Tracking voter turnout for elections is a simple way to measure the extent to which local citizens are engaged in their community, and generally how they feel about government at a particular moment in time. Political enfranchisement is a vital part of an engaged, empowered, and effective community.

Voting is one of the fundamental avenues available for individuals to participate in government decision-making. Elections decide mayoral races, school board representatives, and ballot measure initiatives—all of which can be critically important in determining the future of a neighborhood. Higher voter turnout can reflect a sense of efficacy and responsibility within a neighborhood, and can lead to greater accountability by local representatives. Low voter turnout may be a signal that community residents feel disillusioned or frustrated by the political process.

Improving West Oakland's voting rates—to comparable levels in the city or the more affluent Council Districts—would strengthen the political voice of the neighborhood and would expand the number of people making important local decisions. A neighborhood that votes has the opportunity to hold elected officials accountable for their performance. West Oakland deserves to have a powerful voice at the ballot box. Voting power measures how close the community is coming to having that voice.

## How Are We Doing?

Citizen participation in electoral politics can be influenced by a variety of factors, including: economic conditions, the popularity of candidates, and the resonance or contentiousness of certain issues. In general, voter turnout is greater for presidential election years.

For both the presidential elections and the non-presidential elections, voter turnout in West Oakland has increased slightly since 1990. For our analysis, we define voting rates as a measure of the percentage of registered voters who voted in an election year. For primary and non-presidential elections, voting rates show an overall improvement of nearly 8%. Presidential elections show an increase of nearly 5% over the same period.

Despite these improvements, the voting rates in West Oakland are still more than 15% lower than the voting rates in its Council District (District Three), and more than 20% lower than the City of Oakland. While the voting rates in District Three are getting closer to those of the City of Oakland, voting rates in West Oakland are falling further behind.

Voting power is also affected by another important factor: the number of West Oakland adults who are registered to vote. While voting rates give us a sense of the number of registered voters that turn out to vote, a measure of registered voters gives us a sense of the number of potentially eligible West Oakland adults who are *not* registered to vote. Almost 40% of West Oakland adults are not registered to vote. These may be individuals who could vote, but have chosen not to register. Others may be ineligible to vote, including: individuals without citizenship status or those on parole for felonies. This broader measure of voting power shows that nearly 70% of the adults living in West Oakland did not vote in the November 2000 election.

### Data Limitations

Voter participation is only one measure of civic engagement. Other important factors include volunteerism and local participation in neighborhood events. Some communities track how many neighbors know each other's names and whether or not residents trust each other to watch over their children or their property. These types of measures come from community surveys, either by phone or door-to-door. Although no such survey has been implemented, the community may want to do a survey in the future in order to learn some of this important information.

### What Can You Do About Voting Power?

There are a number of possible approaches to improving local voter turnout. Some communities have successfully used door-to-door voter registration drives in an effort to improve voting rates. Other communities have created partnerships between civic organizations and housing providers to include voter registration forms with all new rental paperwork. During election time, holding get-out-the-vote rallies and providing transportation services to take people to the polls can help increase voting rates.

Efforts aimed at increasing broader civic engagement in the community are also important. These types of strategies include leadership institutes to increase the number of candidates from the neighborhood, candidates' night events, and other community building activities that can lead to greater political activism. Community-based organizations could target new citizens and individuals leaving parolee status for outreach campaigns about voting rights.

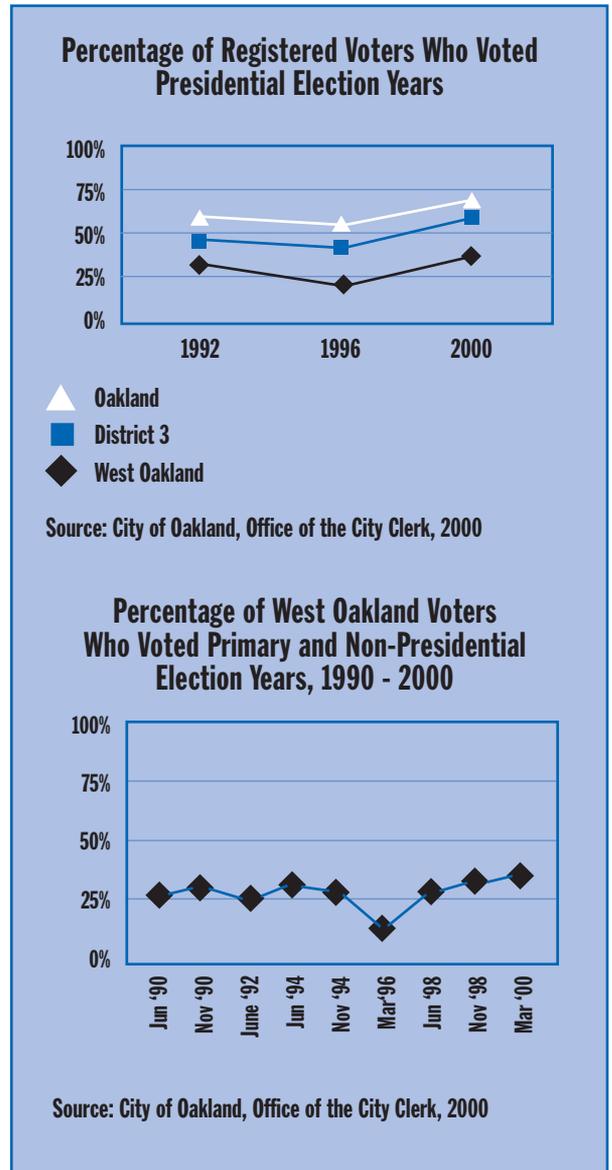
### Contact Information for Additional Resources

*Coalition for West Oakland Revitalization (CWOR)*  
(510) 451-2967

*The 7<sup>th</sup> Street/McClymonds Corridor  
Neighborhood Improvement Initiative*  
(510) 835-0833

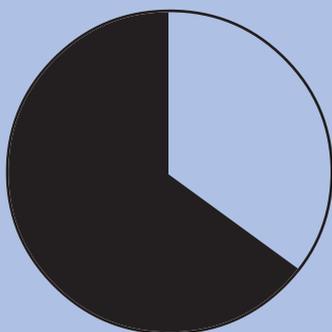
*League of African American Voters*  
(510) 536-7140

*League of Women Voters*  
(510) 869-4960

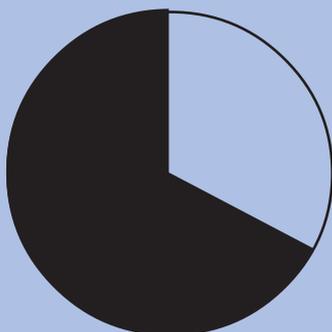


# Vulnerability to Displacement

## West Oakland Households in 1999



Percentage of residents not able to afford monthly payments on median sized home: 65%



Percentage of residents not able to afford median rent: 69%

Affordability assumes housing and rental costs do not exceed 30 percent of household income.

Housing costs are estimated as payments on a 30-year fixed mortgage at 8.5 percent with a 10 percent down payment (it does not include the downpayment itself, closing costs, property taxes, or insurance).

Sources: Median priced home figures based on Multiple Listing Service sales data for 1999; Median rent figures based on asking rents on available units listed with Homefinders in 1999; 1999 income estimates from Claritas, Inc.

*In 1999, only 35% of West Oakland residents could afford to buy the median priced home in the neighborhood, and only 31% could afford the median rent on available housing units.*

## The Indicator

This indicator tracks the percentage of West Oakland residents who can afford current neighborhood housing costs. It takes into account the going rent on available apartments and the sale price of single-family residences in the area “inside the freeways.” It then compares these costs to the incomes of West Oakland residents. The resulting indicator shows the percentage of residents who can afford the median priced home or the median priced rent.

## Why Is This Indicator Important?

This measure gives an important indication of how vulnerable residents of West Oakland are to displacement and gentrification. Residents who cannot afford to buy a house in the neighborhood or cannot even afford the going rent are likely to be displaced from the neighborhood when they need new housing. For example, if a family grows and needs a larger home but cannot afford one in the neighborhood, they will be forced to relocate. The same is true for tenants who get evicted from a home because the landlord is raising the rent or selling the property.

There are many reasons people may choose to change residences. However, if a large portion of the people who live in West Oakland cannot afford the going housing costs, then those people will be forced to leave the neighborhood when they have to move. This is an especially important indicator to watch as the Bay Area real estate market continues to rapidly transform neighborhoods.

## How Are We Doing?

West Oakland is vulnerable to displacement. In 1999, only 35% of residents could afford to buy the median priced home in West Oakland. Only 31% of residents could afford the median rent on available housing units.<sup>1</sup> As West Oakland residents need new housing, many will be forced to look for more affordable housing outside the neighborhood.

This indicator only tracks 1999 housing costs, but other data show that housing costs have been steadily rising for years. In fact, the increase in housing costs

from 1999 to the first seven or eight months of 2000 has been the largest leap in recent history. The median rent increased more than 30% and the median sale price of homes jumped more than 60% in constant dollars. Barring a similar leap in the income of West Oakland residents, the year 2000 indicator will show that the neighborhood is more vulnerable to displacement than ever.

There are a number of possible reasons for this trend. A shortage of housing across the Bay Area has driven up prices in neighborhoods throughout the region. Job creation and wage increases in West Oakland may not be keeping up with rising costs. West Oakland's neighborhood assets and relatively lower-cost housing also may be attracting new people to the neighborhood who bid up rents and home sale prices. We need to do more research to understand what forces underlie this upward trend in housing costs relative to income in West Oakland. Clearly, if the number of people who cannot afford housing in the neighborhood continues to grow, the neighborhood could change dramatically.

### Data Limitations

This indicator does not measure the number of people who are actually displaced from the neighborhood. It simply measures vulnerability based on residents' incomes and current housing costs. It does not directly incorporate subsidized housing, but the EIP indicator *Publicly Subsidized Housing* can be cross-referenced. This is an early-warning indicator. If displacement happens and new residents with higher incomes move in, over time the indicator will no longer show a vulnerability to displacement. Finally, the data on income is from census tract projections, while the data on housing costs is from listed units inside the freeways. There may not always be perfect overlap, as not all available units are listed.

### What Can You Do About Vulnerability to Displacement?

Many organizations in West Oakland are pursuing strategies that will enable people to stay in the neighborhood and have formed an Anti-Displacement Network. They would like to see more affordable housing built and an increased supply of affordable rental housing. These organizations are advocating for innovative housing options, such as community land trusts and homebuyer assistance programs to help put quality homeownership within the reach of current West Oakland residents. These organizations also want to ensure that West Oakland residents have access to good jobs to guarantee that these residents will grow and prosper as the neighborhood grows and prospers.

### Contact Information for Additional Resources

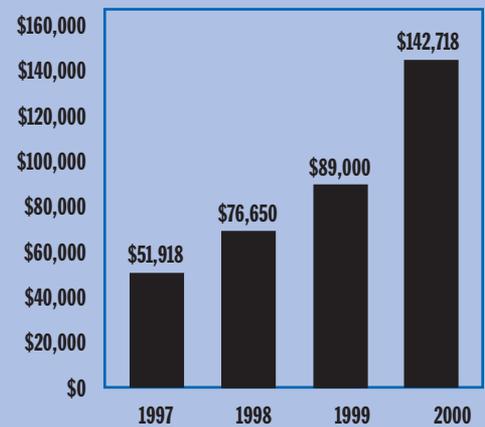
Anti-Displacement Network:

- *Emergency Services Network*  
James Thomas, (510) 747-1090
- *Coalition for West Oakland Revitalization*  
Lonnie Johnson, (510) 451-2967
- *Jubilee West*  
Josephina Vasquez, (510) 839-6776 x 22
- *7th Street/McClymonds Corridor Neighborhood Improvement Initiative*  
Allen Edson, (510) 835-0833
- *Alliance for West Oakland Development*  
Jabari Herbert, (510) 663-0363

### Notes

<sup>1</sup>Affordability assumes housing costs do not exceed 30% of household income. Although low income residents often pay a greater proportion of their income for housing costs, we will use the convention of 30% of income to signify affordability.

**West Oakland Single Family Residences  
Median Sales Price (in 1999\$)**

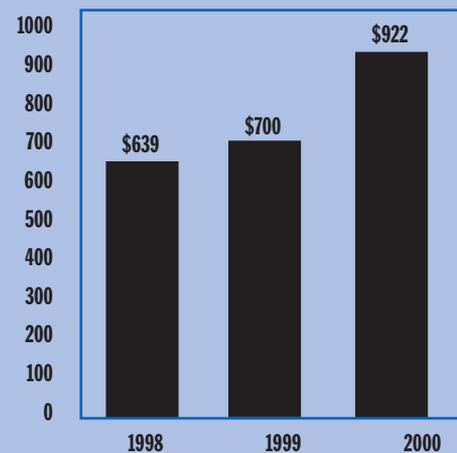


Units sold:	1997	1998	1999	2000*
	51	62	69	80

\*Year 2000 is January 1 through July 30 only

Source: Base data from Multiple Listing Service sales

**Available Rental Units in West Oakland  
Median Rent (in 1999\$)**



Number of listings:	1998	1999	2000*
	74	86	63

\*Year 2000 is January 1 through July 30 only

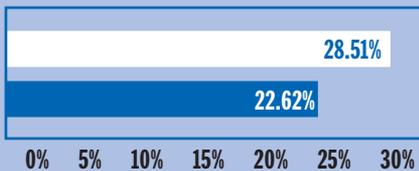
Source: Base data from Homefinders listings

# Community Stability

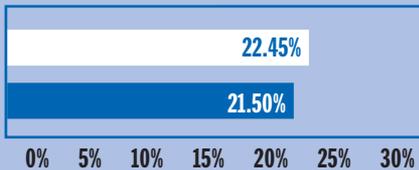
## West Oakland - City of Oakland Turnover Comparison

Percentage of Parcels  
Sold in Each Category  
January 1997 - June 1999

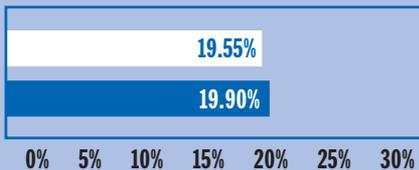
### Industrial



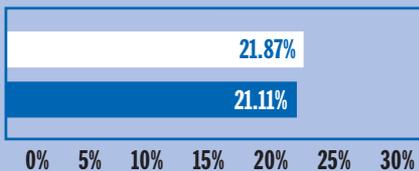
### Residential



### Commercial



### Total Parcels



West Oakland  
 City of Oakland

Source: Metroscan, 1999

*Out of the 1,276 West Oakland parcels that were sold from January 1997 to June 1999, nearly a quarter of them (23.6%) were being sold for the second time within two years—compared to the city of Oakland as a whole whose rapid turnover rate for the same time period was only 18.0%.*

## The Indicator

This indicator monitors the sale of parcels of land in West Oakland by showing the percentage of parcels that are bought and sold over a 30-month period. It breaks down the information by land uses and compares the turnover rates on different types of land. The indicator also measures *rapid turnover*: the number of parcels that have turned over two times in less than two years. Finally, the indicator looks at turnover rates in the entire city of Oakland and compares these to the data for West Oakland.

## Why Is This Indicator Important?

This measure gives an important indication of community stability in West Oakland. High property turnover rates mean a large portion of the land in the neighborhood is being bought and sold. This would suggest that the neighborhood is changing. New businesses may be moving in. New types of housing may go up. Employment opportunities, traffic patterns, city services, and the look of the neighborhood may all change.

High rates of rapid turnover suggest that investors are buying parcels and then selling them a short time later for a profit. This could drive up land prices in the neighborhood and affect employment and housing opportunities. The changes associated with high turnover rates could benefit members of the community, but they could also lead to gentrification and displacement. Turnover rates are a measure of change in a community, and are thus an important indicator of community stability in West Oakland. This indicator allows concerned residents and community-based organizations to keep an eye on what type of parcels are being sold, how many, and how quickly.

## How Are We Doing?

General turnover rates in West Oakland are just slightly higher than in the city of Oakland, but the rapid turnover rates were significantly higher in the neighborhood than in the city as a whole. The current data for the indicator

is drawn from a 30-month period from January 1997 to June 1999. During this time, 21.9% of all the land parcels in West Oakland changed hands. Industrial parcels posted the highest rates of turnover, at 28.5%. During the study period, 22.5% of residential parcels and 19.6% of commercial parcels were bought and sold. The turnover rates in West Oakland were a little higher than in the city as a whole, with the exception of commercial parcels. (See the Turnover Comparison chart.)

Out of the 1,276 West Oakland parcels that were sold from January 1997 to June 1999, nearly a quarter of them (23.6%) were being sold for the second time within two years. This represents a relatively high rate of rapid turnover. The rapid turnover rate in the city for the same time period was only 18.0%. A high rapid turnover rate may indicate that there is some degree of land speculation occurring in West Oakland. Investors may be buying parcels in the neighborhood with the intention of turning around and selling them for a quick profit. Excessive land speculation can be a serious threat to community stability. This rapid turnover indicator will be important to watch as the neighborhood implements community improvement projects and attracts growing interest from investors.

### Data Limitations

This indicator tells us about the amount of parcels that were bought and sold in the neighborhood, but it does not give us any information about what happened on the parcels. For example, we do not know if the turnover on parcels means new employment or housing is coming into the area, or if ownership is simply changing hands. The indicator does not measure improvements on parcels or who buys and sells them.

### What You Can Do About Community Stability?

There are organizations in West Oakland that are working for community stability. They want to make sure that as the neighborhood changes, residents' lives are not dramatically interrupted. These organizations are working with developers, investors, and local government agencies to attract investments in the neighborhood that will contribute to the long-term stability of the area and enhance the quality of life for all residents. In addition, community groups have discussed the importance of new developments setting aside some resources to mitigate any negative effects they might have on the stability of the West Oakland community. Other groups of residents have discussed the possibility of setting up a community land trust in West Oakland. A land trust would buy properties and commit them to community serving uses, thereby contributing to neighborhood stability.

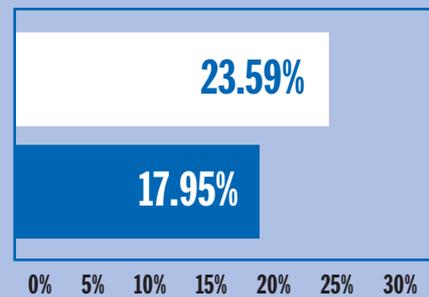
### Contact Information for Additional Resources

Anti-Displacement Network:

- *Emergency Services Network*  
James Thomas, (510) 747-1090
- *Coalition for West Oakland Revitalization*  
Lonnie Johnson, (510) 451-2967
- *Jubilee West*  
Josephina Vasquez, (510) 839-6776 x 22
- *7th Street/McClymonds Corridor Neighborhood Improvement Initiative*  
Allen Edson, (510) 835-0833
- *Alliance for West Oakland Development*  
Jabari Herbert, (510) 663-0363

### West Oakland - City of Oakland Rapid Turnover Comparison

Percentage of All Parcels Sold 2 Times Within 2 Years  
January 1997 - June 1999



West Oakland  
City of Oakland

Source: Metroscan, 1999

### Number of Parcels Sold in West Oakland

January 1997 - June 1999

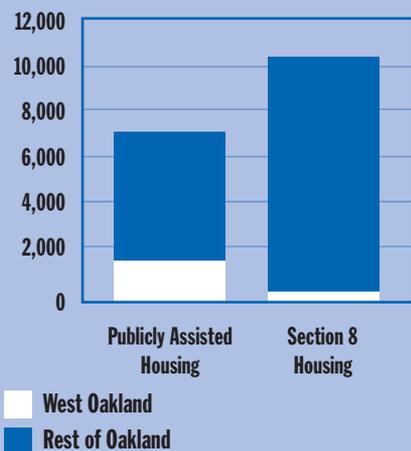
Type of Parcel	Number of Parcels Sold	Total Number of Parcels
Residential	967	4,307
Commercial	95	486
Industrial	199	698
All Parcels Combined	1,276*	5,834**

\*Includes 15 public and institutional parcels not shown on the chart.  
\*\*Includes 343 public and institutional parcels not shown on the chart.

Source: Metroscan, 1999

# Publicly Subsidized Housing

**West Oakland's Share of Total Oakland Subsidized Housing**



Source: Community and Economic Development Agency, 2000; Oakland Housing Authority, 2000

**West Oakland's Share of Total Oakland Subsidized Housing**

	Publicly Assisted Housing	Section 8 Housing
West Oakland	1,455	375
Total Oakland	6,943	10,500
West Oakland Subsidized Housing as a % of Citywide	21.0%	3.6%

Source: Community and Economic Development Agency, 2000; Oakland Housing Authority, 2000

*While West Oakland is considered saturated in the number of publicly assisted housing units in the neighborhood (over 20% of all public housing in Oakland is located in West Oakland); there has been a decline in the number of private units renting to HUD Section 8 voucher holders.*

## The Indicator

This indicator monitors the number of publicly assisted rental units in the West Oakland neighborhood—the area “inside the freeways.” The information for this indicator is divided into two major categories. The first category includes units that are managed by private non-profit organizations and receive subsidies from federal, state, or local funds, or any combination of these funds. The second category includes all housing units that are occupied by people receiving assistance from the federal department of Housing and Urban Development (HUD) in the form of Section 8 vouchers.

## Why Is This Indicator Important?

This indicator measures the number of housing opportunities in the neighborhood for low and lower-middle income families. While the *Vulnerability to Displacement* indicator identifies the number of households that cannot afford median market rents or home sale prices, the *Publicly Subsidized Housing* indicator demonstrates what housing options exist for lower income households. As the neighborhood develops and changes, it is important that people who have grown up in the neighborhood can continue to live there if they choose to do so.

By watching the *Publicly Subsidized Housing* indicator, residents and community organizations can monitor the housing opportunities in West Oakland for families who may otherwise be displaced by rising prices. People concerned about affordable housing and displacement in West Oakland may want to see this indicator stay steady (not change) so the number of affordable units is always the same as it is now. Or West Oakland residents may want to see the number of assisted, affordable units increase as the population of the neighborhood grows or if rising housing costs price more and more residents out of the neighborhood.

## How Are We Doing?

The first category includes units that are owned and managed by private or non-profit entities, but which receive assistance from public subsidy programs. According to city of Oakland data released in February of 2000, there are

currently 1,455 publicly assisted rental units within the West Oakland neighborhood. This number includes units receiving assistance from federal HUD subsidy programs like section 8 and section 236. It also includes units receiving assistance from state agencies and the city of Oakland, including the Redevelopment Agency. These 1,455 units in West Oakland make up 21% of all the publicly assisted units in the city. According to 1999 population estimates, these 1,455 units make up 16% of all households in West Oakland.

There has been only one dramatic change in the absolute numbers of assisted affordable housing in the neighborhood in recent years. The Acorn housing project was redeveloped at a lower density and lost a total of 391 rental units in 1999. Scattered site development by Jubilee West added 8 units in 1998. West Oakland is generally thought to be saturated with publicly assisted housing and public housing, and some city officials have expressed a desire to locate new assisted housing elsewhere in the city.

The second category of assisted affordable housing includes the 375 units of private housing in which rents are subsidized by HUD section 8 vouchers. These types of units make up just over 4% of the housing units in West Oakland, and just under 4% of all such units in the city of Oakland. According to Oakland Housing Authority officials, people with section 8 vouchers have been having increasing difficulty finding housing in the city of Oakland. The “success rate” of people with vouchers finding housing before the vouchers expire (4-6 months) has dropped approximately 35-40% in recent years.

In West Oakland specifically, the Housing Authority has noted a decline in units renting to Section 8 tenants; at the same time, East Oakland is experiencing an increase. One possible reason for this is that as market rents increase in West Oakland, landlords shift from accepting the limited rate of a Section 8 tenant to charging higher market rents. Another reason for the decline of Section 8 units in West Oakland could be due to the conversion of previously rented units to owner occupied units as new people buy houses in the neighborhood and move in. The decrease of Section 8 housing may make up the largest change in affordable housing over next several years. This portion of the indicator should be watched closely.

### Data Limitations

This indicator only measures the number of subsidized housing units in West Oakland. It does not measure the number of market rate units that may be affordable to residents based on their incomes, the number of West Oakland residents who are first-time homebuyers, or the percentage of household income that residents spend on housing.

This indicator also does not count the number of federally owned and managed housing units in West Oakland—public housing. City officials reported that there were approximately 1,675 public housing units “on-line” in various sized projects throughout West Oakland. The Oakland Housing Authority expects this number to increase moderately in the short-term as units that are being renovated are brought back online. In the long-term, however, the number of public housing units in West Oakland should remain fairly stable.

### What Can You Do About Affordable Housing?

Many West Oakland organizations are working to ensure affordable housing options for local residents. Some are working to secure sites and funding for the construction of new affordable housing. Others are investigating the possibility of establishing an inclusionary zoning ordinance that would require new developments to set aside money or units for affordable housing.

### Contact Information for Additional Resources

*Alliance for West Oakland Development*  
Jabari Herbert, (510) 663-0363

*7th Street/McClymonds Corridor Neighborhood Improvement Initiative*  
Allen Edson, (510) 835-0833

*City of Oakland, Community and Economic Development Agency, Housing Division*

First Time Home Buyer’s Program (510) 238-3502  
Housing Development (510) 238-3502  
Housing Counseling & Rent Arbitration (510) 238-7721

**West Oakland Subsidized Housing as a Percent of Total West Oakland Units**

	West Oakland Units	West Oakland Subsidized Housing as a % of Total West Oakland Units
Publicly Assisted Housing	1,455	15.9%
Section 8 Housing	375	4.06%
Total # of Housing Units	9,244	

**Source: Community and Economic Development Agency, 2000; Oakland Housing Authority, 2000; Claritas, 1999**

# New Business Development

## Newly Licensed Businesses in West Oakland

	1997	1998	1999	2000*
Mnfg	-	14	9	1
Trans	-	20	14	11
Whsle	-	9	7	11
Retail	-	16	24	22
Serv	12	31	26	31
AdServ	1	16	24	21
ArtEnt	-	12	10	12
HuServ	-	5	8	7
DvCon	1	7	13	7
<b>TOTAL</b>	<b>14</b>	<b>130</b>	<b>135</b>	<b>123</b>

### Key:

Mnfg	Manufacturing, Publishing, Commercial Printing
Trans	Transportation, Trucking, Shipping, Cargo and Freight
Whsle	Wholesale, Distribution (groceries, metals, etc.)
Retail	Retail, Eating Places
Serv	Services (beauty, janitorial, landscaping, hotel, etc.)
AdServ	Advanced Services (computer software, legal, consulting, engineering, architecture, etc.)
ArtEnt	Arts, Entertainment (photography, graphics, production studio, promoters, recreation)
HuServ	Human Services, Healthcare, Childcare, Social Services
DvCon	Developers, Construction, Trades, Property Management, Real Estate

\*Year 2000 includes businesses licensed through September 15th only.

Source: City of Oakland, Business Tax Division, 1997-2000

*The last few years has seen steadily climbing new business development in West Oakland, most notably in the retail, services, and advanced services (e.g., computer software, consulting, architecture) sectors.*

## The Indicator

This is an indicator of new business investment in West Oakland. This indicator monitors the types of businesses that are setting up operations in the neighborhood by grouping newly licensed businesses into nine categories. The indicator includes data from 1997 to late 2000 and points to trends and changes in the West Oakland economy. This indicator is based on data from the section of the 94607 zip code that is west of Martin Luther King Jr. Avenue.

## Why Is This Indicator Important?

The businesses that operate in West Oakland play a large role in creating the character of the neighborhood. Different types of businesses bring different opportunities and challenges for neighborhood residents. New businesses can bring with them traffic, noise, and pollution, or they can contribute to the vibrancy and beauty of the neighborhood. They can contribute greatly to the economic prosperity of the neighborhood, or they can bring no new job opportunities for local residents. They can spew pollution into the air and leak toxics into the soil and groundwater, or they can be models of green business development.

All communities need basic levels of goods and services. Local businesses can meet these needs. How they do so contributes enormously to the quality of life in the neighborhood. Ultimately, business investment in a community can help create a unique, prosperous, and healthy community. This indicator will help West Oakland residents track the kinds of businesses that are coming into the neighborhood.

## How Are We Doing?

The service sector appears to be growing—with a notable increase in advanced services, like computer software, consulting, architecture, and business services. There also appears to be increasing investment from firms involved in arts and entertainment. Retail is also on the rise, which could be good news for neighborhood. Over the past few years there has been steadily climbing business investment in West Oakland. Historically, manufacturing and industrial enterprises have dominated the business sector in West Oakland. In recent years, fewer new

businesses of these types have been setting up shop in the neighborhood. Also, fewer new businesses related to transportation and motor vehicle services were licensed in the last few years.

residents as retailers offer necessary goods within the community. The wholesale operations and human services category, which includes childcare, healthcare, and other social services, has also experienced increasing investment during this period.

### Data Limitations

This indicator tells us about newly licensed businesses, but it doesn't really give us a full picture of business activity in the neighborhood. For example, it doesn't tell us if newly licensed businesses are replacing failed businesses or if they are adding to the economic activity of the neighborhood. Nor does the indicator show how many people are employed in these businesses or who owns them. The indicator also does not identify the environmental impact these new businesses may have on the neighborhood.

### What Can You Do About New Business Development?

Many organizations in West Oakland have concerned themselves with promoting business development that will contribute to the health and vitality of the neighborhood. Some of these organizations work with the city to attract and support good business investments. Some residents and organizations are working with the city to change zoning regulations, which is the groundwork for business investment. Other organizations work directly with potential investors and encourage beneficial development. There are also efforts underway to transform existing businesses into model "green businesses," that will minimize their impact on the local environment and help make West Oakland a healthy, livable community.

### Contact Information for Additional Resources

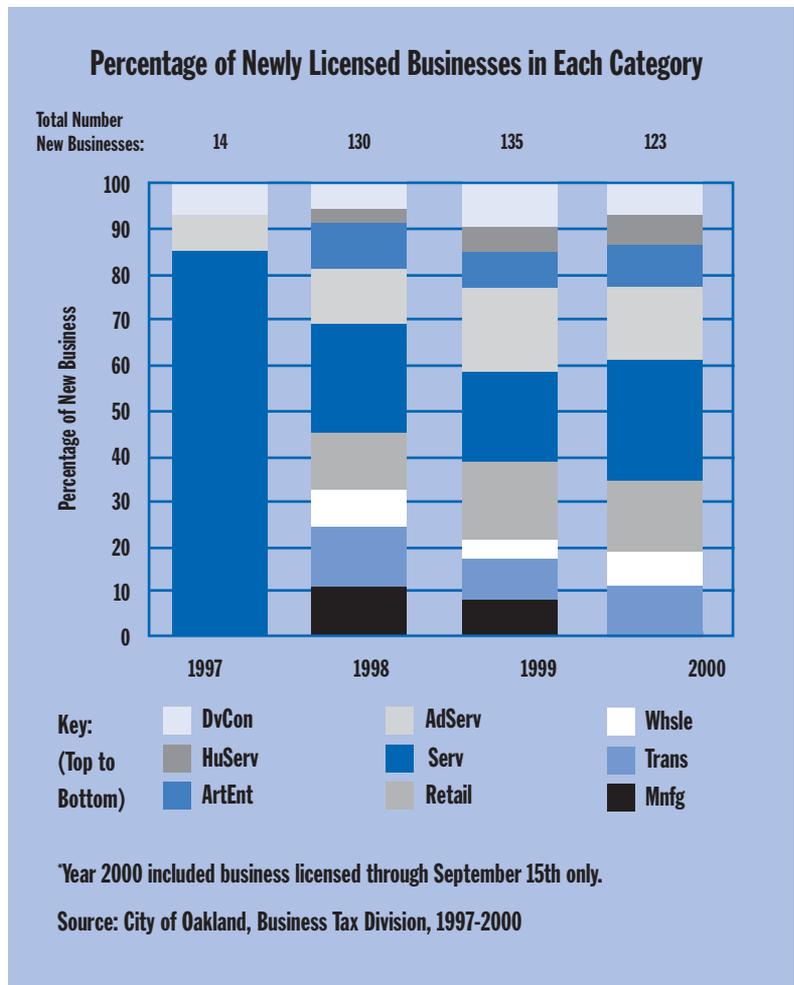
*West Oakland Commerce Association*  
(510) 272-9622

*Alliance for West Oakland Development*  
(510) 663-0363

*Alameda County Green Businesses Program*  
<http://www.greenbiz.abag.ca.gov>  
Pamela Evans  
pevans@co.alameda.ca.us  
(510) 567-6770

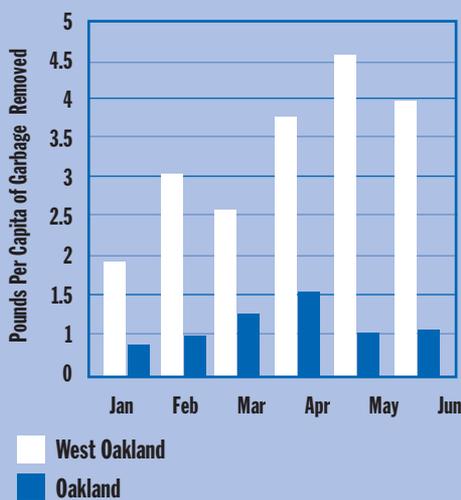
*7th Street/McClymonds Corridor  
Neighborhood Improvement Initiative*  
(510) 835-0833

*Community and Economic Development Agency, City of Oakland*  
(510) 238-6656



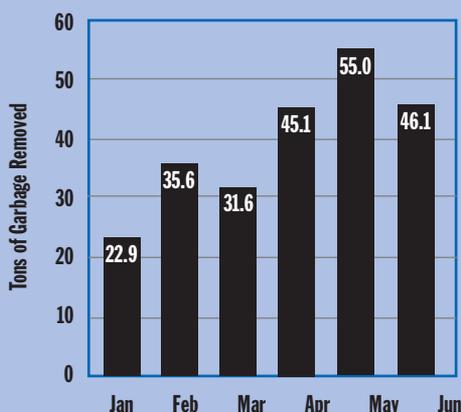
# Illegal Dumping

**Pounds of Illegally Dumped Garbage Per Capita in West Oakland and Oakland, 2000**



Source: City of Oakland Public Works Agency, 2000; US Census 2000

**Tons of Illegally Dumped Garbage Removed from West Oakland January through June 2000**



Source: City of Oakland Public Works Agency, 2000.

*Between January and June 2000, the city of Oakland removed 263 tons of illegally dumped garbage from the streets of West Oakland; this represents three times the amount of illegally dumped garbage per person collected in all of Oakland.*

## The Indicator

This indicator measures the amount of illegally dumped garbage removed from the streets of West Oakland by the city each month. The indicator tracks illegal dumping by measuring the total tonnage removed from neighborhood streets and the pounds of illegal garbage removed per person in West Oakland and Oakland. This indicator uses the US Census 2000 population within the freeway boundaries to calculate per capita garbage removed, and looks at the first six months of the year 2000.

## Why Is This Indicator Important?

Illegally dumped garbage is unsightly and can be hazardous. Piles of garbage sitting in vacant lots or along street sides detract from the beauty and character of West Oakland. This garbage is offensive to nearby residents, gives visitors to the neighborhood a bad impression, and drives down property values. Piles of illegally dumped garbage can attract rodents and other pests, contaminate soil and groundwater, and are hazardous to children who may play near the refuse.

This indicator will help concerned residents and community organizations monitor the amount of garbage that is removed from their neighborhood. By comparing the pounds of illegally dumped garbage per person in West Oakland and Oakland, residents can see how much more or less illegal dumping is happening in West Oakland than in the city as a whole. This can help direct attention to the severity of the problem and advocate for increased city and resident involvement in monitoring illegal dumping. Combined with first-hand observation of neighborhood streets, this indicator will give people an idea of how much garbage is being dumped in their neighborhood. This indicator also helps show how the city of Oakland is responding to the problem of illegal dumping because it measures the amount of garbage they collect.

## How Are We Doing?

In the first six months of the year 2000, the city removed over 263 tons of illegally dumped garbage from the streets of West Oakland. Over this period,

the pounds of illegally dumped garbage collected in West Oakland per resident was three times the pounds per capita in the rest of Oakland. The two charts show how the pounds per capita of illegal garbage removed and the total tonnage of that garbage were spread through the six months studied. The trash collected from the West Oakland neighborhood makes up 18% of all the illegally dumped garbage the city deposited in the city dump from January to June 2000.

The garbage was collected by a single city truck which circulates through Public Works Service District 1 each day Monday through Friday. According to city officials, much of the garbage is regularly collected from the same locations. However, the city also responds to complaints by residents. While it is difficult to know who illegally dumps garbage on the streets of West Oakland, there is some evidence that a portion of the garbage comes from sources outside the neighborhood.

The city occasionally sifts through the illegally dumped garbage it collects in an effort to find out who dumped it. If there is clear evidence that one person or business is responsible for the trash, the city will send the responsible party a bill for the garbage disposal. In November 2000, a city ordinance was passed to allow for an enforcement branch in the Illegal Dumping Maintenance Staff. It provides for an illegal dumping team of ten people, including six enforcement officers that will investigate illegally dumped refuse, locate the offender, issue them a citation, and take them to small claims court. It also provides for hidden mobile cameras to be placed in certain hot spot zones to help catch violators.

If the city is not removing an amount equal to the garbage being dumped, then West Oakland residents would want to see this indicator go up. That is, they would want to see an increase in the amount of illegally dumped garbage collected from their streets by the city. Over time, however, the neighborhood will want to see the indicator go down. With increased education, vigilance, and prosecution of offenders there should be less garbage illegally dumped in West Oakland.

## Data Limitations

This indicator measures the total tonnage of illegally dumped garbage removed from city streets by the city's Public Works Department, and the pounds removed per person in West Oakland and Oakland. As discussed earlier the indicator might go down (less tonnage removed) for two reasons: one, there is less garbage on the street; or, two, the city is not collecting as much as they used to. In order for this indicator to most effectively point to the amount of dumping in the neighborhood, it should be combined with some first-hand observation of the streets or some monitoring effort. Another limitation is that this indicator only measures garbage dumped on land, it does not take into account garbage dumped into the Bay. Nor does this measure inform us about the damage done to soil or groundwater because of illegal dumping.

## What Can You Do About Illegal Dumping?

There are community groups that have organized to clean up litter and garbage in the neighborhood. Some residents also routinely report illegal dumping to the city. In the future, residents may want to work with the city to monitor sites where illegal dumping occurs regularly. Residents could be involved in catching and prosecuting illegal dumpers. Community organizations can also play a role in educating neighborhood residents about how to report illegal dumping and about city waste disposal services that may help prevent illegal dumping.

## Contact Information for Additional Resources

*City of Oakland, Public Works Agency, Sanitation and Graffiti Abatement*  
(510) 434-5101

Call this number to report illegally dumped garbage. The Sanitation and Graffiti Abatement department is in charge of street cleaning and garbage on public property. They do not deal with paint or hazardous materials. To report blighted private property, call the Code Compliance Department at (510) 238-3381.

*Clean City Hotline*  
(510) 238-7630

Provides information on Team Oakland, neighborhood and community cleanups, Adopt-A-Spots, and storm drain cleaning.

*Environmental Services Hotline*  
(510) 238-7611

Organizes citywide cleanups. If you want to volunteer time in your neighborhood or organize a neighborhood cleanup, call this hotline.

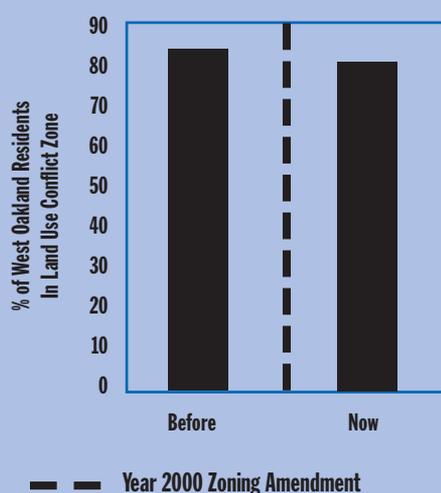
*Recycling / Solid Waste*  
(510) 238-SAVE

This recycling hotline provides used oil recycling kits, and information on residential, office, and library recycling and solid waste.

*Clean Oakland Program*  
Sandra Steen  
(510) 434-5113

# Land Use Conflict

**Land Use Conflict in West Oakland  
Before and After New S-16  
Year 2000 Zoning Amendment**



Source: Community and Economic Development Agency

*Nearly 82% of West Oakland residents live within 1/8 of a mile of an industrial area.*

## The Indicator

This indicator measures the percentage of the West Oakland population that lives in or within 1/8 mile of an industrial area.<sup>1</sup> It tracks the degree of land use conflict between industrial and residential uses by estimating the proportion of West Oakland residents that live in close proximity, i.e., within 1/8 mile or 660 feet, to areas with industrial land uses.

## Why Is This Indicator Important?

Land use compatibility is an important component of the well being of communities, especially in urban areas where population densities are high. Because different land uses make different demands upon urban space, a great mixture of land uses can generate a high degree of conflict among the different users. Two land uses are particularly difficult to harmonize, and are often considered incompatible: residential and heavy industrial uses.

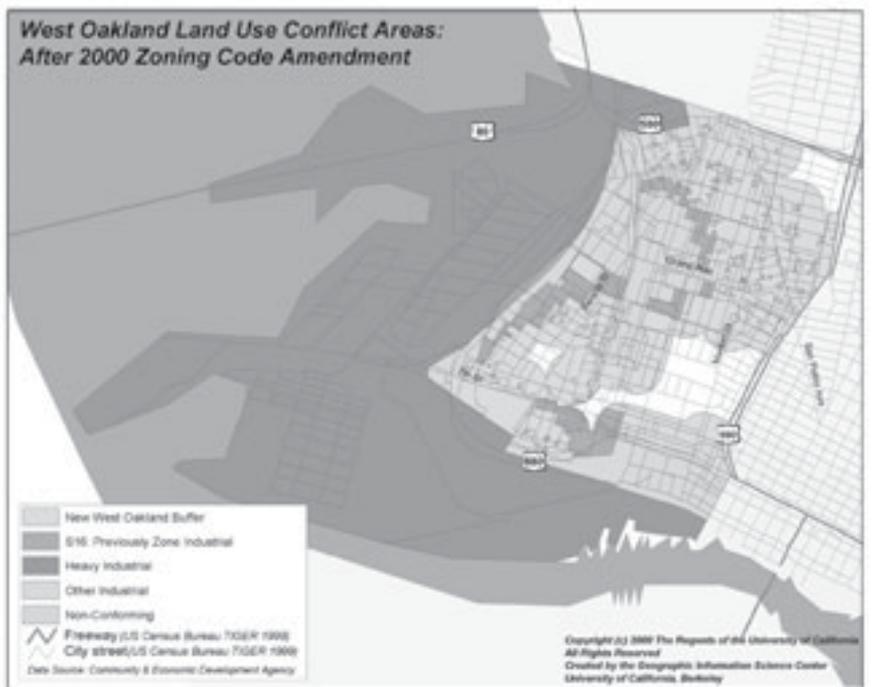
In general, people enjoy living in quieter, cleaner, more “attractive” places, with a great deal of amenities such as schools, clinics, shopping areas, and parks. The presence of industry close to residences changes not only people’s perception of the attractiveness of their neighborhood (through visual, architectural cues), but it also impacts residents’ day-to-day living conditions. For example, people living close to industries will experience higher levels of noise and pollution from facilities and their associated truck traffic, than people living in core residential areas. Also, residents living adjacent to a heavy industrial zone may experience greater impacts than residents living adjacent to light industrial areas where some of the uses allowed in heavy industrial areas are not permitted. For example, the transfer and storage of hazardous waste is permitted in heavy industrial zones, but not in light industrial zones.<sup>2</sup>

Industry is also impacted by the conflicts generated by the close proximity of residential areas. For example, industries can experience greater levels of scrutiny of their activities from concerned neighboring residents. Despite a facility’s location in an industrial zone, any complaints that are registered may force the facility to change or even more permanently restrict its operations. In many cases, pollution prevention options and substitution of non-toxic chemicals for toxic ones can both improve the environment and the bottom line.

It is often desirable to reduce land use conflicts between residential and industrial areas by creating a buffer zone—a transitional zone between industrially zoned areas and residential areas. These zones are likely to allow mixed uses, some types of light industry, commercial uses, and usually no residential uses. The city of Oakland has been working on the Citywide Zoning Update in an effort to comply with the direction set forth in the recently adopted General Plan. A priority area was West Oakland, due to its existing land use conflicts and the high pressure for redevelopment. On October 31, 2000, the City Council adopted an amendment to the Zoning Code allowing for the creation of the new S-16 Industrial-Residential Transition Combining District.<sup>3</sup> This newly created zoning classification, of a mixed-use character, is intended to provide a buffer between heavy industrial uses and residential uses in West Oakland. The S-16 combining district was previously zoned as light industrial for the most part. Permitted activities in the S-16 zone are lighter than the previously existent industrial zone, and residential uses are not allowed.<sup>4</sup>



This indicator provides a way of tracking the degree of land use conflicts by measuring the percentage of residents most directly impacted given their proximity to existing and permitted industrial uses—this would include those residents actually living within industrial areas (i.e., areas either zoned as industrial, or non-conforming industrial uses in residential zones) as well as those living in close proximity to an industrial area. The indicator thus provides a way of detecting what proportion of the population is potentially negatively impacted by existing land use patterns, whether planning decisions are resolving these issues, and a way to evaluate planning proposals or redevelopment projects for the neighborhood.



Because of the recent zoning change, we can evaluate the impact of this planning tool on West Oakland residents. Although the 2000 Zoning Amendment does not change the underlying zoning in a strict sense and does not change existing land uses, two new “special use” zones have an impact on this indicator. These are the S-16 mixed use zone, created to limit the impacts of new non-residential development on adjacent residential zones, and the S-15 zone, which protects transit-oriented development (e.g., Transit Village). Both impose land use restrictions that are excluded from the indicator’s definition of “industrial areas” after the amendment. Thus, residents living with this newly zoned area are still considered within a “land use conflict” area as they are now within 1/8 of a mile of an industrial zoned area, but the area itself creates a buffer, reducing the impacts on those residents adjacent to it.

## How Are We Doing?

West Oakland is characterized by a great mixture of land uses, from residential to heavy industrial, all coexisting in less than 4,000 acres, or about 10.5% of the area of the city of Oakland.<sup>5</sup> In 1990, the West Oakland population totaled 22,144 residents.<sup>6</sup> This grew to 23,475 people in 2000, representing approximately 6% of the city of Oakland's population.<sup>7</sup>

This indicator shows that in early 2000 (before the 2000 Zoning Update for West Oakland), 10.2% of West Oakland residents (2,396 people) actually lived within industrial areas, and another 73.5% of residents (17,263 people) lived within a 1/8 mile buffer zone surrounding industrial areas.<sup>8</sup> This meant that the vast majority (83.7%) of the West Oakland community lived within one or two blocks of an industrial area.<sup>9</sup>

The October 2000 Zoning Amendment, by creating S-15 and S-16 "special use" zones, has changed the designation of industrial zones and shifted the "land use conflict zone" (i.e., the 1/8 mile industrial buffer area) to include the newly zoned areas. With the new zoning in place, 82.1% of West Oakland residents now live within 1/8 mile of industrial areas; this is a decrease of 387 people (or 1.6% of the population). The estimated number of people living in industrial areas decreased from 2,396 to 1,905 people after the amendment, which represents a 2.1% decrease in the West Oakland population exposed to the greatest potential land use conflict. However, the number of West Oakland residents living within the 1/8 mile industrial buffer area or "land use conflict zone" has gone up from 17,263 to 17,367 residents (an increase of 0.5%)

The change in zoning will not change existing land uses, but it is intended to change future land uses. Thus, although conditions do not change immediately for West Oakland residents (particularly those still living within industrial areas or in close proximity to non-conforming industrial sites), the indicator tells us that the overall impact of the zoning amendment is a positive one in the long run. The new zoning intends to change the nature of potential conflicts in the buffer zone, and improve conditions for those residents abutting the new buffer zone. Those residents in the 1/8 mile wide "land use conflict zone" will still face land use conflicts posed by the adjacent industrial activities. However, conditions within this buffer should improve for the 489 people who were in areas previously zoned as industrial and currently zoned S15 (98) and S16 (391 people). It will be interesting to see whether or not there is an increase in residents choosing to live in this newly created buffer area, as S15 will include transit village housing and S16 allows for live-work space.

## Data Limitations

This indicator is a measure of potential land use conflicts rather than actual land use conflicts. By measuring proximity to a zoned land use rather than to an existing land use, one is measuring the potential for land use conflict.<sup>10</sup> This type of measure can, however, be very useful in estimating the impact of land use planning decisions on a growing community.

One of the greatest limitations of this indicator is that, by nature of its definition, it may not be possible or useful to issue regular yearly updates. Actual land uses (rather than zoning) would be equally as difficult. Updates would require both annual population information and land use information (preferably in spatial form). Information systems that provide citywide data on land use planning decisions to the community are still not user friendly and their updates are irregular. Generally, updates of zoning and other related land use data are completed when there are significant amendments to the city's General Plan. This involves a lengthy process of discussion and reviews and thus makes updated information rarely available.

## What Can You Do About It?

Some local organizations such as the 7th Street/McClymonds Corridor Neighborhood Improvement Initiative (through their Community Development Working Group), the West Oakland Commerce Association (WOCA), the Coalition for West Oakland Revitalization (CWOR), and others have been working on redevelopment issues and trying to address land use conflicts in their neighborhood. The City of Oakland Community Development Agency has targeted West Oakland as a priority area of intervention in its citywide zoning update. The recent amendment of the Zoning Code was intended to address land use conflict issues and the community's development needs. As development moves forward in West Oakland, the community will want to carefully monitor new land uses, particularly in the newly zoned areas.

## Contact Information for Additional Resources

City of Oakland, West Oakland Community Planner  
Margot Lederer Prado  
mprado@oaklandnet.com  
(510) 238-6766

7th Street/McClymonds Corridor Neighborhood Improvement Initiative  
Allen Edson  
(510) 835-0833

Coalition for West Oakland Revitalization (CWOR)  
(510) 451-2967

## Notes

<sup>1</sup>This indicator considers *industrial areas* as either areas zoned as industrial (light or heavy industrial uses), or industrial parcels within areas zoned as residential (non-conforming industrial uses).

<sup>2</sup>Industrial zones are intended to create, preserve, and enhance areas containing manufacturing and related establishments. They are usually classified from *Special to Heavy Industrial Zones*, according to their degree of impact (respectively, lower to higher impact). In *Special* and *Light Industrial Zones*, some custom and light manufacturing activities are permitted if they have limited external impact within an open and attractive setting, and is typically appropriate to locations near major thoroughfares and nonmanufacturing areas, and to locations adjacent to residential communities. In General and Heavy Industrial Zones, a wider range of manufacturing activities are permitted which are potentially incompatible with most other activities.

<sup>3</sup>Other special use designations were also applied for the first time to West Oakland through this amendment – the new S-15 (Transit Oriented Development) and S-4 (Design Review) combining districts.

<sup>4</sup>Uses allowed in the S-16 buffer include custom and light manufacturing (conditioned to facility's size), new and converted joint live work quarters (limited up to 1/3 of living area), and other civic and commercial activities. Uses not allowed include residential uses, and general manufacturing, small-scale transfer and storage of hazardous waste management, alcoholic beverage sales, fast-food restaurants, automotive repair and cleaning (S-16 Ordinance, CEDA, 2000).

<sup>5</sup>West Oakland is defined by the area within the 580 and 980 freeways, and includes the Port of Oakland and the Army Base areas.

<sup>6</sup>The number of West Oakland residents was estimated using 1990 Claritas Block Group Data, and the EIP West Oakland “freeway” boundary. The number of Oakland residents (372,242 people) was retrieved from 1990 Census Place Data.

<sup>7</sup>Based on 2000 Census figures.

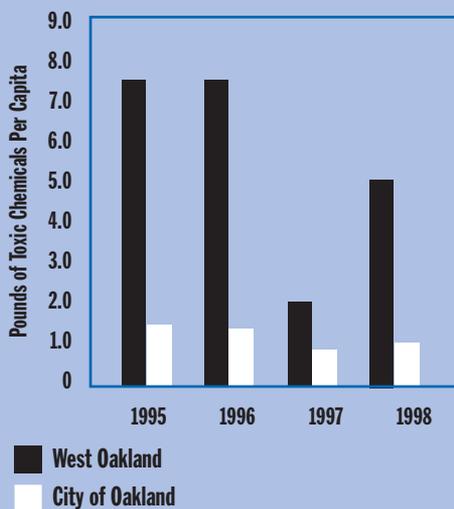
<sup>8</sup>The “early 2000” indicator value for West Oakland was calculated based on 2000 Census population data and existing zoning information prior to the approval of the October 2000 zoning amendment. Industrial areas buffered included all areas zoned as industrial plus all non-conforming uses of industrial properties within residential zoned areas.

<sup>9</sup>Blocks in West Oakland vary widely in size, usually ranging from 320 ft for a typical residential block, to about 600ft or more in the more typical industrial blocks of the west part of West Oakland.

<sup>10</sup>The indicator value would be the same whether there was a higher or lower number of industrial parcels in the same area zoned as industrial, provided that the population distribution throughout the neighborhood remained the same.

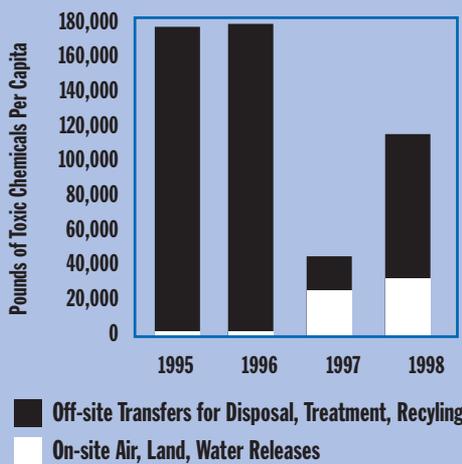
# Neighborhood Toxic Volumes

**Comparison of Per Capita Toxics Generated in West Oakland and Oakland, 1995-1998**



Source: TRI data, Combined Releases and Transfers, 1995-1998; population estimates based on 1990 US Census

**West Oakland Combined TRI Releases and Transfers, 1995-1998 (Zip Codes 94607 & 94608)**



Source: TRI data, Combined Releases and Transfers, 1995-1998; population estimates based on 1990 US Census

*In 1998, West Oakland facilities generated five times more pounds of toxic chemicals per capita than facilities in the city of Oakland.*

## The Indicator

This indicator measures the pounds of toxic chemicals per person generated by facilities reporting to the Toxics Release Inventory (TRI).<sup>1</sup> The amount of toxics generated in West Oakland is a sum of the total amounts of air emissions, surface water discharges, land releases, underground injections, and chemical transfers to off-site locations reported to TRI in one year in zip code 94607 and the portion of 94608 in Oakland.<sup>2</sup> The per capita indicator was calculated based on West Oakland population estimates for each year using the freeway boundary.

## Why Is This Indicator Important?

For many decades, West Oakland residents have shared their neighborhood with a number of polluting industries that contaminate the air, water, and soil. Of the 33 TRI facilities in Oakland during the study period 1987-1998, 8 were located in West Oakland.<sup>3</sup>

Aside from the large industrial facilities tracked by TRI, numerous other pollution sources contribute to unhealthy conditions in West Oakland. Most of these are not currently measured but contribute to and heighten the seriousness of the pollution problem in West Oakland. These include: small businesses such as gas stations and dry cleaners, the Port of Oakland and the Army Base, the high density of freeways that surround West Oakland, the old housing stock (which imposes higher risks of lead poisoning and other indoor pollution impacts), and the inherited contamination from old industrial sites that have closed down. All of these sources, large and small, contribute to the health and well-being of the West Oakland community.

Although the *Neighborhood Toxic Volumes* indicator does not capture pollution generated by other sources (e.g., small manufacturing facilities or traffic exhaust), it captures the combined burden that these large polluters (i.e., those regulated by TRI) are imposing upon the community. This indicator is a proxy for a pollution trend that has an impact on public health in the neighborhood, and also reflects the risk of future contamination.

## How Are We Doing?

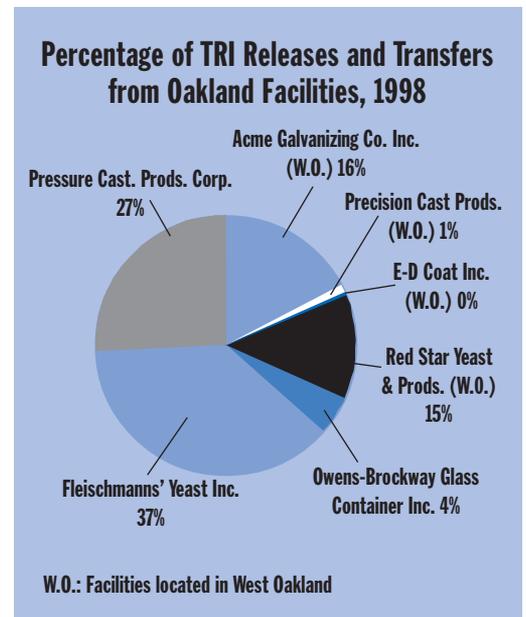
Over the years 1995-1998, facilities in West Oakland generated on average nearly five times more toxic chemicals per capita than the city of Oakland as a whole. Specifically, in 1998, West Oakland generated *over five times* the pounds of toxics chemicals (or TRI releases and transfers) per person as was generated in Oakland that year. The figure “Comparison of Per Capita Toxics” clearly demonstrates the great discrepancy in per capita toxics generation in West Oakland as compared to Oakland.

Since 1987, the combined toxic chemical releases and transfers for TRI facilities located in zip codes 94607 and 94608 (mostly representing West Oakland industries) have experienced some significant shifts.

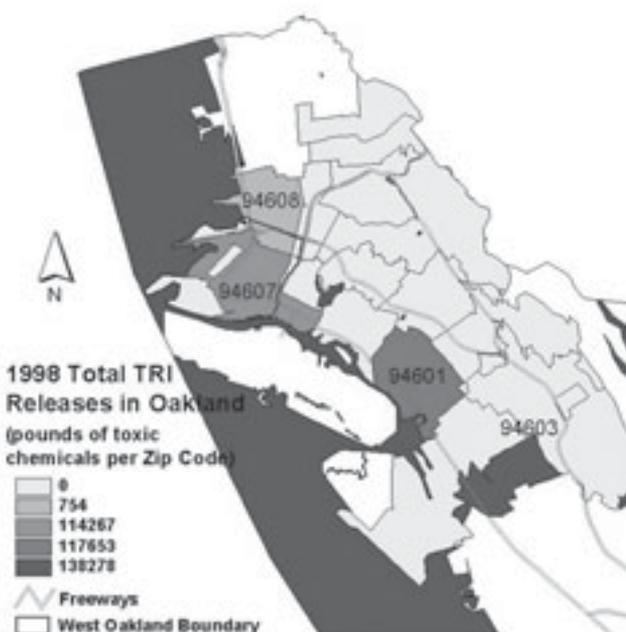
During the period 1987-1998, West Oakland industries (including those in zip codes 94607 and the portion of 94608 in Oakland) generated an average of about 140,499 pounds of toxic chemicals a year. In 1998, the combined amount of toxic releases and transfers for West Oakland neighborhood was 115,021. This is slightly better than the over 170,000 pounds that was released and transferred per year during the period 1994 to 1996.

The majority of the toxics generated in West Oakland are generated in zip code 94607. The changes in releases and transfers over the previous nine years in this zip code are mostly due to the activity of two major polluters: Acme Galvanizing Co. and Red Star Yeast. From 1994 to 1996, Acme Galvanizing Co. was the major polluter and was responsible for about 90% of the overall releases and transfers in this zip code. Acme stopped production in 1997. When Acme resumed activity in 1998, it reduced its toxic releases by one-third. However, since 1994, Red Star Yeast has increased its toxic releases almost tenfold and in 1998 was responsible for about 50% of all releases in this zip code. Thus, 1998 releases in the 94607 zip code are still very high and far worse than what was reported for this zip code in 1992 (34,635 pounds) and in 1997 (44,211 pounds) when releases from both of industries were far less than they are today.<sup>4</sup>

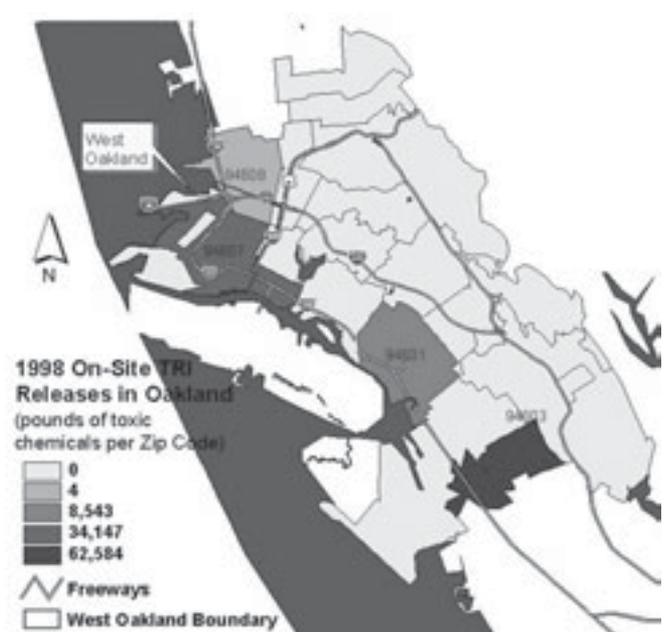
Looking at the two zip codes together, separating the toxics generated in West Oakland into the amount that was released on site and the amount that was transferred off-site helps us to better understand potential environmental impacts. On-site releases have the potential to pose a greater burden to communities where the TRI facility is located as these represent direct releases to the local environment. On-site releases include air emissions, chemical discharges to water (streams, lakes, the Bay, or other bodies of water),



### Total Toxics Generated in Oakland Zip Codes, 1998



### On-Site Releases in Oakland Zip Codes, 1998



injection of toxic chemicals into wells or surface impoundments (e.g., ponds), storage in on-site landfills and other methods of disposal (e.g., waste piles, leaks, and spills).

A greater portion of total toxics generated in West Oakland are released into the community (on-site releases), as opposed to being transferred off-site. This can pose greater health and environmental risks to the residents of this neighborhood. In 1998, over 32% of Oakland's on-site toxic releases occurred in West Oakland, although this neighborhood represents only 10% of Oakland's land area.<sup>5</sup> As shown in the second figure, on-site releases in West Oakland are actually on the rise and making up a greater proportion of total toxics generated. In the city of Oakland as a whole, on-site releases have been decreasing over time (this downward trend in Oakland releases is not as pronounced as in the *Amount of Air Pollutants Released* indicator for the 1995-1998 period).

The two maps show the comparison of Oakland zip codes relative to the generation of toxic chemicals, and the release of those chemicals. The two West Oakland zip codes (94607 and 94608) are highlighted on the map of Oakland as significant contributors to toxic generation and release in the city of Oakland as a whole. Other zip codes with significant toxic generation are 94601 and 94603.

TRI data allows us also to find out which industries are generating toxic chemical releases into our communities, as shown in the pie graph. For example, we can see that four West Oakland facilities registered releases and transfers within the 1998 reporting year. The other four TRI facilities reporting in 1998 are located mostly in zip code 94601, with the exception of Fleischmann's Yeast, Inc. located in zip code 94603.

## Data Limitations

This indicator only tracks toxic chemical releases and off-site transfers from TRI permitted facilities, i.e., the "big polluters". Thus, it does not track other sources of toxic releases or contamination that can be found in urban industrial areas such as West Oakland.

In addition, the Toxic Release Inventory tracks self-reported annual estimates of toxic releases and transfers by TRI facilities in a given zip code. The indicator does not take into account environmental releases of toxics from closed or inactive facilities with contaminated sites. This is potentially a significant part of yearly releases to land and water in West Oakland for which there is no reported information. Although some models can be applied to try to estimate these other releases to the local environment<sup>6</sup> (e.g., plume models for releases from underground storage tanks), they require a great deal of resources. There are also no direct ways of measuring the annual contribution of the contamination left over by old industrial facilities that have operated in West Oakland in the past. Thus, this presents a significant information gap in assessing the level of toxic pollutants entering the community.

## What Can You Do About It?

The West Oakland community has been very active in getting organized around contamination issues. Groups such as the Environmental Science Institute, the African American Development Association, and Citizens for West Oakland Revitalization (CWOR) have uncovered information about sources and levels of contamination in West Oakland and engaged in actions to reduce existing contamination and raise community awareness about these issues.

Local organizations can be instrumental in the cleanup of contaminated sites. For example, they can enlist the City of Oakland's support in cleanup efforts by encouraging city agencies to submit specific proposals to the Department of Toxic Substances Control (DTSC) or the State Water Quality Control Board (SWQCB) for evaluation and clean up of contaminated sites. Community organizations can also collaborate with developers and city agencies, alerting them if brownfield cleanup grants could help support the higher costs of developing contaminated areas. This grant-financed redevelopment of brownfields could improve the environment in West Oakland, while being economically attractive to developers.

Agencies such as the SWQCB, DTSC, and EPA can help communities with information and technical advice on existing pollution sources and measures to mitigate and prevent pollution, as well as serve as lead agencies in overseeing cleanup of contaminated sites. Using the information provided by this indicator, citizens, businesses, and governments can work together to develop targeted intervention and action plans to more effectively use resources to protect the quality of their land, air, and water and improve the overall environmental quality and well being of the community.

## Contact Information for Additional Resources

*Citizens for West Oakland Revitalization (CWOR)*  
(510) 451-2967

*City of Oakland, Environmental Services Hotline*  
(510) 238-7630

*Pollution Prevention Information Clearing House (PPIC)*  
[www.epa.gov/opptintr/library/libppic.htm](http://www.epa.gov/opptintr/library/libppic.htm)

*Envirofacts*  
Specific facility information on: [www.epa.gov/enviro/html](http://www.epa.gov/enviro/html)

## Notes

<sup>1</sup> Manufacturing facilities reporting to TRI are those in Standard Industrial Classification (SIC) codes 20-39 (or Federal facilities in any SIC code) that manufacture or process over 25,000 pounds of the approximately 600 chemicals listed (or 28 categories of chemicals) in the regulations, or those that “otherwise use” more than 10,000 pounds of any listed chemical or category, in a given zip code, and that have the equivalent of 10 full-time workers. These facilities include chemicals, petroleum refining, primary metals, fabricated metals, paper, plastics, and transportation equipment. Recently, other industrial sectors have been added.

<sup>2</sup> This includes chemical waste transfers for treatment to off-site Publicly Owned Treatment Works facilities or other offsite locations, recycling, and energy recovery.

<sup>3</sup> There were three additional facilities within zip code 94608 that were located in Emeryville. The last time any of these reported to TRI was in 1994. Their releases and transfers were included in the totals for this zip code shown in the graph.

<sup>4</sup> Acme Galvanizing only started operations in the 1993 reporting year.

<sup>5</sup> As would be expected, since West Oakland releases count towards the city of Oakland total releases.

<sup>6</sup> For example, California Water Quality Control Board has undertaken a detailed study of plume models to estimate releases and contamination from underground storage tanks for the South Bay; it is foreseeable that some time in the future they could also study the North Bay and East Bay and West Oakland although there is no set date.

# Resident Toxic Exposure

## Oakland and West Oakland Contaminated Sites

TOTAL NUMBER OF CONTAMINATED SITES*			
	Oakland	West Oakland	West Oakland as a % of Oakland sites
	2,137	403	19%
NUMBER OF SITES IDENTIFIED PER DATABASE			
Databases	Oakland	West Oakland	West Oakland as a % of Oakland sites
NPL	0	0	--
CERCLA	27	8	30%
CALSITES	11	5	45%
RCRA-RCRIS	538	103	19%
TRI98	10	4	40%
TSD	3	2	67%
LUST	611	116	19%
HAZMAT	1,880	361	19%
SLIC	76	16	21%
MTBE	61	6	10%

\*Address-matched sites only. Duplicate sites removed.  
**Note: Successful address matching rates were: HazMat - 95%, SLIC - 85%, and MTBE - 100% (address-matched by UCB-GISC student Xu Jianchun). For all other databases, location information for the sites identified was obtained from USEPA as Arcview files.**

*The majority of West Oakland residents (83%) live in close proximity to at least one of the 403 contaminated or potentially contaminated sites in the neighborhood; this is significantly higher than resident toxic exposure in the rest of Oakland (54%).*

### The Indicator

This indicator measures the percentage of residents in a community living in close proximity (within 1/8 mile or about 660 feet) to a known or potentially contaminated site.

The indicator uses information from different federal, state, and local agencies<sup>1</sup> to identify and locate facilities or sites known or suspected to be contaminated with different toxic chemicals (see table of databases). By bringing this information together, the indicator presents an aggregated, although not exhaustive, picture of community exposure to different sources of contamination in different media (air, water, and soil).<sup>2</sup>

### Why Is This Indicator Important?

Contamination is one of the serious problems West Oakland residents face. Past and present contamination places a heavy burden on a community, including: health problems resulting from resident exposure to toxics, costly cleanup of contaminated property, and limited economic development potential for known or potentially contaminated land. However, there is at present no aggregate measure of the community's level of contamination or of the level of exposure its residents have to this contamination.

Contamination levels in West Oakland, as in most historically industrial communities, are very difficult to estimate. With its industrial history and its continued mixed use development, West Oakland is home to numerous contaminated or potentially contaminated sites. In West Oakland, contaminated sites result from, among other things manufacturing facilities; activities of the Port of Oakland; past use of the Army Base and now its redevelopment; freeway traffic surrounding West Oakland; local small businesses (e.g., gas stations or dry cleaners); and inherited contamination from former land uses in the neighborhood.

Pollution can linger in the environment for decades if no clean up efforts are undertaken, and information on past and even present pollution sources (e.g.,

## Federal, State, and City Databases of Contaminated Sites

Databases	Description	Agency	
1. NPL	National Priority List (Superfund)	Priority Cleanup Sites under the Superfund Program	USEPA
2. CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System	Sites proposed to or on the National Priority List	USEPA
3. CALSITES (AWP)	California Department of Toxic Substances Control – Annual Work Plan	Sites contaminated with hazardous substances and considered by DTSC as priority for cleanup or investigation	DTSC
4. RCRIS	Resource Conservation and Recovery Information System	Sites of hazardous waste handlers who generate, transport, treat, store, and/or dispose of hazardous waste	USEPA
5. TRIS	Toxic Release Inventory System	Sites with toxic chemical releases to air, water, and land	USEPA
6. TSD	Treatment, Storage, and Disposal	Location of RCRA hazardous waste treatment, storage and disposal facilities	USEPA
7. LUST	Leaking Underground Storage Tanks	State Water Resources Control Board list of reported underground storage tanks incidents	SWRCB (arcview file received from EA)
8. HAZMAT	Hazardous Materials	Sites that handle hazardous materials identified by the City Emergency Services	Oakland Fire Dept.
9. SLIC	Spills, Leaks, Investigation and Cleanup Program	Sites with ground water polluted by chemicals other than total petroleum hydrocarbons (THP) and that are used as fuels	SWRCB
10. MTBE	Methyl Tertiary Butyl Ether	Location of underground storage tanks with MTBE contaminants	SWRCB

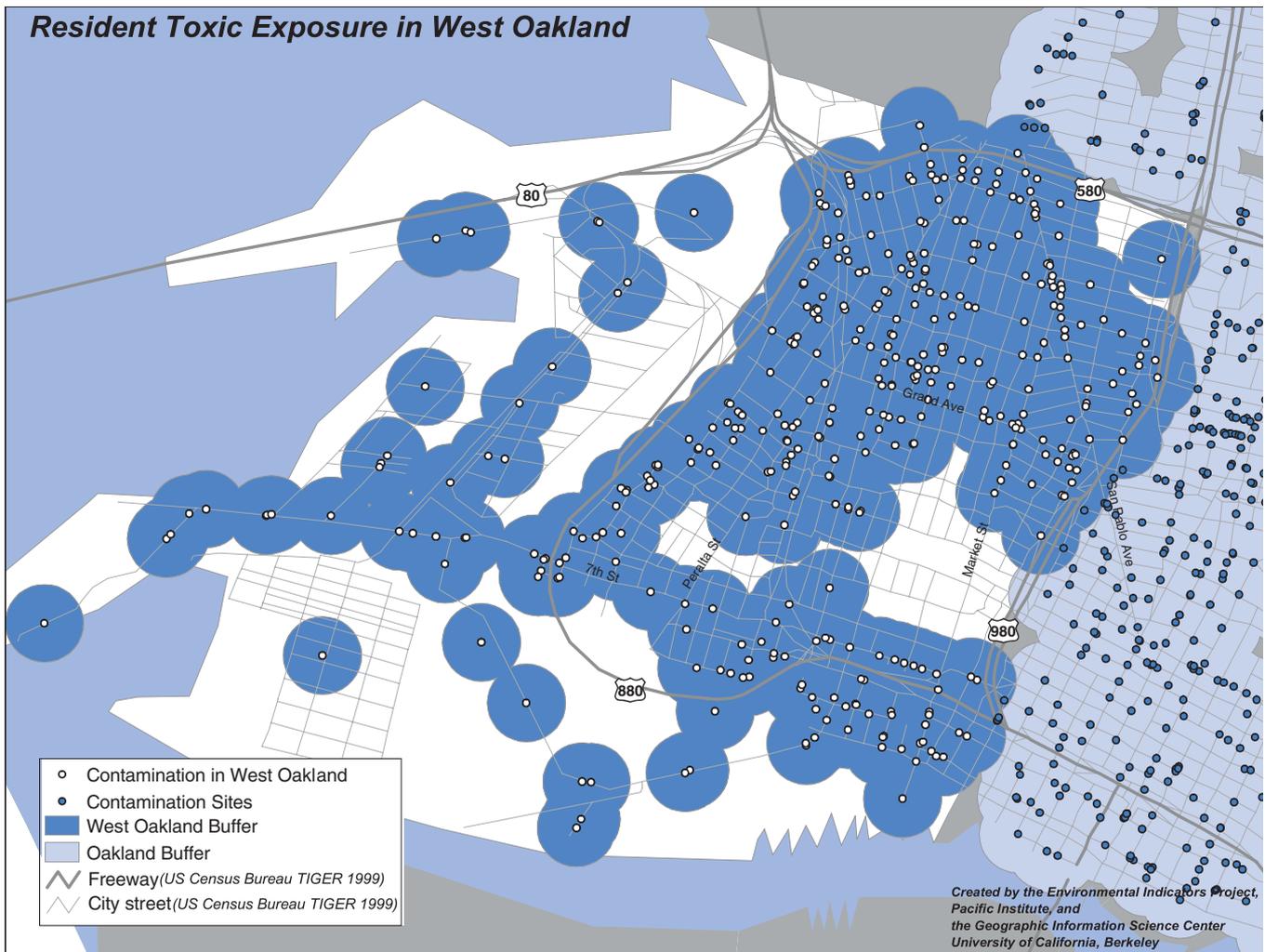
types and levels of contaminants emitted or present at a site) is very incomplete. Where such information does exist or is collected, it is fragmented among many agencies. In many cases, however, information on the actual contaminants present and on the level of contamination of a particular site identified is nonexistent.

Residents neighboring contaminated sites also have to contend with health problems associated with significant levels of exposure to environmental contamination. These health problems can range from “minor” breathing problems or other types of allergic reactions, to more serious effects such as cancer, long-term nerve damage, or even death.

From an economic development perspective, contaminated sites or those merely suspected of contamination can severely constrain redevelopment and economic opportunities in West Oakland. Environmental quality and health issues are inevitably intertwined with and will influence both the level of clean-up that is undertaken on contaminated sites and the nature of the redevelopment that takes place on the site. For example, will land suspected of contamination be redeveloped at all? If it is, what are the potential reuse alternatives? The level of clean up, and the cost of the clean up, will determine how the land can be reused—whether it is heavy or light industrial, commercial or residential.

West Oakland has numerous past and present pollution sources that affect many different media (air, water, land). Given the seriousness and complexity of the contamination problem for West Oakland residents, it is extremely important to present a manageable yet comprehensive picture of the environmental contamination in this community by bringing together information now spread among a multitude of public agencies.

Such a measure, although only a proxy for the level of contamination and the impact on residents, will allow the community to assess the seriousness of the problem and to identify whether and where critical resources should in fact be devoted to clean up contaminated sites. With time, the community will be able to find out whether the contamination problem is being addressed, and whether it is successfully decreasing residents’ exposure to harmful toxics.



## How Are We Doing?

The indicator shows that a majority of West Oakland residents live within close proximity to a contaminated or potentially contaminated site. Both the exposure of residents to toxic sites and the number of sites per unit land area is higher in West Oakland than in the rest of Oakland.

This indicator shows that about 83% of West Oakland residents live in close proximity (within 660 feet or a sizable block distance) of at least one of the 403 contaminated sites identified in the different public environmental databases in West Oakland.<sup>3</sup> The city of Oakland, where over 2,000 sites have been identified, shows an indicator value of 54%, i.e., 54% of Oakland residents live in the vicinity of contaminated sites. The map shows the location of the contaminated sites identified in West Oakland and the areas within 660 feet of those sites.

The table “Oakland and West Oakland Contaminated Sites” further reports on the number of contaminated sites identified in each database and provides a comparison between Oakland and West Oakland. Although West Oakland only occupies roughly 10% of the Oakland’s land area, the number of contaminated sites in this community is about 19% of the total number of sites in Oakland, showing that this neighborhood has more than its share of sites. We can also observe that West Oakland has 5 of the 11 Oakland sites reported in the Annual Work Plan of the CALSITES database, which are sites known to be contaminated with hazardous substances and considered by the Department of Toxic Substances Control (DTSC) to be of the highest priority for remediation.

Although West Oakland<sup>4</sup> does not have any contaminated sites on the National Priority List for cleanup (these are contaminated sites managed by USEPA under the Superfund Program), the high percentage of West Oakland residents living near an identified contaminated

site indicates that environmental contamination is a serious problem in this community and strongly affects a large majority of its residents. In addition, the distribution of these contaminated sites throughout the neighborhood also poses barriers to future community development, as the issue of brownfields<sup>7</sup> redevelopment in inner city communities has been difficult to address.

## Data Limitations

The *Resident Toxic Exposure Indicator* is based on current information for known or potentially contaminated sites. The sites identified in the ten different databases used to calculate this indicator are not an exhaustive identification of all sites known or suspected to be contaminated.<sup>6</sup> While there may be other lists regarding potential or known contamination, we limited our selection to those databases that were regularly updated and/or maintained and those with credible reporting. Many lists are simply poorly maintained and many potentially contaminated sites simply are not on any of these lists.

The indicator chosen is only a proxy for the level of exposure of residents to the harmful effects of contaminated sites based on a representative number of known or potentially contaminated sites and the population's proximity to it. This indicator does not report on the level of the contamination at each site, or the actual exposure of residents to toxics from contaminated sites.

## What Can You Do About It?

The West Oakland community's ongoing concerns about contamination, blight, air pollution, and other environmental health issues have generated significant community actions to improve quality of life and safety. Several organizations have been very active in working on contamination issues and have worked to increase awareness so that the community can be better prepared to implement their vision of a better West Oakland.

Many residents and community organizations have organized around reducing or eliminating known sources of contamination, both from currently operating facilities and contamination from past activities. Eliminating or reducing the sources of such contamination and cleaning up such sites are a health priority. There are federal and state agencies that have responsibility for monitoring toxic emissions, identifying potential health hazards, and pursuing clean up or remediation. Educating residents about sources, exposure, and protection is also important.

In addition to the public health implications of cleaning up and eliminating sources of contamination, there are also the economic implications of redeveloping contaminated sites or brownfields. At present, redevelopment interest in West Oakland presents a real opportunity to improve environmental quality and public health as well as promote positive economic development. Brownfields redevelopment, promoted through policy making, as well as legal and financial tools, presents an important opportunity for the neighborhood to attain community-wide revitalization and to improve the quality of their environment.

## Contact Information for Additional Resources

*Alameda County Environmental Health Agency*  
[www.co.alameda.ca.us/health/environmental/environ.html#2](http://www.co.alameda.ca.us/health/environmental/environ.html#2)  
510-567-6700

Alameda County Environmental Health Agency coordinates the Local Oversight Program that reviews and oversees the clean-up of underground fuel releases, and inspects facilities and provides technical assistance in case of a fire or accidental spill involving hazardous materials.

*Agency for Toxic Substances and Disease Registry*  
[www.atsdr.cdc.gov/hazdat.html](http://www.atsdr.cdc.gov/hazdat.html)

This agency maintains a Hazardous Substance Release/Health Effects Database (HazDat) which contains substance-specific information such as the ATSDR Priority List of Hazardous Substances, health effects by route and duration of exposure, susceptible populations, etc. It also contains a site contaminant query and a toxicological profiles query which you can access through their web site.

*US Environmental Protection Agency*  
[www.epa.gov/epaoswer/hazwaste/ca/contacts.htm](http://www.epa.gov/epaoswer/hazwaste/ca/contacts.htm)

USEPA is a great resource to learn about the health and other impacts of contamination. Contaminated sites often have more than one environmental agency overseeing the site. Depending on the particular contamination problem, different lead agencies may help residents in identifying risks, determining clean-up requirements for different levels of clean-up, and assessing the site's potential for reuse or redevelopment after clean-up.  
[www.epa.gov/swerosps/bf](http://www.epa.gov/swerosps/bf)

USEPA is the lead federal agency for promoting brownfields redevelopment. USEPA offers tools for financing, tips on how to apply for a Targeted Site Assessment Program, and numerous other resources. At this USEPA Brownfields website you can read about communities that have made major strides in investigating and redeveloping brownfields, including the site assessment pilot project completed for the Fruitvale Transit Village project.

*City of Oakland*  
Urban Land Redevelopment Program  
<http://www.oaklandpw.com/ulrprogram/index.htm>  
Mark Gomez, (510) 238-7314, [mmgomez@oaklandnet.com](mailto:mmgomez@oaklandnet.com)

The Urban Land Redevelopment (ULR) Program is a collaborative effort by the city of Oakland and the principal agencies charged with enforcing environmental regulations in Oakland (Department of Toxic Substances Control, Regional Water Quality Control Board, and Alameda County Environmental Health) to facilitate the cleanup and redevelopment of contaminated properties. The ULR Program clarifies environmental investigation requirements, standardizes the regulatory process and establishes Oakland-specific, risk-based corrective action (RBCA) standards for qualifying sites. RBCA standards are criteria that, when met, adequately address the risk posed by contamination to human health. Through a comprehensive risk-based approach, the ULR Program can help you to design a corrective action strategy that is cost-effective while still providing a high level of protection for the public.

*Community and Economic Development Agency, Redevelopment*  
(510) 238-3015

*7th St./McClymonds Corridor Neighborhood Improvement Initiative*  
(510) 835-0833

The recent report done for the 7<sup>th</sup> Street/McClymonds Corridor Improvement Initiative by Parish Knox on Contaminated Land Use Strategies for West Oakland (June, 2001) is an excellent resource in helping the community to define a plan of action; it identifies federal, state, and local programs available (for petroleum and non-petroleum products) and the steps necessary to leverage these resources.<sup>7</sup>

## Notes

<sup>1</sup>USEPA, Department of Toxic Substances Control (DTSC), Regional Water Quality Control Board (RWQCB), and the City of Oakland Emergency Services (Oakland Fire Department).

<sup>2</sup>The values for this indicator were calculated using the EIP's freeway boundary definition for West Oakland and the Census Tiger data boundary definition for the city of Oakland.

<sup>3</sup>These sites are known or suspected contaminated sites identified at least in one of 10 databases queried.

<sup>4</sup>Nor, in fact, does the city of Oakland.

<sup>5</sup>Abandoned, idled or under-used industrial and commercial facilities where expansion or redevelopment is complicated with real or perceived environmental contamination (USEPA, 2000).

<sup>6</sup>The indicator does not include, for example, specific databases on military sites, ERNS, or information on known sites with lead soil contamination due to accessibility, time constraints, and privacy issues in acquiring such data.

<sup>7</sup>A few examples are: USEPA assessment grants, revolving loan funds, and training and development grants; there are Federal tax credits available to developers to deduct cleanup costs; the DTSC Voluntary Cleanup Program and the CLEAN Program providing loans and assistance to neighborhoods; the City of Oakland loan programs, and the Urban Land Redevelopment (URL) Program intended to clarify the process and help with site evaluation.

# Sensitive Area Toxic Hazard Exposure

## Sensitive Site Toxic Hazard Exposure in Oakland and West Oakland

### Percentage of Sensitive Sites within 1/8 Mile of Priority 1 High Hazardous Sites

West Oakland	Total Oakland
10.53%	2.41%

### Number of Sensitive Sites within High Hazardous Site Buffer

	West Oakland	Total Oakland
Public Schools	1	1
Shelters	1	1
Hospitals	0	1
Senior Centers	0	0
Childcare Centers	0	1
<b>Total</b>	<b>2</b>	<b>4</b>

### Total Number of Sensitive Sites

	West Oakland	Total Oakland
Public Schools	8	82
Shelters	8	47
Hospitals	0	4
Senior Centers	1	4
Childcare Centers	2	29
<b>Total</b>	<b>19</b>	<b>166</b>

This number considers the three medical buildings in the Summit Medical Center as one sensitive site.

Source for Tables: Fire Department Emergency Services, 1997, 2000

*Over 10% of the sensitive sites (schools, hospitals, etc.) in West Oakland are within 1/8 mile of a Priority 1 High Hazardous Facility, whereas citywide less than 2.5% of sensitive sites face this level of risk.*

## The Indicator

This indicator measures the percentage of “sensitive sites”—public schools, childcare centers, parks, shelters, senior centers, and hospitals—that are in close proximity (within 1/8 mile) to facilities considered to present the highest risk for chemical accidents (Priority One High Hazardous sites).<sup>1</sup> Sensitive sites are intended to include areas or facilities used frequently by the more vulnerable groups in the community, i.e., children, the homeless, the sick, and the elderly.

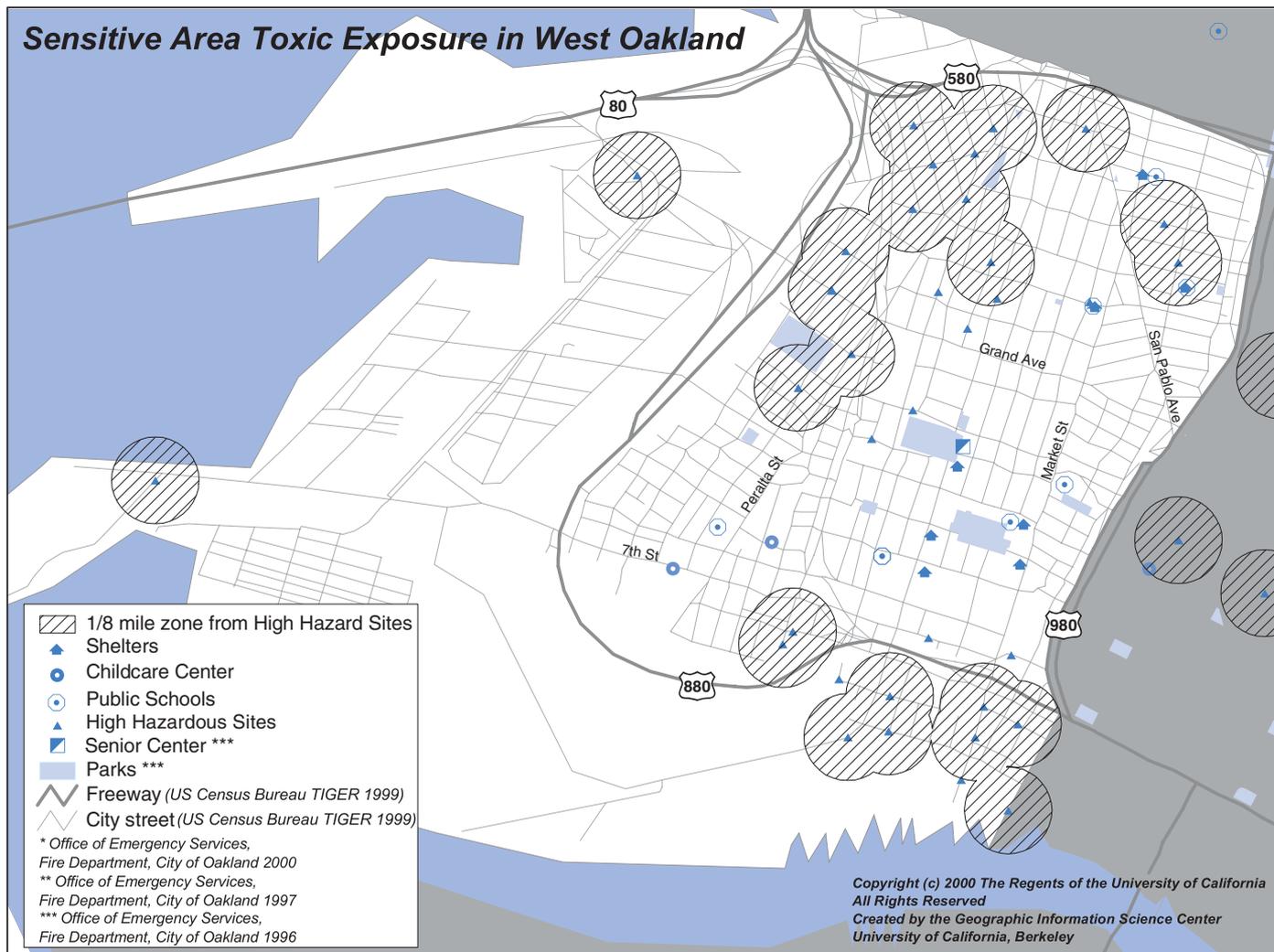
## Why Is This Indicator Important?

Many industries and businesses can have unexpected accidents during the course of normal operations. The consequences of chemical accidents may depend not only on the types of chemicals stored and handled by the facilities and the level of hazard they pose, but also on the manner in which facilities are operated and on how well a community is prepared for these accidents. If a serious accident occurs, communities may have to pay a high price in terms of economic losses, serious public health impacts, or even lives lost.

The identification of the sensitive sites which are in close proximity to facilities most at risk for a hazardous accident can help the community set priorities for action. These actions can range from educating residents and ensuring community preparedness to demanding that the Hazardous Materials Business Plan (HMBP) be revised or completed.

HMBPs are mandatory for existing Priority 1 High Risk facilities.<sup>2</sup> Although these plans only cover activities within the facility’s boundary, they can provide the community with important information regarding the types of potential accidents and their likelihood. By developing a HMBP, the facility manager can be better prepared to deal appropriately with the hazards posed by the facility to both workers and the community.

HMBPs are required to include an Emergency Response Plan for use in the event of a release or threatened release of hazardous material. In the case of hazardous waste generators, additional Contingency Plans are required to minimize hazards to human health and the environment. Unfortunately, community residents may frequently find that a nearby high risk facility has not even developed a HMBP.



## How Are We Doing?

There are a total of 19 sensitive sites in West Oakland, these include senior centers, schools, homeless shelters, etc. This indicator shows that about 10% (2 out of 19 sites) of West Oakland's sensitive sites are within 1/8 mile of a Priority 1 High Hazardous facility. The accompanying table further reports on these sensitive sites, identifying both of West Oakland's sensitive sites—1 school and 1 shelter—that are in close vicinity to these highly hazardous sites.

The city of Oakland shows an indicator value of 2.4 %, i.e., out of a total of 166 sensitive sites in Oakland, only 4 of those are within 1/8 mile of a P1 high hazardous facility—the two West Oakland sites, a childcare center, and Summit Medical Center.<sup>3</sup>

Results for this indicator also clearly demonstrate that West Oakland has more than its share of High Hazardous Sites. Although West Oakland only occupies roughly 10% of the land area of Oakland, over 20% of the total number of Oakland's Priority 1 High Hazardous sites are located in West Oakland.

## Data Limitations

The *Sensitive Area Toxic Hazard Exposure* indicator is based on current information for Priority 1 High Hazardous sites.<sup>4</sup> However, the geographical information regarding sensitive sites is not as current. The data used by city agencies (including Emergency Services) to identify sensitive sites was used for this indicator and mostly dates from 1996-1998.<sup>5</sup> An effort is being made by the Office of Information Technology (OIT) for the city of Oakland to update all geographical information, including information relative to these "sensitive sites," by September 2001.

## What Can You Do About Exposure to Toxic Hazards?

Knowing answers to the following questions will help you in being better prepared in the event of accidents at neighboring facilities: Where does your child spend most of the day? Do you and the teachers know what to do if an unexpected chemical accident happens next to your child's school or playground? Are teachers at the school informed and prepared? Do your neighborhood facilities have Hazardous Materials Business Plans?

Concerns about contamination, air pollution, and other environmental health issues in West Oakland have generated significant community actions to ensure safety and improve quality of life. Several organizations have been very active in increasing awareness about contamination issues so that the community can be better prepared to face chemical accidents in case they occur. In 1998, the African American Development Association (AADA) and Clearwater Revival Company, with the support of USEPA, produced the "Defensible Space Assessment" which reported on facilities handling toxic and hazardous materials and contaminated sites in West Oakland.<sup>6</sup>

Other local agencies have also been supportive of community efforts to raise awareness and preparedness. The Office of Emergency Services in the Oakland Fire Department, in collaboration with AADA, has been involved in developing and administering neighborhood training courses in hazardous materials as part of the Citizens of Oakland Respond to Emergencies (CORE). These programs are especially needed in communities like West Oakland that have a strong industrial presence. Still others have worked to reduce health risks by urging stronger safety procedures, reductions in hazardous material use, or even relocation of facilities.

## Contact Information for Additional Resources

*Hazardous Materials Program (HAZMAT), Office of Emergency Services, City of Oakland*  
Hernando Gomez  
(510) 238-7253

For information regarding HAZMAT data and whether a facility has prepared and maintained its HMBP, contact Vibhor Jain at (510) 238-7491.

*City of Oakland, Office of Information and Technology*  
Brian Kimball  
(510) 238-6855

Contact for information regarding upcoming updates of geographical information for sensitive sites.

*Alameda County Environmental Health Agency*  
[www.co.alameda.ca.us/health/environmental/environ.shtml](http://www.co.alameda.ca.us/health/environmental/environ.shtml)  
(510) 567-6700

This Agency coordinates the Local Oversight Program that reviews and oversees the clean-up of underground fuel releases, inspects facilities, and provides technical assistance in case of a fire or accidental spill involving hazardous materials.

*US Environmental Protection Agency*  
<http://www.epa.gov/enviro>

The USEPA site provides a great deal of information on hazardous waste, its regulation, and impacts.

## Notes

<sup>1</sup>These facilities are defined by the Federal and State thresholds for Acute Hazardous Materials and identified by the local Fire Department Emergency Services. Up to 1995, Alameda County managed information related to high hazardous sites and required risk management plans. Since then, the City of Oakland assumed these responsibilities and this information is now managed by the Fire Department Emergency Services.

<sup>2</sup>There is a great deal of legislation that specifies reporting criteria and defines which businesses should file a Hazardous Materials Business Plan (HMBP). In general, any facility that has quantities of any hazardous material or waste greater than (1) 30 gallons for liquids, (2) 500 lbs for solids, and (3) 300 cubic feet at normal temperature and pressure for gases, has to file a HMBP (with a few exemptions). However, facilities that treat hazardous waste have to follow more stringent criteria. Information in the HMBP has to be reviewed regularly—an Inventory Statement must be updated yearly and the entire HMBP must be reviewed every two years.

<sup>3</sup>Whose three facilities of Summit Medical Center are counted as one sensitive site because of their proximity.

<sup>4</sup>HAZMAT Database (Emergency Services, Oakland Fire Department) is updated monthly, with information being collected on a weekly basis.

<sup>5</sup>There is no accurate information on creation and update dates for sensitive sites files (metadata for these files does not exist.)

<sup>6</sup>The more recent information reported in the Defensible Space Assessment refers to the years 1995 and 1996.

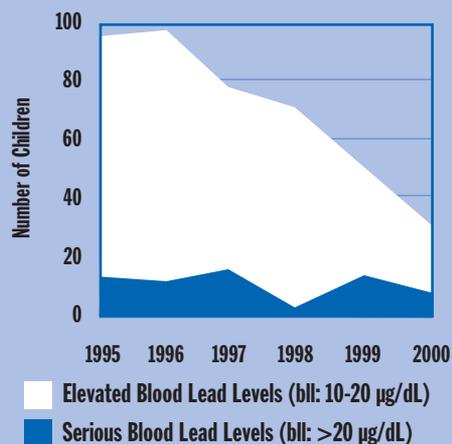
# Lead Poisoning

## West Oakland Zip Code 94607 Ranked for Lead Health Risk Amongst All Alameda County Zip Codes

1 = highest lead poisoning risk

	Elevated Blood Lead Level (bll>10 µg/dL)	Serious Blood Lead Level (bll>20 µg/dL)
1995	2	6
1996	2	4
1997	2	1
1998	3	8
1999	1	1
2000	3	3

## Number of West Oakland Children in Zip Code 94607 Testing with Elevated Blood Lead Levels, 1995-2000



Source: ACLPPP, 1995-2000

*Since 1995, the West Oakland zip code of 94607 has ranked as one of the top three worst zip codes for childhood lead poisoning risk within the entire Alameda County.*

### The Indicator

This indicator measures the number of children known to have tested with elevated blood lead levels (greater than 10 µg/dL) and is reported per year and per zip code. It is a very rough measure of the prevalence of lead poisoning in a given zip code in children ages six and younger. This indicator is only intended to be a proxy for prevalence, because not all children under age 6 have been tested. It is best used to evaluate trends in severity and geographical distribution and demonstrate which areas are more affected than others, rather than to be used in absolute terms.

### Why Is This Indicator Important?

Lead is a neurotoxin that can cause severe health problems in people, particularly in children. Damage to the nervous system, reproductive system, digestive system, and kidneys are some of the common health effects caused by high exposures to lead. Lead poisoning can cause delayed development in children, which leads to learning disabilities as well as other developmental and behavioral problems.

Most adults are not at risk for lead poisoning except if they are exposed to it through their work.<sup>1</sup> Children six years old or younger, on the other hand, are the ones most at risk for lead poisoning (especially ages one to three) as they unintentionally ingest lead,<sup>2</sup> mostly from lead paint or contaminated soil. Young children who live in older homes are at a higher risk, because there is a greater likelihood that there will be lead-based paint hazards in or around their home.<sup>3</sup> Homes built before 1978 often have lead-based paint which can peel or flake, posing a great risk for young children. Renovations in these older homes pose particularly high risks if the work is not done in a lead-safe manner.

Lead in soil is also a major cause of lead poisoning in children. Soil around homes can have high concentrations of lead—posing significant risks to children and adults that play or work with it.<sup>4</sup> Lead in soil can come from the peeling of outdoor lead paint or from the deposition of lead in air emissions. High concentrations of lead in soil can be found in areas close to highways and major roads from past emissions of car exhaust (before leaded gasoline was banned). Also, houses in industrial areas can have lead in soil from industrial emissions. As a neighborhood surrounded by freeways and industrial sites (over 80% of West Oakland's population lives within

1/8 mile of an industrial area), we would expect to find higher levels of lead in soil in West Oakland than in other Oakland neighborhoods. Education and awareness about the dangers and sources of lead contamination and resources to reduce lead poisoning risk in the community are particularly important in West Oakland. As most children do not present any observable symptoms of lead poisoning,<sup>5</sup> the only way to way to measure the extent of lead poisoning in a community is to have all children tested.

Other sources of lead can increase the risks of lead poisoning. Although lead in drinking water is not of concern in the Alameda County area,<sup>6</sup> certain types of cookware such as ceramic pots with a lead-based glaze, and home remedies such as *azarcon* and *greta* can pose additional risks to particular segments of the population.

Lead poisoning is determined by measuring the concentration of lead in the blood in micrograms of lead per deciliter of blood ( $\mu\text{g}/\text{dL}$ ). Blood lead levels below  $10\mu\text{g}/\text{dL}$  (bll  $<10\mu\text{g}/\text{dL}$ ) are considered normal. *Elevated blood lead levels* (bll  $>10\mu\text{g}/\text{dL}$ ) indicate that the child may need to be tested again, and actions should be taken to reduce lead hazards around the child's home. *Severe blood lead levels* (bll  $>20\mu\text{g}/\text{dL}$ ) indicate that a child has a moderate to serious exposure to lead, and medical attention is required (in some cases a child may need to be hospitalized). In cases of severe blood lead levels, lead hazards must be found and removed.

This indicator is intended to track the number of children with elevated blood lead levels (bll  $>10\mu\text{g}/\text{dL}$ ), although information on the number of serious blood lead level cases (bll  $>20\mu\text{g}/\text{dL}$ ) is also monitored.

### How Are We Doing?

Based on different risk factors,<sup>7</sup> the Alameda County Lead Poisoning Prevention Program (ACLPPP) has estimated lead risks throughout Alameda County. ACLPPP has rated West Oakland as a “Critical, Highest Risk” zone. Since 1995, the *Lead Poisoning* indicator for the West Oakland zip code of 94607 has ranked in the “worst top three” zip codes within the entire county of Alameda. Actually, in 1999, the West Oakland zip code 94607 was the Alameda County zip code with the *highest* number of reported cases of children with elevated blood lead levels (bll  $>10\mu\text{g}/\text{dL}$ ). In 1999, this zip code also reported the *highest* number of the severe blood lead level cases (bll  $>20\mu\text{g}/\text{dL}$ ).<sup>8</sup>

Results for severe blood lead level cases show a greater variation during the 1995-2000 period than elevated blood lead level cases. In both categories (elevated blood lead levels and severe blood lead levels), the West Oakland zip code ranked as first and third highest risk in all of Alameda County in 1999 and 2000, respectively. During 2000, zip codes along the water's edge reported the highest number of children with elevated blood lead levels—with 94601, 94621, and 94607 recording the highest numbers of affected children.

Overall, during the period 1995-2000 the number of cases of children with elevated blood lead levels and serious blood lead levels in Oakland have been decreasing. However, we should note that these numbers are directly related to the level of screening that is conducted in the different zip codes. In Alameda County the total number of children that were tested represented less than 8% of the children under six years of age.<sup>9</sup> Unfortunately, there is no data regarding the actual number of children that are tested each year in each zip code.<sup>10</sup>

### Data Limitations

The *Lead Poisoning* indicator is based on information that is gathered by the ACLPPP and entered in the Housing and Medical Lead Environmental Testing (HAMLET) Database. There are a few limitations that need to be taken into account when interpreting results for this indicator. The values shown for this indicator underestimate the number of children known to have blood lead levels of concern (bll  $>10\mu\text{g}/\text{dL}$ ).

ACLPPP estimates that their data represents about 90% of all the lab tests done in the county, where unreported results from a few smaller labs conducting blood lead level testing account for about 10% of all tests performed in the county. Furthermore, a portion of the blood lead test

**Number of Children Under Age 6 with Elevated Blood Lead Levels (bll  $>10\mu\text{g}/\text{dL}$ ) by Zip Code, 2000**



Source: ACLPPP, 2000

results above 10 µg/dL do not have zip code information and were not included in the final tally of each zip code.

However, even if all labs reported their results to ACLPPP, the figures obtained would still only represent a fraction of the total number of children that have elevated blood lead levels. Children may suffer from lead poisoning but never be tested. No one really knows the actual number of lead poisoned children in an area (e.g., West Oakland), as there is no comprehensive screening of the overall population in this age group.

Blood lead tests are usually performed at a doctor's request because there is some reason to suspect that a child might be suffering from lead poisoning. For example, ACLPPP recommends that a child be tested if he/she lives in a house that has a lead problem, lives close to a contaminated site (i.e., where paint, dust, or soil tests were above specific threshold levels), or if a sibling has tested with elevated blood lead levels.

A large percentage of children testing with normal blood lead levels (bll < 10 µg/dL) were recorded without zip code information. This makes it infeasible to get a reasonable estimate of the total number of children tested in each zip code. It is therefore impossible to estimate the percentage of all screened children who have lead poisoning by zip code. Efforts to improve recording of address information for all children tested (and not only lead poisoned children) will help identify the severity of the problem in specific areas. The number of children tested can vary greatly from area to area and from year to year. ACLPPP has put a great deal of effort into increasing blood lead testing, but because of yearly inconsistencies in program funding, the county often focuses work on a few target areas believed to be at high risk for lead poisoning.

Despite all the limitations inherent in the data, it is still the best information available to the community. These limitations clearly show that additional screening and data collection efforts are needed to better estimate the prevalence of lead poisoning in children and more accurately assess the extent and severity of the lead problem in West Oakland.

### What Can You Do About Lead Poisoning?

One of the most important things you can do to improve the well-being of your community and reduce the number of children affected by lead hazards is to have children in your community tested. In addition, awareness and education about lead hazards and lead exposure are critical to reducing the lead poisoning risk in a community.

The ACLPPP provides significant help in the detection, abatement, and prevention of lead problems to the residents of Alameda County. Services are especially aimed at owners of pre-1978 residential property. ACLPPP provides free paint testing kits (upon request), free Lead Safe Home renovation classes to property owners who are planning home renovations or are concerned about lead hazards in the home, loans and grants on an emergency basis for homes with lead poisoned children, and a free lending program of High Efficiency Particulate Air Filter (HEPA) vacuum cleaners to property owners.

ACLPPP also offers expert information to the community and in some cases technical assistance.<sup>11</sup> Assistance to tenants depends on the condition of the property and the cooperation of the property owner, except if there is a known lead-poisoned child. If there is a known lead-poisoned child, the agency may carry out enforcement actions in cases where the rental property owner is not cooperating. ACLPPP has been working with other agencies—including HUD, USEPA, Alameda County Health Services, the City of Oakland and other cities, Child Care Licensing Division (CDSS), local schools, and other organizations such as Bananas, Inc.—to reduce lead hazards in communities within Alameda County.

**Annual Average Number of Oakland Children Testing with Elevated Blood Lead Levels (bll>10µg/dL) by Zip Code, 1995-2000**



Source: ACLPPP, 1995-2000

## Contact Information for Additional Resources

*Alameda County Lead Poisoning Prevention Program (ACLPPP)*  
Information Line: 1-800-B-Lead-Safe  
Information/Health Questions: (510) 567-8282  
[www.aclppp.org/lead.htm](http://www.aclppp.org/lead.htm)  
[www.aclppp.org/regs.htm](http://www.aclppp.org/regs.htm)

This site has information on lead poisoning, sources of lead, and lead abatement practices, among many other useful resources. On the regulations web page, disclosure needs of any information concerning lead-based paint upon sale or lease of pre-1978 residential property can be found.

*California Department of Health Services*  
Information Line: (510) 622-5000  
Occupational Health: (510) 622-4300

*California Occupational Lead Poisoning Prevention Program*  
(510) 540-3448

*City of Oakland Housing Complaints*  
(510) 238-3381

*National Lead Information Center (NLIC)*  
1-800-424-LEAD (1-800-424-5323)

*USEPA Indoor Air Quality Information Clearinghouse*  
800-438-4318 (IAQ hotline)  
800-SALUD-12; 725-8312 (Spanish)  
[www.epa.gov/lead/](http://www.epa.gov/lead/)  
[www.epa.gov/iaq/iaqinfo.html](http://www.epa.gov/iaq/iaqinfo.html)

## Notes

<sup>1</sup>For example, working in a foundry, metal casting, or plating, or in the construction industry.

<sup>2</sup>Children tend to absorb ingested lead into the blood more readily than adults, especially those children who have diets low in iron and calcium.

<sup>3</sup>According to HUD and the California Department of Health Services, the standard for lead-based paint is 5,000 ppm (by laboratory analysis) or 1.0 mg/square centimeter (by XRF analysis). Also, according to USEPA, under the new standards, lead is considered a hazard if there are greater than 40 micrograms of lead in dust per square foot on floors, and 250 micrograms of lead in dust per square foot on interior window sills.

<sup>4</sup>According to Cal-EPA, lead levels that are equal to or above 400 ppm in bare soil are considered hazardous for children. Lead levels that are equal to or above 1,000 ppm are considered hazardous for adults.

<sup>5</sup>Symptoms may include diarrhea, stomach cramps, lethargy, vomiting, or seizures in some severe cases.

<sup>6</sup>Lead levels in EBMUD water are well below federal limits (the Federal Maximum Contaminant Limit is 15 ppb).

<sup>7</sup>Lead poisoning risks were estimated based on income, ethnicity, and age of housing stock, where highest risk areas such as West Oakland are the ones with the highest percentages of low income and minority populations, and pre-1950 housing structures. Risks were based on 1990 Census Data for poverty, age of housing stock, and race/ethnicity.

<sup>8</sup>Although ACLPPP has been collecting data regarding Alameda County blood lead test results since 1992 (which constitute the data source for this indicator and is shown in the graph with  $bll > 10\mu\text{g/dL}$ ) it is best to look at the data from 1995 on, when data gathering procedures were already well established.

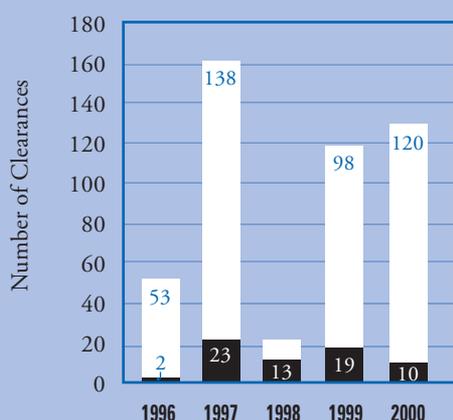
<sup>9</sup>This estimate only takes into account the blood lead tests reported to ACLPPP (and a rough estimate of number of Alameda County children in this age group based on 1990 census population data).

<sup>10</sup>Some results for  $bll > 10\mu\text{g/dL}$  have no zip code information—these were not counted in the tabulation of indicator values for the different zip codes. As to results for  $bll > 20\mu\text{g/dL}$ , mostly they reported on zip code information and therefore undercounts due to unreported zip codes do not occur (except during 1999 and 2000, but even then, a small number).

<sup>11</sup>This technical assistance includes lead-based paint inspections, environmental assessments, pre- and post-clearance testing.

# Lead Abatement

**Number of Units Cleared per Year in Lead Abatement Projects in West Oakland and Oakland, 1996-2000**



■ West Oakland  
□ Rest of Oakland

Source: ACLPP, 2000

*Although West Oakland is considered one of the highest risk areas in Alameda County for lead poisoning, the number of lead abatement projects in West Oakland in 2000 was less than 8% of the total for Oakland.*

## The Indicator

This indicator tracks the number of housing units where lead hazard reduction work has been completed per year and per census tract. Completed lead abatement projects are referred to as “clearances.” The indicator value reported for West Oakland corresponds to the number of housing units that have been cleared in the West Oakland census tracts,<sup>1</sup> whereas the value for Oakland corresponds to the total number of housing units cleared in all Oakland tracts.

## Why Is This Indicator Important?

Lead poisoning can have devastating effects on the health and well being of communities. Lead presents a serious health risk for people that are exposed to it, particularly children. One of the frequent causes of lead poisoning in children is through ingestion of lead, mostly from lead-based paint chips or contaminated soil. Young children who live in older homes are at higher risk, because there is a greater likelihood that there will be lead-based paint hazards in or around their home.<sup>2</sup> Homes built before 1978, with peeling or chipping lead-based paint, pose the most risks for young children. Renovations in these homes are particularly hazardous if the work is not done in a lead-safe manner.

To monitor lead contamination problems in a neighborhood it is important not only to assess the extent of the problem (e.g., by tracking the *Lead Poisoning* indicator), but also to evaluate how well the community is doing in abating the existing problem. The risk of lead poisoning in pre-1978 (and especially pre-1950) homes is not likely to decrease without some level of intervention.

Since 1995, the Alameda County Lead Poisoning Prevention Program (ACLPPP) has been recording the number of lead abatement projects,<sup>3</sup> including consultations with owners or those doing repair work regarding risk assessment. Many of these clearances were done as a result of HUD funded lead hazard reduction projects.

Knowing how many units have been cleared through lead abatement projects gives us an approximate measure of the level of lead abatement in a community.

Using this information, we can identify where remediation efforts and resources have been targeted in the past. Although a significant percentage of lead abatement projects occur in high risk areas, a more thorough comparison of the level of abatement and the level of risk in particular communities can help identify priority areas for future remediation work.

## How Are We Doing?

The map of the Lead Poisoning Risk in Alameda County (ACLPPP, 1999) in the *Lead Poisoning* Indicator shows that West Oakland is considered a “Critical, Highest Risk Area.” It is therefore of particular importance to know how well lead hazards are being reduced in this community. In the year 2000, this indicator shows that 10 West Oakland housing units completed lead abatement projects, and between zero and three units were cleared per census tract.<sup>4</sup>

Looking at the evolution of this indicator during the last five years, we cannot see a clear trend for either Oakland or West Oakland. Although there are numerous barriers to the completion of lead abatement projects,<sup>5</sup> the community needs to find ways to move this indicator in a more positive direction.

The number of clearances in West Oakland during the past year (2000) was less than 8% of the total for Oakland, even though West Oakland represents slightly over 10% of the City’s total land area and is an area where the lead poisoning risk level is considered “critical”.

West Oakland fares slightly better when we look at the aggregate picture for the period 1996–2000. The indicator’s average for West Oakland over the last five years was about 13 units per year (13.4 units/yr), while in Oakland it averaged almost 100 units per year (97.4 units/yr)—that is, West Oakland clearances represent slightly less than 14 % of the Oakland’s total. Although the cumulative picture is better than the 2000 indicator’s value, it still reveals that West Oakland is not attaining as much lead abatement as its “critical risk” level would advise.

A comparison of the geographical distribution of lead poisoning risk levels and lead abatement projects in Oakland clearly demonstrates the need for increasing lead abatement efforts in West Oakland and other high-risk areas. A more detailed look at the distribution of lead abatement projects in West Oakland alone reveals that the number of housing units that completed lead hazard reduction projects is not uniform throughout the neighborhood. Areas around Lowell Park, Wade Johnson Park, and the Defremery Recreation Center have received little or no abatement work.<sup>6</sup>

## Data Limitations

The lead abatement data (number of units that have “cleared”) is from the ACLPPP Housing Database. This data does not provide us with information regarding the level of abatement and whether or not the problem is likely to occur again.<sup>7</sup> It is important to note that “clearance” does not mean that lead contamination is completely eliminated from a unit, but that the lead hazard was reduced or abated in some way.

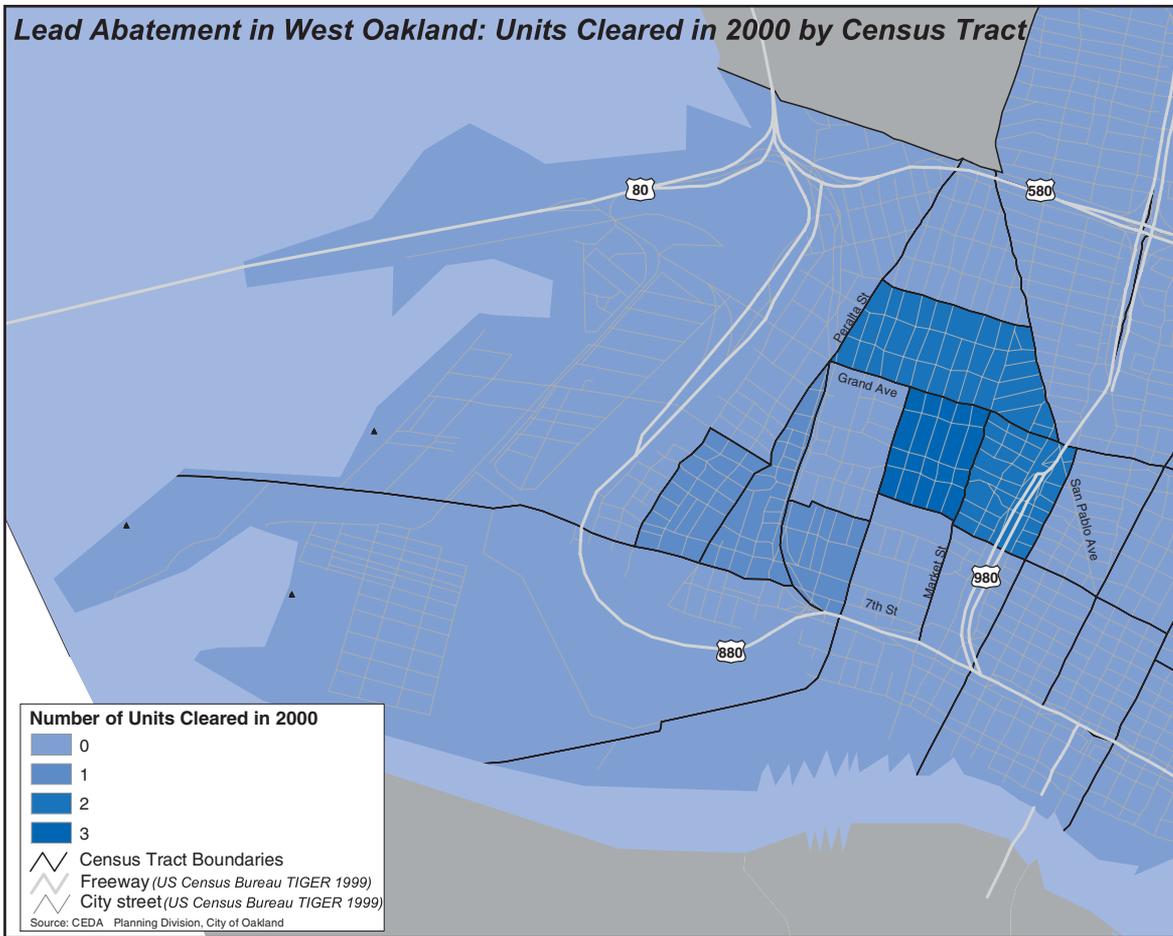
The data used in this indicator refers only to projects tracked by ACLPPP, and leaves out other lead abatement projects where ACLPPP was not involved in any capacity. ACLPPP has several avenues of intervention. For example, their efforts in educating homeowners, training contractors, and providing lead-safe painting preparation kits are not captured in this indicator, although these activities can often result in abatement activities.

ACLPPP is the agency that is the primary administrator of all major lead hazard reduction programs and grants. By tracking ACLPPP activity we can get a good sense of how well a community is doing regarding lead abatement. The data on number of units cleared is a conservative estimate because a small percentage of cleared units do not show a correct census tract identification—this percentage ranges from 31% (in 1996) to less than 1% of the total number (in 1997 & 1999).<sup>8</sup>

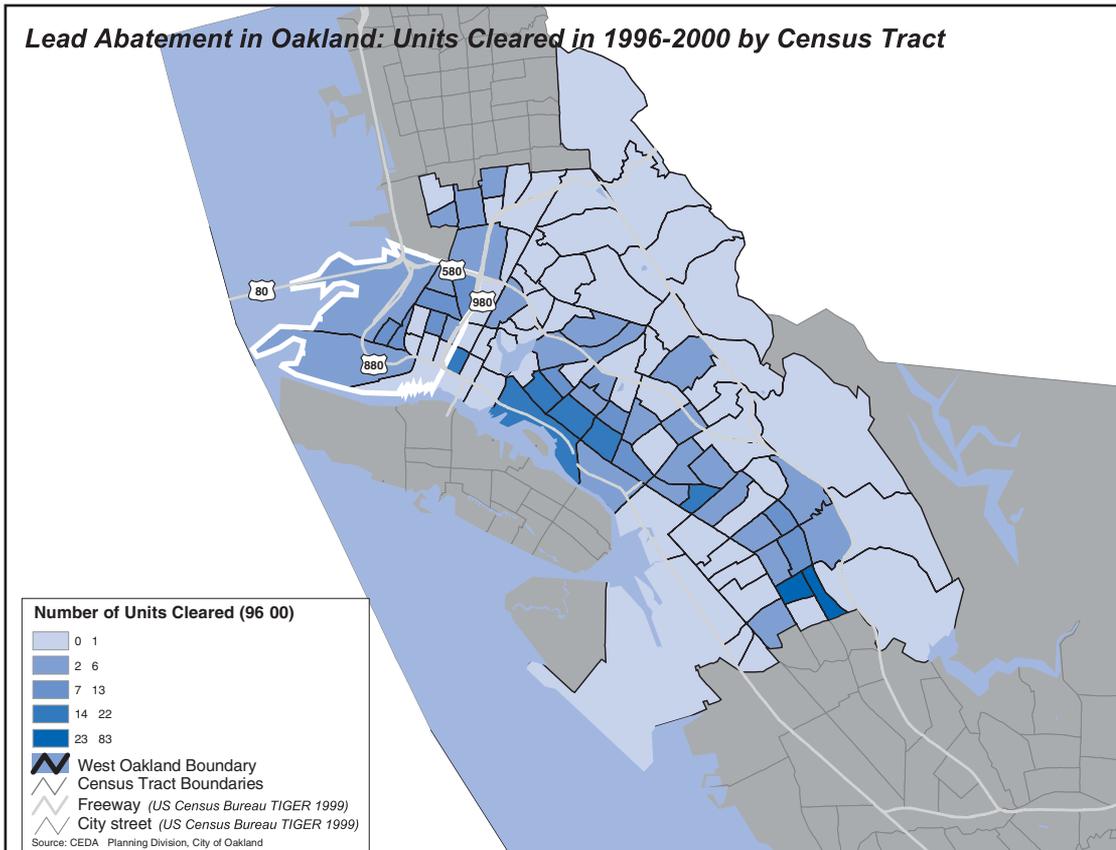
## What Can You Do About Lead Abatement?

You can help reduce lead hazards by learning what constitutes a potential hazard, what can be done to prevent or reduce lead hazards, and what resources are available to help you clean up your home and your community from lead contamination. The ACLPPP provides significant help in the detection, abatement, and prevention of lead problems for the West Oakland community. Their services are especially aimed at owners of pre-1978 residential property. ACLPPP provides free paint testing kits (upon request), lead-safe painting preparation kits,<sup>9</sup> free Lead Safe Home remodeling classes to property owners who are planning home renovations or are concerned about lead hazards in the home, loans and grants on an emergency basis for homes with lead-poisoned children, and a free lending program of High Efficiency Particulate Air Filter (HEPA) vacuum cleaners to property owners. ACLPPP also offers expert information to the community and, in some cases, technical assistance.<sup>10</sup> Assistance to tenants depends on the condition of the property and the cooperation of the property owner, except when there is a known lead-poisoned child. The agency also carries out enforcement actions in cases where the rental property owner is not cooperating and where there is a lead-poisoned child.

**Lead Abatement in West Oakland: Units Cleared in 2000 by Census Tract**



**Lead Abatement in Oakland: Units Cleared in 1996-2000 by Census Tract**



ACLPPP has been working with other agencies—HUD, USEPA, Alameda County Health Services, the city of Oakland and other cities, Child Care Licensing Division (CDSS), local schools, and other organizations such as Bananas, Inc.—to reduce the lead hazard in communities within Alameda County.

## Contact Information for Additional Resources

### *Alameda County Lead Poisoning Prevention Program (ACLPPP)*

Information Line: 1-800-B-Lead-Safe  
Information/Health Questions (510) 567-8282  
[www.aclppp.org/lead.htm](http://www.aclppp.org/lead.htm)  
[www.aclppp.org/regs.htm](http://www.aclppp.org/regs.htm)

This site has information on lead poisoning, sources of lead, and lead abatement practices, among many other useful resources. On the regulations web page, disclosure needs of any information concerning lead-based paint upon sale or lease of pre-1978 residential property can be found.

### *National Lead Information Center (NLIC)*

1-800-424-LEAD (1-800-424-5323)

### *USEPA Indoor Air Quality Information Clearinghouse*

800-438-4318 (IAQ hotline)  
800-SALUD-12; 725-8312 (Spanish)  
[www.epa.gov/lead/](http://www.epa.gov/lead/); [www.epa.gov/iaq/iaqinfo.html](http://www.epa.gov/iaq/iaqinfo.html)

### *California Occupational Lead Poisoning Prevention Program*

(510) 540-3448

### *California Department of Health Services*

Information Line (510) 622-5000  
Occupational Health (510) 622-4300

### *City of Oakland, Housing Complaints*

(510) 238-3381

## Notes

<sup>1</sup>West Oakland Census Tracts are the ones that fall, at least partly, within West Oakland freeway boundaries, namely 1990 Census Tracts 4014-4027.

<sup>2</sup>According to US Housing and Urban Development and the California Department of Health Services, the standard for lead-based paint is 5,000 ppm (by laboratory analysis) or 1.0 mg/square centimeter (by XRF analysis). Also, according to USEPA, under the new standards, lead is considered a hazard if there are greater than 40 micrograms of lead in dust per square foot on floors, and 250 micrograms of lead in dust per square foot on interior window sills.

<sup>3</sup>Housing Database, ACLPPP.

<sup>4</sup>West Oakland Tracts 4014-4027 combined.

<sup>5</sup>Barriers such as the lack of the owners' financial capability, the high demand for housing which reduces the incentive to make property improvements (including lead hazards), the limited capability of enforcement, and the irregular funding base for lead abatement programs.

<sup>6</sup>There was only one unit cleared in the last 5 years in the area near Wade Johnson Park (census tract 4021).

<sup>7</sup>In fact, some of these units may be double counted if for example some type of lead abatement is needed during later repairs or renovation projects.

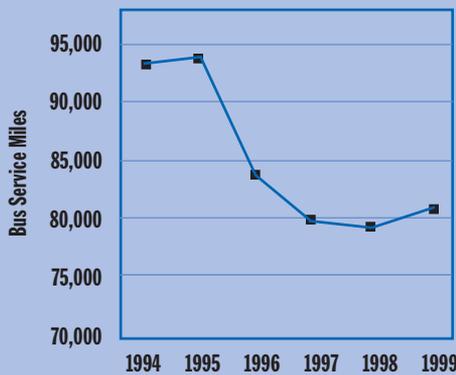
<sup>8</sup>Information regarding 1995 — the first year that this data was recorded — was found to be unreliable and was therefore not used in the analysis of this indicator (e.g. data for this year registered a 74% rate of unknown census identification).

<sup>9</sup>These kits include tools, safety equipment, and educational materials for conducting lead safe painting projects.

<sup>10</sup>For example, lead-based paint inspections, environmental assessments, pre- and post-clearance testing.

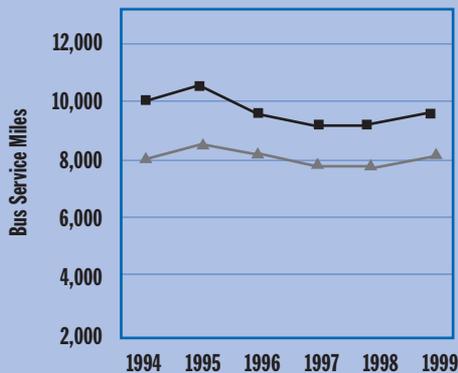
# Transit Mobility

**Monthly Average Weekday Bus Service Miles All Routes Serving West Oakland**



Source: AC Transit, 2000

**Monthly Average Weekend Bus Service Miles All Routes Serving West Oakland**



■ Saturdays  
▲ Sundays

Source: AC Transit, 2000

*From 1995 to 1999, the West Oakland neighborhood experienced a 15% reduction in the frequency and range of bus service.*

## The Indicator

This indicator tracks the efficiency and accessibility of public transportation within West Oakland. The indicator measures the average monthly AC Transit bus service miles for the routes that travel through West Oakland from 1994 through 1999. Service miles are an aggregate measure of every mile driven for a particular bus route over a particular period of time. It is a helpful way to account for the total number of bus routes and the frequency of service for each route within a single measurement. This indicator also measures the number of West Oakland residents that live within 1/8 of a mile from a bus stop.

## Why Is This Indicator Important?

Mobility is about travel time and the movement of people. While many West Oakland residents live within close proximity to a bus stop, this access is of little use if the buses do not go where people need to go or if the buses do not run at the right times of day. Although this indicator does not answer the “How long will it take me to get there?” question, it tries to generally measure how well public transit can deliver people where they want to go, when they want to go there. It considers the frequencies of buses and the hours of the day that they run.

The Automobile Association of America reports that the average cost of owning and operating a vehicle is about \$6,500 per year. As a result, for those who earn a minimum wage equivalent to \$11,500 per year before taxes, car ownership is close to impossible. Even if a car can be bought, operated and maintained for half of the average cost, it is simply too expensive for many low-income families.<sup>1</sup> Unlimited access to transbay and local AC Transit buses is much less costly, at less than \$1,000 per year.<sup>2</sup>

In West Oakland, many residents depend on public transit for their transportation needs. These families are cut off from the growing pool of jobs that require a car for access. They have reduced access to grocery stores, schools, and other basic life essentials. Hours are wasted every day waiting for buses that run infrequently, or making complex trips with multiple links or connections between different routes. Long walking distances from one’s home to a bus stop reduces the likelihood that the bus can be a realistic transportation option.

## How Are We Doing?

West Oakland has the advantage of being located with easy access to many of the Bay Area's transportation networks: freeways including I-80, I-580, and the I-980, BART, and AC Transit. The current AC Transit routes with stops in West Oakland are 13, 14, 15, 62, 72, 82, 88, 315, 362 and (Transbay) B, F, K. While West Oakland is well located in regards to numerous transportation options, significant cutbacks in bus service that began in 1995 substantially reduced the bus service miles within West Oakland.

Mobility via transit requires as a first step that residents have access to bus stops. In 1999, 85.3% of West Oakland residents lived within 1/8 mile of a bus stop. This measurement excludes routes 315 and 362. Using the same population data, 75% lived within 1/8 mile of a bus stop with weekend service. Living close to a bus stop eliminates the need to use different modes of transportation in the same trip (i.e., driving a car to the bus stop, parking, and then taking the bus). The close proximity of most residents to a bus stop means that even many people with impaired mobility can easily access transit services.

The next step is to have dependable buses that run frequently and go to the right places. Here the news is not as good. From 1995 to 1999, West Oakland lost 15% of its monthly average weekday AC Transit bus service miles.

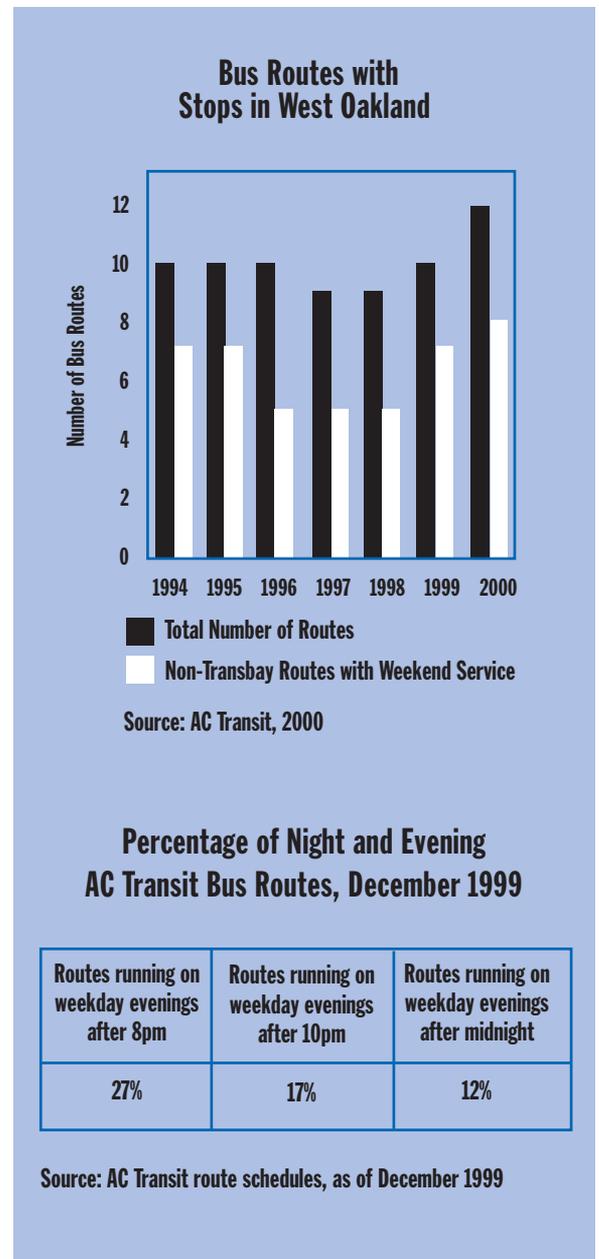
In 1994, 10 AC Transit routes serviced West Oakland, and every one of the non-transbay routes had evening and weekend hours. AC Transit made major cuts in service in 1995 and 1996. During that time, West Oakland lost one transbay route and weekend service on two non-transbay routes. The next changes happened in 1999, when routes 315 and 362 were added to support welfare-to-work transitions—bringing the total number of bus routes in West Oakland to 12.

By the end of 2000, nine of these routes had weekend routes. Only the number 82 offers late night service between 1:00 AM and 5:00 AM. As shown in the adjoining table, much of the transit service in Alameda County operates on reduced schedules or not at all in the evening, late night, and on weekends. Only 23 out of 86 AC Transit routes continue past 8:00 PM, only 15 operate after 10:00 PM and only 10 operate until midnight.<sup>3</sup>

During AC Transit's extensive system-wide cuts in service, West Oakland did lose bus routes, but the most significant impacts to the community came from reductions in the frequency of bus service and cuts in evening and weekend routes. The charts of average monthly weekday service show a sharp annual decrease in service in 1995, which slows down after 1996 and continues through 1998. It is not until 1999 that there is a very slight increase in service. For weekend service, the trend is the same, but less dramatic. These changes in service are not as much the result of a decrease in routes as they are a result of cutbacks in service on existing routes. West Oakland lost bus service in 1995 and that bus service has yet to be restored.

## Data Limitations

This indicator originally was intended to track how long it took residents from different parts of West Oakland to reach each of five key locations from their West Oakland neighborhood. AC Transit historical data is limited. Schedule information is not kept on databases and neither is historical route information. As a result, it was not possible to get the original data that we had hoped for. Instead we are using proximity to bus stops, vehicle service miles, and the number of routes as a proxy—assuming that if enough buses ran frequently enough and stopped close enough to one's home, travel time would be low and mobility would be improved.



## What Can You Do About Transit Mobility?

You can help improve the bus service in your community by getting involved with organizations that already care about this issue. Bus rider advocacy groups, such as the bus riders union are working to improve bus service for the people who depend on it. Other groups who care about community issues, such as the 7<sup>th</sup> Street/McClymonds Corridor Neighborhood Improvement Initiative, the Coalition for West Oakland Revitalization (CWOR), and Building Opportunities for Self-Sufficiency (BOSS) are also working on community transportation needs. Joining such an organization or letting them know your transit concerns is one way to make your voice heard. AC Transit board members are elected officials. If you need more bus stops or better bus service, let them know.

## Contact Information for Additional Resources

### *AC Transit*

<http://www.actransit.org>

(510) 891-4777

Greg Harper is the Director for Ward 2, West Oakland's AC Transit Ward.

### *Alliance for AC Transit*

(510) 291-2879

The mission of the Alliance is to advocate for adequate funding for AC Transit local, transbay, and paratransit service; to educate the public and decision-makers about the need for public bus transit, and to develop a constituency supportive of AC Transit.

### *Building Opportunities for Self-Sufficiency (BOSS)*

<http://www.self-sufficiency.org/contents.html>

(510) 663-6580

BOSS is dedicated to ending poverty and homelessness in the East Bay Area. Their community building team can help with advocacy for improved transportation services in your community.

### *The Bay Area Transportation and Land Use Coalition, Transportation Justice Campaign*

<http://www.transcoalition.org/index.html>

(510) 740-3100

BATCLU is working to shape and influence the Metropolitan Transportation Commission's launch of regional welfare-to-work planning. The campaign is calling for several essential programs, including: a lifeline transit discount pass, 24/7 transit in the urban core, new reverse commute services, and child care transportation services. Included in their strategies is the promotion of creative partnerships among service providers, churches, foundations and the business community.

## Notes

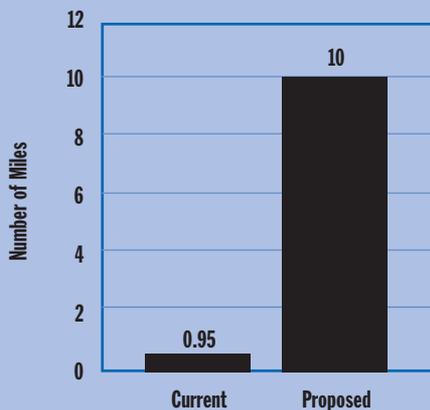
<sup>1</sup>BATLCU, 1999. *Transportation Divide*.

<sup>2</sup>This figure was calculated by considering the purchase of twelve 31-day AC-Transit passes at \$80 per pass.

<sup>3</sup>BATLCU, 1999. *Transportation Divide*.

# Bikeable Streets

**Bike Paths in West Oakland**



Source: Bicycle Master Plan, 2000

*West Oakland currently has only 0.95 miles of designated bikeways, although Oakland's Bicycle Master Plan has proposed adding 10 miles of new bikeways.*

## The Indicator

This indicator tracks the total miles of designated bikeways in West Oakland, which include bicycle paths or multi-use trails, bicycle lanes, and bicycle routes. According to state law, bicycles are allowed on all city streets. Bikeways refer to streets or corridors that have been designed or improved to facilitate easier bicycle use. This indicator uses the freeway boundaries to define the West Oakland neighborhood.

## Why Is This Indicator Important?

Bicycling for transportation is easy, enjoyable, and good for your health. Regular commuting by bicycle is less costly than owning a car or taking the bus, and like other fitness programs, contributes to general health and well-being. Bicycling provides great recreational opportunities for youth and families, and builds community as people interact on neighborhood streets. Bike paths often provide access to recreational opportunities for the community, including access to parks and other open spaces (e.g., the Bay). Bicycling also avoids the congestion and air pollution caused by automobile usage.

The Bay Area's mild climate allows for year-round bicycle commuting. The easy access to BART, AC Transit, and the ferry service to San Francisco create opportunities for bicyclists to extend their trips beyond West Oakland. The numerous bicycle advocacy groups in the East Bay create a supportive community for local cyclists. Despite these promising conditions, few people are likely to consider bikes as a serious transportation option without designated bikeways, bicycle parking, and safety education.

## How Are We Doing?

West Oakland currently has only 0.95 miles of bikeways. These are divided between a short, unsigned stretch on West Street and an off the street trail near Port Park. Yet people *are* using bicycles in West Oakland. Inadequate bikeways contribute to accidents between bicyclists and cars. From 1985-1994, the city of Oakland had an average of 225 of these accidents per year.

Most of Oakland's existing bikeways are in North Oakland. The city of Oakland recognizes the need to provide improved bikeways for the rest of the city's residents, and their 1999 Bicycle Master Plan proposes significant improvements to the bikeway system. If the proposals in the plan are implemented, West Oakland will gain more than 10 miles of new bikeways, in addition to bike access over the Bay Bridge. The city's new bike plan is clearly good for West Oakland bicyclists.

A portion of the proposed bikeways through West Oakland is a designated section of the San Francisco Bay Trail. The Bay Trail is a proposed regional hiking and bicycling trail around the perimeter of the San Francisco and San Pablo Bays. The Trail Plan was prepared by the Association of Bay Area Governments pursuant to Senate Bill 100. This bill mandated that the Bay Trail must: provide connections to existing park and recreation facilities; create links to existing and proposed transportation facilities; and, be planned in such a way as to avoid adverse effects on environmentally sensitive areas. Once the West Oakland section of the trail is completed, the neighborhood will have a significant increase in access to regional recreational activities and the Bay itself.

High quality of life means that people can live, work, learn, and play in their neighborhood and feel comfortable and safe. It means that the surroundings make the residents' lives better in ways that they value. Like pedestrian activity, avid bicycle use can be an indicator of community quality of life. Bike riding provides opportunities for community members to interact in the neighborhood and outside their homes. These types of interactions form the heart of strong community feeling in any neighborhood and help contribute to a high quality of life.

## Data Limitations

This indicator does not describe how much bicycle riding is happening in West Oakland or what groups of people in the community are riding bikes. Bicycle traffic and usage may be the more relevant measure but that information is difficult to get without performing a survey. Assessing the length of bike paths is a proxy for whether bicycling is supported or encouraged in the community and by the city.

## What Can You Do About Bikeable Streets?

The city of Oakland completed a Bicycle Master Plan in 1999. While many miles of new bike paths for West Oakland have been proposed, these plans still need to be implemented. Every time the City wants to install a new bike lane, a public participation process is required. Citizens who care about bikeable streets have an opportunity to become involved in these processes and help the city move forward with these plans.

## Contact Information for Additional Resources

*Kathryn Hughes*  
City of Oakland, Public Works  
(510) 238-6493

*East Bay Bicycle Coalition*  
<http://www.ebbc.org/>  
East of the Hills call: (510) 939-5181  
West of the Hills call: (510) 530-3444

*Bike the Bridge! Coalition*  
<http://guest.xinet.com/bike/btbc/>  
(510) 273-9288

*San Francisco Bay Trail*  
Janet McBride  
[www.abag.ca.gov/bayarea/baytrail/index.html](http://www.abag.ca.gov/bayarea/baytrail/index.html)  
(510) 464-7935 or [JanetM@abag.ca.gov](mailto:JanetM@abag.ca.gov)

# Appendix A - Methodology

## Amount of Air Pollutants Released

### Data Source

Toxic Release Inventory (TRI) Data, EPA for reporting years 1987-1998, downloaded as .CSV files from Envirofacts EPA site using “Easy Query” search. TRI. 1998 was the most recent dataset available when data was downloaded and analyzed in 2000, TRI updates yearly.

### Methodology

The main dataset was retrieved by downloading data for the city of Oakland. The fields that were used to retrieve data for the calculation of this indicator were: reporting year; sum of air releases (corresponding stack and fugitive air releases from TRI facilities); city name (Oakland); county name (Alameda); state abbreviation (CA); facility Zip Code. Other fields used in more detailed queries to acquire additional information on TRI air releases were: facility name; facility address; TRI facility ID code; chemical name; carcinogen indicator.

To calculate this indicator numerous sorting operations had to be applied to the original dataset in order to get the necessary summary information for the different years. Downloaded CSV files were converted into Excel files and the data sorted by zip code. The Envirofacts Zip\_Code information had to be converted into a “SimpleZip” column which retrieved the 5 first digits of the Zip\_Code field. Data was then sorted by zip code and by reporting year. Indicator values report the Sum of TRI Air Releases (stack and fugitive air releases) per zip code per year. In the 1995-1998 West Oakland versus Oakland comparison, values for “West Oakland” were estimated by adding up the total air releases for the zip codes 94607 and 94608, based on a query that delimited retrieved information to the city of Oakland (thus not counting the amounts from zip code 94608 released in the city of Emeryville for the Zip Code 94608).

Additional information regarding release of carcinogens was obtained using the Risk-Screening Environmental Indicators Model (RSEIM).[1] This model was also used to perform the regional analysis presented, namely a comparison of total air releases (and carcinogen releases) for all Zip Codes within the 9 Bay Area County region.

### Contact Information

EPA Envirofacts Website: [www.epa.gov/enviro/htm](http://www.epa.gov/enviro/htm)

## Air Pollution Health Risks

### Data Sources

The base data for the indicator is contained in the Risk-Screening Environmental Indicators Model (RSEIM), version 1, July 1999 of the Office of Pollution Prevention and Toxics (OPPT), Environmental Protection Agency (EPA). The model uses many different types of data to arrive at the full risk indicator value, including:

1. location of facility and chemicals released or transferred: Toxic Release Inventory (TRI) Data, EPA (1988-1997), this information is updated yearly
2. adjustments for chemical-specific chronic human health toxicity: numerous data sources were selected by EPA and used in assigning toxicity weights to chemicals, mostly representing expert Agency-wide judgments (IRIS, HEAST, OPP and other sources of secondary data)
3. adjustments for pathway-specific exposure potential: weights based on quantitative and qualitative EPA exposure assessment regarding media-specific and pathway-specific releases (including AIRS data and National Emission Trends Database), and site characteristics (e.g., STAR meteorological data) to calculate ambient concentrations

4. adjustment to reflect the size of population: 1990 US Census data was used to estimate population values for non decennial years

### Methodology

The Air Pollution Health Risk Indicator uses the OPPT’s Risk-Screening Environmental Indicators Model (RSEIM), version 1, July 1999, to estimate relative health risks associated with air releases from TRI facilities. The model combines three main components—toxicity, exposure potential, and population—to calculate chemical-facility-medium-specific indicator elements, integrating numerous data sources and models. The final full relative-risk based indicator value corresponds to the sum of all indicator elements.

The information was received on disk from OPPT, EPA (both the model, and all data tables used). RSEIM was received in October, 2000, which included TRI data for the 1988-1997 period. The RSEIM data was disaggregated by year, facility, geographical area (zip code, county state), chemical, carcinogen chemical, etc.

Only “Full Model” values [2] were used to estimate (rank) Air Pollution Health Risk Indicator results. The relative-risk ranking of the different zip codes within a certain geographic area for a specific year is obtained by ranking the full model results for the different zip codes for that year.

Relative-Risk data (full model value) was analyzed at 3 different scales: the 9 Bay-Area County Region; Alameda County; and the city of Oakland. Within each of these 3 levels of aggregation, the relative health risks from TRI emissions was estimated and ranked using the Full Model. Relative risk rankings of facilities within a specific geographical area, and ranking of relative risks of facilities posed by their carcinogenic emissions are examples of the numerous queries performed.

Queries performed during analysis of this indicator used some of the following search criteria: Year; Media (all TRI air emissions, i.e., stack and fugitive releases); State (California); FIP: 06001 (Alameda County), or list of FIPS for 9 Bay Area Counties; counties associated with facilities; City: OAKLAND; C.OSHA Carcinogens (flag indicating whether the chemical is a known carcinogen based on OSHA criteria)

Variables selected for display were: Facility Name; Zip Code of TRI Facility; and Chemical (common chemical name).

Results of queries performed were converted into excel files. Different data aggregations, sorting, and ranking operations had to be applied to the different data sets in order to get the necessary summary information and indicator results (ranking of “Full Model” values for facilities or zip codes) for the different years. Although only “Full Model” results should be used in calculating the EIP indicator (data in the “Full Model” filed/column), RSEIM results stored as excel or db files include other data. The additional data contained in other fields will allow users to answer different questions. For example, the difference between Total TRI pounds and TRI Modeled pounds indicates how much of the total air emissions were actually taken into account in estimating the “Full Model” value (because some chemicals can’t be modeled due to incomplete knowledge).

Pre-Run Queries: EIP has already executed a significant number of runs – those queries thought to be of interest to the community – making it easier to retrieve results.[3] Important caveat: if running new queries, when entering search parameters (e.g. different zip codes), enter one in each line, but do not hit return when entering the last value. For information on how to run the model, build queries, etc. please refer to the User’s Manual available in hardcopy and online at the EPA website.

### Contact Information

Assistance with RSEIM caveats and queries: Nicole Buffa, EPA, 415-744-1137; [buffa.Nicole@epa.gov](mailto:buffa.Nicole@epa.gov)

## Asthma Rates

### Data Sources

1. Patient Discharge Database–Version B, was received from Office of Statewide Health Planning and Development (OSHPD) on disk in Excel Spreadsheet format.[4] (1998 was most recent dataset, purchased by Pacific Institute)
2. 1990 Population demographics at the zip code level was received in Excel format from the Alameda County Department of Health Services, Environmental Health and Investigations Branch (DHS-EHIB); “STF3B”- “Summary Tape File 3, subfile B.” (updates every ten years)
3. 1990 Population Demographic data for the State of California and for Alameda County were downloaded directly from the U.S. Census Bureau website at the Department of Finance (online data at [www.dof.ca.gov/html/Demograp/data.htm](http://www.dof.ca.gov/html/Demograp/data.htm)).

### Methodology

The received data was disaggregated in the following ways: 1) The Patient Discharge Data was disaggregated by year; hospital ID; age group; sex; ethnicity; race; zip code; county; source of admission; source of payment; principal diagnosis (ICD\_9 codes); condition present on admission; source of routing (proxy for emergency room admission); priority (code created by OSHPD for EIP to enable identification of individual patients from Visits records); and, patient ID number (this is from encrypted patient’s Social Security Number). 2) The Population demographics data was disaggregated by age group, sex, and race.

To calculate the Asthma Indicator, numerous sorting and filtering operations had to be applied to the original datasets in order to get the necessary summary information for the different years. OSHPD datasets for California had to be merged, as hospitalization records were recorded in two separate files for each year.

In calculating all rates, only discharges with asthma as the principal diagnosis were selected (filter applied: `DIAG_P=493**`, corresponding to ICD-9 codes 493). Asthma rates were calculated for each year using 1990 population estimates by age, race and zip code (U.S Census Bureau[5]).

Regarding race, only rates for the Black population (all ages and children under 15) were calculated. Patient discharge records with race as ‘unknown’ or ‘other’ were excluded from the race specific analysis, but were included in the overall estimates. Discharge records with age ‘unknown’ were not counted in the calculation of age specific rates that are the basis for this indicator (age-adjusted hospitalization rates for children under 15).

Age-adjusted rates were calculated using the direct method of the 1990 California standard population. Nineteen age groups were used: <1 years, 1-4 years, and 5-84 in 10 year age-groups, and over 84 years. The 95% confidence intervals were calculated for age-adjusted rates using a square root transformation assuming a Poisson distribution. Rates based on small numbers were omitted when the number of discharges for a zip code or group was less than 20.[6]

Estimating the number of patients that are hospitalized in a given year was done in a two-step process, and it tallied all single patients that were hospitalized (rather than number of discharges, or ‘visits’) for which there was a unique patient number (identification possible for patients with SSN information) and all records (discharges) of patients for which there was no SSN information. This resulted in an over estimate for single patient count[7], which was in part counteracted by an undercount for records with unknown zip code information.

To estimate number of patients hospitalized, first we isolated records with `PAT_N=1` (those with no SSN). Then we tallied separately the total number of records where `PRIO_N=1` (i.e., the first record of a patient that was hospitalized due to asthma and for which there was SSN information). Then these two were added to obtain a final estimate for the number of patients. Age-adjusted asthma hospitalization rates for children under 15

(based on number of discharges) were calculated for individual Oakland zip codes, the Alameda County, and California, representing the EIP indicator.

In addition, other rates were calculated during analysis of the asthma indicator: age-adjusted rates for all ages, based on number of discharges; age-adjusted rates for children under 15 and for all ages, based on number of patients; former age-adjusted rates for Oakland zip codes, based on number of discharges; ratios visits/patient; and distribution of hospitalization visits by medical unit for West Oakland, Oakland and Alameda County residents (% discharges by residence per hospital).

### Contact Information

Office of Statewide Health Planning and Development (OSHPD): (916) 327-5335

Jan Morgan, Administrative: [contactjmorgan@oshpd.state.ca.us](mailto:contactjmorgan@oshpd.state.ca.us)

Mark Kloberdanz, Data Analyst in charge of query development: [mkloberd@oshpd.state.ca.us](mailto:mkloberd@oshpd.state.ca.us)[8]

Phyllis Diaz, for questions regarding metadata: [PDiaz@oshpd.state.ca.us](mailto:PDiaz@oshpd.state.ca.us)

Alameda County Department of Health Services, Environmental Health and Investigations Branch (DHS-EHIB)

Julie Von Behren: [JVonBehr@dhs.ca.gov](mailto:JVonBehr@dhs.ca.gov)

## Voting Power

### Data Sources

1. Voting rates obtained from the Office of the City Clerk, City of Oakland. (EIP data until 2000 election, tallied for every election by City Clerk)
2. Population estimates obtained from Claritas, Inc.

### Methodology

The City Clerk’s office keeps the official voting record for every election. Their data comes from the Alameda County Registrar of Voters office. These records are available upon request. The boundaries used to define West Oakland voting data include thirteen voting precincts in the city of Oakland: 33500, 33501, 33510, 33550, 33600, 33610, 33620, 33640, 33650, 33660, 33661, 33671, and 33680. These voting precincts correspond with census tracts 401400-402400.

Voting turnout data was calculated by first requesting the official record of the vote from the City Clerk’s office for the desired elections. The voting precinct numbers came from a map of voting precincts available from the same office. With this information, it was then possible to record the number of registered voters and the number of voters who voted from each election. In certain years, one precinct or another did not have a high enough turnout to be calculated on its own. In these years, certain precincts would be combined.

Once the information was gathered and recorded, voter turnout was then graphed for comparison across time. Presidential elections were separated from other elections. West Oakland Voting rates were compared with District Three in Oakland and the City of Oakland for the most recent election. The chart showing the Registered Voters in West Oakland was calculated using the Official Record of the Vote for the November, 2000 elections and the 1999 Claritas population estimates for the corresponding census tracts.

## Vulnerability to Displacement

### Data Sources

1. Median rental data received from Homefinders, inc. an Excel database of all available rental units listed at Homefinders for Oakland “below Macarthur” from 1997 through July 2000.
2. Median home sales data received from Oakland Association of Realtors as an Excel database of Single-Family Residence (SFR) sales from 1997 through 8/31/2000. This is based on Multiple Listing Service (MLS) data.

3. Income data received from Claritas, Inc. from 1999 census tract projections for West Oakland.

### Methodology

The freeway boundary for West Oakland was used for these calculations. For the calculation of median rental price, addresses outside the West Oakland “inside the freeways” boundary were removed from the Homefinders Excel database. In practice, the cut-off for addresses was 3600 north on north-south streets (36th Street) and 650 east on east-west streets (Castro/MLK). Existing data was analyzed and median rents on different units was determined and a chart of rental prices was created. For median home prices, the Oakland Association of Realtors selected a “West Oakland” data set slightly larger than our study area of within the freeway boundaries; they did this with a custom real estate computer mapping program. We deselected addresses not within the “freeway boundary” for West Oakland. Addresses greater than 3600 north (36th Street) and less than 650 east (Castro/MLK) were deleted. We analyzed the sales data to determine a median home sales price, and created summary statistics and charts in Excel. We adjusted each year to reflect 1999 dollars.

For incomes and analysis of affordability, we aggregated census tract data from Claritas, Inc. We determined the percentage of households (HH) in the study area within each of the five income categories. This was compared to the data on rents and home sales. To determine the annual income needed to afford median rents we use the following formula: median rent x (12months/30%). To determine the annual income needed to afford the median home sale prices we used the payment/PMT function in Excel which calculates monthly payments based on a particular home sales price. Then, we compared the income needed to afford median rents and home sales to the five income categories to determine affordability by percentage of households.

### Contact Information

Homefinders, Dana Goodel, CEO: (510) 549-6450

Oakland Association of Realtors, Judy Rix-Brown: (510) 836-3000

## Community Stability

### Data Source

Metroscan (parcel) data for all of Oakland from Prof. John Landis’ research assistant, Ness Sandoval, from Department of City and Regional Planning, UC Berkeley. Data was current as of June 1999 and saved in SPSS file.

### Methodology

For the analysis of turnover rates in West Oakland, Metroscan use codes were recoded into “newcode” that corresponds to the three parcel categories described in the indicator (industrial, residential, commercial). For example, all residential use codes were recoded “residential” and so on. Those parcels in the West Oakland census tracts 4014-4027 were copied as a new data set. Summary statistics for the “newcode” variable were run for both data sets on the years 1997 through 1999 (June), and those parcels which were sold in each category were totalled.

For Rapid Turnover analysis the parcels were sorted by the variables designating the date of prior sale and the date of the most recent sale. The entries within the study period (1997-1999) were pasted into an Excel document. In Excel the parcels in the study that had not sold twice in two years (according to prior sale date and current sale date) were deleted from the data set. The remaining entries were tallied and recorded in the top of the spreadsheet.

## Subsidized Housing Supply

### Data Source

1. Data on Publicly Assisted Rental Units in the City of Oakland received in hardcopy form from the Community and Economic Development Agency (CEDA), dated 2/25/00.

2. Data on Section 8 housing received over the phone from Oakland Housing Authority.

3. Data on public housing units received over the phone from Oakland Housing Authority.

4. Data on total number of housing units in West Oakland from 1999 Claritas, Inc. estimate.

### Methodology

West Oakland units were delimited from the information on publicly assisted rental units by matching address to the “inside the freeways boundary.” For publicly assisted housing, West Oakland units were tallied, and then all Oakland units tallied. To derive the percentage of total number of housing units in West Oakland that is publicly assisted housing, we used information on total number of housing units from Claritas, inc. 1999 estimate.

The Oakland Housing authority gave us data on Section 8 and public housing within census tracts 4016-4027 (West Oakland) as of last week in January 2001.

### Contact Information

Community and Economic Development Agency (CEDA), City of Oakland, Jeff Levin (for information on Publicly Assisted Rental Units), jplevin@oaklandnet.com, (510) 238-6188

Oakland Housing Authority, Jim Wilson (Section 8 housing): (510) 587-2180

Lily Toney, Housing Management (Public Housing)(510) 874-1520

## New Business Development

### Data Sources

1. Excel databases of all new businesses in 94607 zip code received from City of Oakland, Business Tax Division. (Cost - \$35)

2. Hardcopy of Standard Industrial Code table listing used by City of Oakland also received from Business Tax Division. (no cost)

### Methodology

The city provided 4 databases, one for each year: 1997, 1998, 1999, and for the year 2000 through August 15. The databases included all newly licensed businesses in the zip code. The 4 databases were combined into one. These databases are updated by the city regularly.

Businesses outside the West Oakland “freeway boundary” were eliminated from the database. As a rule, addresses less than 650 on east-west streets were eliminated. This corresponds with Castro/MLK. Businesses were then recoded into “EIP Recode” based on SIC codes. Businesses for which there was no SIC explanation in the City’s table listing were not recoded and were not included in the final indicator. Recoded businesses were tallied and analyzed, generating the indicator table of number of new businesses in each category.

### Contact Information

City of Oakland, Marissa Wheeler: mdwheeler@oaklandnet.com, (510) 238-7468

## Illegal Dumping

### Data Sources

Obtained excel database of city dumping from Environmental Services, Public Works

### Methodology

The data on illegal dumping comes in one file for each month. It includes all the garbage the city collects and dumps at the city dump. The information is coded for type of garbage and truck number. The route code for illegal dumping was 627. The truck code for West Oakland is 4985. The tonnage was

tallied by truck # 4985 to get the West Oakland total, and by all Route 627 to get city total for Illegal Dumping. The original city data was separated into monthly files.

### Contact Information

City of Oakland, Public Works, Susan Katchee: (510) 238-6981

Truck Information, John Wright, Service District 1: (510) 434-5104

Jamil Blackwell: (510) 434-5106

## Land Use Conflict

### Data Sources

1. Zoning information from the General Plan Zoning Code data, Community Economic Development Agency (CEDA), City of Oakland (prior to and post the 2000 zoning update). (no cost)
2. Census 1990 and 2000 Block Group Population Data downloaded from the U.S. Census Bureau (TIGER files) website.
3. 1999 Estimates for Block Group Population Data from Claritas, Inc..

### Methodology

Two 1997 CEDA Arcview files containing West Oakland zoning information prior to the 2000 West Oakland zoning update were used for this indicator: 1) a general zoning file with an indication of major land use zoning codes, (e.g. M codes designate industrial zones) and 2) a non-conforming uses file with information of industrial parcels within residential zoned areas. A 2001 CEDA Arcview file with information on the new West Oakland zoning (including the new S-16 mixed use “buffer” zone, and the S-15 Transit Village delimitation) which was approved on October 2000 as an amendment to the Zoning Code. 1990 and 2000 block group data (TIGER files) was downloaded from the USCensus Bureau web site. Population data was then re-projected into Stateplane (NAD 83) Projection.

This indicator is based on spatial analysis of CEDA zoning information and TIGER population data, using Arcview ESRI software. All spatial analysis for this indicator was performed by Anders Flodmark at GIS, UCB. Analysis was done using the EIP definition of West Oakland boundary (area within the 580 and 980 freeways, including the Port of Oakland and Army Base). First, industrial zoned areas and non-conforming uses in residential areas were spatially delimited in a new shapefile. Industrial areas in the new shapefile were buffered with a 0.125 mile buffer. Population data from Census 1990, using 1990 TIGER blocks was re-projected to the Stateplane (NAD83) so it would be in the same projection as CEDA zoning data. 1990 TIGER blocks was clipped using Oakland from TIGER1990 Place shapes. Clipped further to rid the coverage of areas under water where it is estimated that not many people reside. Area of blocks was recalculated using the calcapl script from ESRI. These were intersected to determine the population within 1/8 mile, the population for the intersected blocks was calculated:  $\text{Area}/\text{Blk\_Area}=\text{Ratio}$ ;  $\text{New population} = \text{Ratio} * \text{P1}$  in field Area\_pop.

For the second set of results (i.e. results for the indicator post-2000 zoning update), a new indicator value was calculated using the same methodology, using data from Census 2000 (TIGER data) and post-2000 zoning information. In addition, an estimate of the percentage of population living within the new S-16 zones was calculated.

Note that, in the estimation of the new indicator value using the 2001 zoning data from CEDA, the industrial areas buffered were calculated by selecting all M10-40 zones (in the zoning2 field) and then excluding all S-15 and S-16 areas (identified in the Overlay field). The percentage of residents living in S-16 areas was calculated using the S-16 shapefile to intersect block dataset.

Note: the indicator value for the period prior to the 2000 West Oakland zoning update was calculated using two different population data sources: the 1990 Census population data, and the Claritas 1999 population estimates for West Oakland block group data. Both calculations yielded similar results (approximately 81.3% of population within 1/8 mile of industrial areas).

### Contact Information

Community Economic Development Agency (CEDA), City of Oakland, Donavan Corliss: dcorliss@oaklandnet.com, (510) 238-3941

Office of Information Technology (OIT), City of Oakland, Brian Kimball (for future updates of zoning information): (510) 238-6855

Geographical Information Science Center (GIS), University of California, Berkeley Anders Flodmark (spatial analysis): flodmark@gisc.berkeley.edu, 510-643-4074

## Neighborhood Toxic Volumes

### Data Source

Combined Annual Releases and Transfers for all TRI facilities in Oakland, California[9] was downloaded as .CSV files from the Envirofacts EPA site based on Toxic Release Inventory (TRI) Data, EPA (1987-1998). 1998 was the most recent dataset available when data was downloaded and analyzed in early 2001. This information is updated yearly.

### Methodology

The main dataset was retrieved by downloading data from Envirofacts. A query was preformed online using the Easy Query search. Selection criteria for the data retrieved were: State Abbreviation = CA; County Name = Alameda; City Name = Oakland. The fields that were used to retrieve data for the calculation of this indicator were: TRI facility name; facility ID; closed indicator (to indicate if facility was closed); reporting year; category (media) of release or transfer; sum of combined releases and transfers (corresponding to all chemical releases and transfers from TRI facilities, in amount of pounds of chemicals); facility address; and, facility zip code. To calculate this indicator numerous sorting operations had to be performed on the original dataset in order to get the necessary summary information for the different years. The CSV files downloaded were converted into excel files and the data was sorted by zip code. The Envirofacts Zip\_Code information had to be converted into a “SimpleZip” column with only the 5 first digits of the Zip\_Code field information. Data was then sorted by zip code, by reporting year, and by media.

Indicator values report the Sum of all TRI Releases and Transfers to the environment (all media) per zip code per year. Additional information regarding the amounts of “On Site Releases” versus “Releases Transferred Off Site” was tallied by aggregating the different codes in the Category of Release or Transfer. On-site Releases (Air, Land, Water) include: Air Stack and Fugitive Releases; Landfill (87-95); Other On-site Disposals; Surface Impoundment, Undetermined Injection (87-95); Water. Releases Transferred Off-site include: Disposition Metals; Disposition Non-Metals; Energy recovery; Land Treatment; OLOC; POTW; Recycling; Waste Treatment.

Further analysis was performed by zip code and by facility, including comparison between West Oakland and Oakland (West Oakland results reported as a percentage of Oakland totals), comparison of Per Capita Toxics Generated in West Oakland and Oakland (using a 1998 estimate based on US Census 1990 and 2000 population data), and ranking of facilities according to their contribution to the annual indicator values.

### Contact Information

EPA Envirofacts Website: [www.epa.gov/enviro/html](http://www.epa.gov/enviro/html)

## Resident Toxic Exposure

### Data Sources

1. Ten different data sources were used to determine the location of known or potential contaminated sites-a Databases Table is included listing the names of the 10 databases used and corresponding agencies (refer to database numbering in the table to follow Methodology below).

2. Census 2000 Block Group Population Data, U.S. Census Bureau (TIGER 2000 Data files).

## Methodology

Databases #1 through #7 were obtained from EPA in February 2001. HAZMAT database received from Fire Emergency Services, City of Oakland, in February, 2001. SLIC and MTBE Databases were received/downloaded in April 2001.

Geographic information data relative to databases #2 through #7 was obtained directly from EPA in Arcview format.[10] All shape files received from EPA had to be re-projected into Stateplane Coordinated System (NAD83) to match other Oakland and West Oakland GIS data.

Geographic information data relative to databases #8 through #10 (HAZMAT, SLIC, and MTBE) was obtained through address matching addresses provided in those databases. HAZMAT data was retrieved in Excel format. New sites can be identified or removed from the databases on a continuous basis. Updates on the geographical information of sites identified in these 10 databases are different for each database.

Some databases have yearly updates (e.g., CALSITES-AWP) others are updated much more frequently (e.g., HAZMAT is updated monthly). Note that EPA arcview files are not produced regularly and are not accessible to the public directly - EPA GIS staff works continuously on keeping geographic information updated but their work depends on the frequency of updates of individual databases and their own schedule constraints.[11] Each individual database has its own metadata describing in varying detail the existing fields. In the final arcview file produced for this indicator, only location information and database name were used (sites can be search by name of database or location).

The development of this indicator involved a long process of proofing and matching all databases, address matching databases obtained through sources other than EPA, buffering contaminated sites (1/8 mile buffer), and estimating population values for areas within the 1/8 mile buffer area. Data analysis for this indicator was conducted using Excel and GIS ArcView version 3.2 software.

The first step was to convert all information on contaminated sites from the different databases into shape files using the same Coordinate System. All shape files received from EPA (databases #2-7) had to be projected into StatePlane NAD83 to match other West Oakland GIS data. Geographic information data relative to databases #8 through #10 (HAZMAT, SLIC, and MTBE) was obtained through address matching addresses provided in those databases with the 1999 Tiger Line Digital Street data from the U.S. Census Bureau. Address matching done by Xu Jiang, Geographical Information Center at U.C. Berkeley.[12]

The next step was to create a master database merging all information for Oakland contained in the 10 databases. In this process there were two main issues that required some data manipulation: removal of duplicate records both within the same database and between databases,[13] and standardization of site geocoding so that each site was represented by one single location.[14] In this master database, each contaminated site is associated with one unique location and with the names of databases where it has been identified.[15]

Next, spatial analysis was conducted at the GISC to estimate the number of residents of West Oakland (and Oakland) living within a 1/8 mile radius of any of the contaminated sites listed in the master database. Contaminated sites were buffered in ArcView (1/8 mile buffer) and population values for the areas within-the-buffer were estimated based on the proportion of census tract area within the buffer (using arcview calcp1 script from ESRI).[16] The results for this indicator are reported as a percentage of West Oakland population residing within 1/8 mile proximity of a contaminated site.

A list of all the known or potentially contaminated sites identified in the analysis of this indicator is also provided in Excel format to allow for easier access to users without ArcView experience[17]. In addition, the number of contaminated sites identified in each database was calculated and presented in a summary table (included in the indicator report).

## Contact Information

USEPA, San Francisco Office, Cheryl Henly (for database information)

Emergency Services, Oakland Fire department

Vibhor Jain (HAZMAT Database information), (510) 238-7491

Geographical Information Science Center (GISC), University of California, Berkeley Anders Flodmark (spatial analysis), flodmark@gisc.berkeley.edu, 510-643-4074

## Sensitive Area Toxic Hazard Exposure

### Data Sources

1. High Hazardous Sites locations were obtained from the Hazmat Database, Office of Emergency Services, Fire Department, City of Oakland in February 2001. This information is updated monthly.

2. Sensitive sites data is collected by the City of Oakland Community Economic Development Agency (CEDA), and the Office of Information and Technology (OIT). This data was last updated in 1997-1998.[18]

### Methodology

Data on High Hazardous Sites was received in Excel format from the Office of Emergency Services. From the same source we received arcview shape files regarding location of Oakland sensitive sites (parks, senior centers, public schools, childcare centers, and hospitals). Information on shelter locations was obtained from OIT as an arcview shape file. All shape files received were in the StatePlane Coordinate System (NAD 83).

Oakland High Hazardous Sites file was sorted and only P1 (priority 1) Active Hazmat sites[19] were selected for this indicator. P1 active high hazardous sites were address matched through addresses provided in the Hazmat database with the 1999 Tiger Line Digital Street data from the U.S. Census Bureau. All sensitive sites contained in the Office of Emergency Services and OIT shape files were considered in the analysis. P1 Active High Hazardous sites were buffered with a 1/8 mile buffer and sensitive sites within the buffer were counted. Total number of Sensitive Sites within the buffer for Oakland and West Oakland were counted.[20] All spatial analysis for this indicator was performed by Anders Flodmark at GISC, UCB. Analysis was done using the EIP definition of West Oakland boundary (area within the 580 and 980 freeways, including the Port of Oakland and Army Base).

### Contact Information

Emergency Services, Oakland Fire department, Vibhor Jain (for HAZMAT Database): (510) 238-7491

Community Economic Development Agency, City of Oakland, Donavan Corliss (for Sensitive Site Data): dcorliss@oaklandnet.com, 510-238-3941

Office of Information Technology, City of Oakland[21] Brian Kimball, (for Sensitive Site Data): 510-238-6855.

Geographical Information Science Center (GISC), University of California, Berkeley Anders Flodmark (spatial analysis): flodmark@gisc.berkeley.edu, 510-643-4074

## Lead Poisoning

### Data Sources

Blood lead level test results for children under 6 years of age obtained from the Housing and Medical Lead Environmental Testing (HAMLET) Database of the Alameda County Lead Poisoning Prevention Program (ACLPPP). ACLPPP estimates that their data represents approximately 90% of all lab tests performed in Alameda County labs. Data is updated monthly

## Methodology

Data was obtained directly from ACLPPP based on a query performed by Jackie Wertis (ACLPPP) for the EIP (query designed by Clara Landeiro and Jackie Wertis). Data was retrieved in two different formats: 1) data for the period 1992-1999 was received in hardcopy and input into excel spreadsheets; 2) data corresponding to test results for the year 2000 was received already as an excel file. (ACLPPP acquired the capability of delivering query results in a digital format at the end of 2000.) Data for the period 1992-1999 was received on 12/5/00; data for the year 2000 was received in March 2001.

The data was disaggregated by: year; zip code; 2 age groups (0-3 yrs old; 4-5 yrs old); 4 groups of blood lead levels (bll >20 µg/dL; 15-19 µg/dL; 10-14 µg/dL; <10 µg/dL). Note: data was also received on the total number of “new cases” of children testing higher than 10 µg/dL, disaggregated per year, per zip code, but not disaggregated into different blood lead level categories.

This indicator tracks the number of children that tested with elevated blood lead levels, bll >10 µg/dL. The number of children with severe blood lead levels (bll >20 µg/dL) is also monitored. To calculate the number of children in each year and in each zip code that have tested with bll >10 µg/dL and bll >20 µg/dL, we had to aggregate the data and estimate yearly subtotals for all the Alameda County zip codes. This was done in Excel after the data was input from the hardcopy format. The zip code totals were then ranked in Excel.

Blood lead level test results above 10 µg/dL reported without zip code information were not included in the final tally of each zip code. Results of analysis are shown in absolute numbers for each zip code (number of children testing with elevated blood lead levels), ranking of zip codes (e.g. zip code with the highest numbers of affected children), and zip code annual averages for the period 1995-2000.

Results are displayed in graphs showing the indicator trend for the period 1995-2000 for the West Oakland zip code of 94607, and in maps. Maps were obtained by transferring Excel results to an Arcview base map with zip code boundaries for Alameda County (shape file provided by GIS).

Note: although the data collected by ACLPPP (and received by EIP) corresponds to the period 1992-2000, data reported for this indicator refers to the period 1995-2000. ACLPPP considers that data reporting procedures were already well established after 1994.

## Contact Information

Alameda County Lead Poisoning Prevention Program (ACLPPP), Jaclyn Wertis (for updates to this indicator from the HAMLET database):  
jwertis@co.alameda.ca.us, (510) 567-8255

Formal requests of information are needed in written form and should be addressed to the ACLPPP Director Steve Schwartzberg (510-567-8246). Also, contact the outreach coordinator Shannon Bermond (510-567-8289).

## Lead Abatement

### Data Source

Abatement data from the Housing Database of the Alameda County Lead Poisoning Prevention Program (ACLPPP). Data for the period 1995-2000 was received on hardcopy and transferred to Excel. Data was received on 2/2/0. This information is updated regularly.

### Methodology

This indicator tracks the number of housing units where lead hazard reduction work has been completed (all types of projects) per year. Analysis was performed per census tract. Results for West Oakland were estimated by adding up all units cleared in 1990 Census Tracts 4014-4027 (West Oakland Census Tracts are those that fall, at least partly, within the West Oakland freeway boundary); results for the City of Oakland correspond to the sum of all census tract data received (query retrieved only City of Oakland clearances). Indicator averages for the period 1996-2000 were

also estimated per census tract and for West Oakland and the City of Oakland.

The geographical distribution of lead abatement efforts was also analyzed by mapping indicator results. Maps were obtained by transferring Excel results to an Arcview base map with 1990 Census Tract boundaries for the City of Oakland (census tract boundary shape file provided by GIS).

Note: ACLPPP reports data on number of clearances in terms of the number of projects and in terms of the number of housing units (a project clearance can represent one or more housing units cleared).

For the indicator, we chose to track the number of housing units because it is the best estimates the impact of lead abatement efforts in the community. Information regarding 1995 (the first year that this data was recorded) was found to be unreliable and was therefore not used in the analysis. In 1995, 74% of housing unit clearances had no census tract information; in the following years, this percentage was drastically reduced to less than 3% in 2000 (although in 1996 there were still about 30% of clearances with unknown Census Tract information).

## Contact Information

Dale Hagen, Alameda County Lead Poisoning Prevention Program (ACLPPP) (for Housing Database queries for updates of this indicator):  
dhagen@co.alameda.ca.us, (510) 567-8298

Formal requests of information are needed in written form and should be addressed to the ACLPPP Director Steve Schwartzberg, (510) 567-8246.

Also, contact the outreach coordinator Shannon Bermond, (510) 567-8289.

## Transit Mobility

### Data Sources

1. Bus service miles from TR38 reports, Scheduling Department, AC Transit.
2. Historic bus schedules and route maps (routes 13, 14, 15, 62, 72, 82, 88, 315, 362, B, F, and K) obtained from AC Transit.
3. Graphic file of routes and stops for West Oakland (graphics file) from AC Transit.
4. AC Transit Bus System (early 1999) from Metropolitan Transportation Commission.

### Methodology

This indicator uses the Freeway boundaries.

The TR38 reports track the average daily bus service miles for every AC Transit route on school days, holidays, Saturdays, and Sundays. The number is a daily aggregate and the report does not include other information such as the frequency of service on the route. New reports are distributed when routes are changed, most often on a quarterly basis.

Once the proper West Oakland Routes were identified using AC Transit system maps, the next step was to record the service miles dating back to 1994. 1994 was previously selected as the baseline year because AC Transit made major cuts in service during 1995 and 1996. Starting before the cuts made it possible to determine what service West Oakland had lost at that time.

The bus service data from each report for non-holiday weekdays, Saturdays, and Sundays was recorded into an Excel spreadsheet. Each set of numbers was dated with the proper report date. In order to find the average daily total for each year, each set of numbers was multiplied by the number of months it represented. These totals were added together for each year and then divided by twelve for a mean number. Weekdays, Saturdays, and Sundays were each calculated separately. The numbers were then put into a graph for visual representation. These same reports were used to identify what routes offer weekend service.

In order to find additions and subtractions in the number of routes servicing West Oakland, AC Transit provided historic system maps for the years under

consideration. Using the maps, it was then a matter of visually noting the routes shown on the map. Routes with evening service were identified using historic route schedule and again visually noting what routes offered service after midnight.

AC Transit provided the shape files with the routes and stops in West Oakland. GIS created a buffer of 1/8 mile around West Oakland. Only routes with actual bus stops in West Oakland were considered. GIS created the final map used in the report and provided the numerical results.

## Bikeable Streets

### Data Sources

1. City of Oakland Bicycle Plan, CEDA, City of Oakland
2. Public Works, City of Oakland

### Methodology

This indicator uses the freeway boundaries. Kathryn Hughes at the City of Oakland Public Works Department (PWD) is the person charged with implementing the bikeways proposed in the Bicycle Plan.

PWD provided the EIP with the number of miles of existing bike pathways in West Oakland, based on the map of existing bikeways shown in this report. Although the Plan was created and published by CEDA, as the implementing agency, Public Works will continue to have the most up to date information about the number of miles of bikeways in Oakland.

## Notes

[1] Refer to methodology for the Air Pollution Health Risk Indicator for further information on this model.

[2] The Full Model multiplies the surrogate dose estimated using exposure models by the chemicals toxicity weight and by the population. Fate and transport of the chemical pounds were modeled and exposure assumptions were made. (User's Manual for OPPT's Risk-Screening Environmental Indicators Model: Version 1.0. EPA, Washington, D.C. 1999)

[3] Please contact the Pacific Institute for details at (510) 251-1600.

The specifications in terms of hardware and software required to run the model may make it difficult for community organizations to use it (see manual). In addition, the time required to run the model is considerable. A single query can usually take up 0.5 to 1.5 hours if the model is installed on the computer hard drive (running the model off the CD can take up to 8 hours per query).

[4] Data was received in two separate files for each year because number of records exceeded the size handled by one single Excel spreadsheet.

[5] 1990 Population demographic data at the zip code level was obtained from DHS/EHIB (the same data used in the 1994-1996 RAMP Asthma Study)

[6] Analysis for age-adjusted rates followed the same methodology as the 1994-96 RAMP Study and the 1995-97 DHS Report.

[7] For example, for 1998, the percentage of records without SSN information was, for California, 16.7%, for Alameda County, 14.8%, and for West Oakland Zip Code 94607, 4.6%.

[8] Mark Kloberdanz is the contact for EIP specific query. Query is stored and titled by OSHPD as 'Clara Landeiro' and defines the subset of OSHPD database and the fields requested including definition of the added field 'Priority' and 'Patient ID'.

[9] Note that, although query limited search to City Name = Oakland, facilities located in the City of Emeryville (Zip Code 94608) were also retrieved, together with Oakland facilities within the same zip code.

[10] For database #1 no records were retrieved for Oakland in a query run by EPA, i.e. there are no NPL sites in Oakland (and therefore no Arcview file).

[11] EIP requested this data through FOIA during Summer of 2000, and received it in 2001 at no cost to the project.

[12] Errors introduced by the address-matching process may have resulted in site undercount. 95% of the sites listed in HAZMAT were successfully address-matched, SLIC had 85% success rate, and in MTBE database all sites listed were successfully matched.

[13] As different databases are maintained for different purposes and use different ways of reporting contaminated sites, the same site may be listed in more than one database (e.g. the same site maybe listed both in TRIS and HAZMAT databases) or it may be listed in different records (even within the same database) due to different spellings of site name or address.

[14] As the databases often use different geocoding procedures, overlapping points were inspected and manually selected and coded a single point representation for each address.

[15] More than one database might have identified the same site.

[16] Calculations assumed a uniform distribution of population within each census tract.

[17] Two separate Excel files were created from the ArcView dbf files: clip1wo\_eipfinal2.xls, for West Oakland (EIP freeway boundary definition); and eipfinal2Oak.xls, for the City of Oakland.

[18] There was no accurate information on creation and update of these files at CEDA or at OIT (metadata for this data is inexistent).

However, according to CEDA, it is likely that they have been produced in 1997-1998 in preparation for the City of Oakland General Plan.[19] No swimming pool sites were considered since in 2001 these sites are no longer considered as Priority 1 Hazardous sites (due to a change in the active chemical used in public swimming pools).

[20] In counting the number of sites there was one exception – Summit Medical Center showed 3 locations in very close proximity to each other, and were counted as one single sensitive site.

[21] Brian Kimball is also the contact for future updates on Sensitive Sites data.

# Appendix B - Indicators Not Included

This section introduces a few of the indicators that were not included because of the lack of consistent, reliable, and regularly updated information on these issues. The following four issues were identified as being of concern to the West Oakland community by our Neighborhood Task Force, but because of the unavailability of the necessary data, we were not able to include these indicators. Government agencies need to begin assessing, collecting, and reporting on these important issues so that residents can understand the scope of the problem and begin to take action to improve conditions in West Oakland.

## Trucks

Expansion of the Port of Oakland is projected to bring over 22,000 trucks per day through West Oakland (2010),[1] up from about 10,000 (1996) trucks per day.[2]

### Why Would an Indicator be Important?

Heavy duty diesel vehicles are responsible for 22 percent of the nation's particulate matter (i.e., soot) emissions, and 15 percent of the nation's emissions of smog-causing nitrogen oxides.[3] An older diesel truck or bus can emit almost 8 tons of pollution in a year. The presence of truck related activities and the impacts generated by truck traffic have been of great concern to the West Oakland community for decades. The presence of the Port of Oakland, and previously also the Army Base, has added greatly to the problem of trucks in West Oakland. These major sources are in addition to the number of trucks residents contend with just due to the industrial character of the neighborhood.

The sense that this community bears more than its fair share of the City's truck traffic has motivated community groups to organize and rally around the issue. A number of local organizations have advocated and organized to try to reduce the number of trucks going through their neighborhood. Issues raised by residents vary from air pollution and health concerns, to safety, visual and noise impacts. Perhaps most critically, air pollution associated with diesel exhaust emissions can have serious impacts on human health, causing respiratory illnesses from asthma to cancer.[4]

The EIP Neighborhood Taskforce identified trucks as one of the indicators the community would like to see developed and monitored. The potential indicator that was suggested was the volume of truck traffic through West Oakland streets (measured as the number of truck-trip miles traveled in West Oakland per year). However, there is very little information currently to support the development of such an indicator, and to allow for time trend analyses and geographic comparisons.

A 1997 report, the Vision 2000 Maritime Development EIR, projected for 2010 a daily total of 22,210 truck trips during peak weeks through West Oakland in its Reduced Harbor Fill Alternative (Option D),[5] which would mean a significant increase (225%) from the 1996 total of 9,870 trucks in peak weeks.[6]

More recently, the city of Oakland has commissioned a Diesel Study, which is being conducted by Harding ESE, and is now in its final stages.[7] This study estimates that the Port of Oakland generated 2,491 truck-trips per day in the year 2000 in and around West Oakland.[8] However, this is a one time study and city officials state they do not have the resources to update this information in the coming years. Thus at present, in the absence of any other reliable data sources, the WO EIP is identifying trucks as an area that urgently needs further study, including field surveys to document trucks travelling in and parking in residential areas.

### What Can You Do About the Truck Problem?

Several community groups are working on truck related issues in West Oakland, and have participated in discussions surrounding Port of Oakland's truck related activities and the Oakland Army Base Reuse Plan. Some have

also been actively involved in the West Oakland zoning updates of the Oakland General Plan. Some residents also routinely report on truck traffic violations (e.g., noise, parking, circulation outside truck-designated routes, etc.) to the Oakland Police Department. Residents, community organizations, and the city of Oakland can play a role in enforcing current truck traffic regulations and in prosecuting repeat offenders. They can work together to reduce emissions by retrofitting the truck fleet (e.g., installing emission control devices, or using biofuels)[9], and can participate in designing solutions to the conflicts generated in particular by the presence of truck traffic in residential streets (e.g., noise and safety issues).

In order to fill the existing data gap, regular truck traffic surveys in this community are not difficult to set up and could provide needed information that is now lacking to city officials and community groups. This could be an area where the community could partner with the City in data gathering and in collaborative policy design (e.g., students from local schools and other interested community residents could collect information on truck traffic volumes in their neighborhood which are fed into a database).[10]

### Contact Information for Additional Resources

City of Oakland, Public Works Agency, Environmental Services  
Niko Letunic: NLetunic@oaklandnet.com, (510) 434-5101

West Oakland Commerce Association (WOCA)  
(510) 272-9622

City of Oakland, West Oakland Community Planner  
Margot Lederer Prado: mprado@oaklandnet.com, (510) 238-6766

## Neighborhood Blight

Blight is the presence of deteriorated urban conditions. Neighborhood blighted conditions often refer to the deteriorated appearance of buildings or streets including dilapidated facades, vacant buildings in disrepair, broken street lighting, abandoned vehicles, or the presence of litter on the streets or properties in the neighborhood.

On March 1998, the Oakland City Council approved a Blight Ordinance designed to improve the appearance of Oakland neighborhoods. This Ordinance recognizes the links between community's appearance and its economic growth and the quality of its social environment, and it clearly recognizes that private property is an important asset for neighborhoods. A set of legislative measures was instituted to combat neighborhood blight, and proprietors that are found in violation of the Ordinance can be cited for non-compliance.

This Ordinance contains new legal requirements for residential, commercial and industrial properties. Buildings and properties, occupied or vacant, are required to be maintained in good condition. Buildings and properties have to be kept neat and tidy, debris and litter must be properly disposed, and vacant properties must be fenced to avoid dumping. Other dispositions include regulations against odors and fumes that may constitute a nuisance to other properties, and parking regulations related to operating and inoperable vehicles, and dispositions for large trucks.[11]

The West Oakland community has identified keeping their community clean of trash, refuse, litter and blight as a goal in the 1999 7th Street/McClymonds Initiative Community Plan. In addition, the Initiative is working toward several blight abatement actions, such as increased enforcement against illegal dumping and owners of blighted properties, and assistance to senior citizens with the maintenance of their property. The WO EIP Neighborhood Taskforce selected blight as a problem area that should be measured and monitored through time. By tracking blight one could assess whether Initiative objectives and actions set in motion were in fact resulting in a change of neighborhood conditions.

At present, there are several different sources of information regarding blight. The Community and Economic Development Agency (CEDA) has made publicly available the information regarding privately owned properties where the city of Oakland has paid for cleanup work to minimize blight.[12] Also, the City's Code Compliance Database keeps track of complaints, cleanup work, and citations issued for non-compliance with the Oakland Municipal Code and the Blight Ordinance.[13] There are also a few studies and reports on the problem of blight in Oakland.

However, none of the existing sources was found to provide reliable, consistent, and regularly updated information that could support an indicator in this area. Oakland's Code Compliance Database was explored in detail to assess its feasibility in supporting an indicator. Although there are specific violation codes for blight,[14] after interviews with different City Inspectors it was found that the violation codes were not being applied consistently.[15] Even if one were to improve the consistency and accuracy of code reporting, an indicator based on this information (e.g., number of complaints or number of blight-related code violations) would not give us the full picture of blight in the neighborhood.[16] Furthermore, the meaning of a particular change in the indicator could point to several explanations. For example, an increase in the number of blight violations or citations might be due to an increase in enforcement activity rather than a worsening of blight conditions in the community. In any case, improvements to code reporting for this database should be sought because this will at least help decision makers know how the City is responding to community residents concerns, and may inform the community on the types of blight violations encountered. [17]

### What Can You Do About Blight?

You can join community groups that are working to combat blight in West Oakland, and ask City of Oakland officials to step up their enforcement activities and cleanup work in the neighborhood. Some residents also routinely report blight violations to the city of Oakland. Residents, community organizations, and the city of Oakland can play a role in enforcing current blight regulations and in prosecuting repeat offenders, and can participate in designing solutions to route out different causes of neighborhood blight. The city of Oakland makes available some home improvement loans and a neighborhood cleanup program that provide assistance to home or rental property owners, and also provides assistance to businesses that want to address blight (e.g., the Facade Improvement Program).

### Contact Information for Additional Resources

City of Oakland: [www.oaklandnet.com/government/government26.html](http://www.oaklandnet.com/government/government26.html)

To report on Blighted Conditions of dilapidated buildings, overgrown weeds, vacant lots, etc.: (510) 238-3381

To report illegal dumping: (510) 615-5566

For trash removals from private property: (510) 238-3381. For public properties: (510) 434-5101

## Indoor Air Quality

Indoor air quality (IAQ) refers to the quality of the air we breathe inside our homes, schools, or work places. Indoor air pollution is primarily caused by the release of gases or particles into the air from a variety of indoor sources, and it is generally associated with places where ventilation is poor (where outside air is not helping to disperse indoor emissions), and with high temperatures and humidity levels. All of these factors—lack of ventilation, humidity and temperature—contribute to increased concentrations of pollutants in enclosed spaces, thus worsening the quality of the indoor air.

There are many sources of indoor air emissions. Some sources release pollutants intermittently such as tobacco smoke, household cleaning products, and emissions from kitchen appliances, furnaces or fireplaces,[18] while other sources are constantly releasing pollutants, especially some building and furniture materials (e.g., particleboard and asbestos). [19] In addition,

radiation levels may be of concern in certain areas. Radon has been identified as a major source of harmful radiation levels in homes.[20] Another common problem in homes with poor indoor air quality is mold, associated with homes where humidity levels are high and ventilation is poor. Mold exacerbates asthma.

According to City of Oakland Building Services, West Oakland has numerous homes with significant indoor air quality problems. Common causes are overcrowding (too many people living in small spaces), poor ventilation (which can be caused by bad design, but is often caused by windows painted shut or deficient kitchen and bathroom ventilation), and building or site conditions (e.g., water intrusion, deteriorating lead-based paint or asbestos insulation).

Health effects from indoor air pollutants vary widely according to how hazardous the pollutants are, the concentration of the pollutants, the individual exposed to them, and the exposure time. The impact on an individual's health can be felt immediately or years after the exposure. Health effects may vary from minor headaches and irritation of the eyes, nose, and throat; to respiratory and heart diseases, and cancer.

Due to the multiple sources of indoor air pollution and the fact that this field has not been, up until recently, the focus of much scientific research,[21] there are still no practical instruments available to measure indoor air quality. One can test for the concentration of numerous air pollutants and radiation levels, but that is both a costly and lengthy task. Further research is needed not only in terms of measurement but also in understanding the health effects of numerous indoor air pollutants (e.g., the concentrations and exposure times associated with particular health effects of specific pollutants).

Although this is one of the areas of concern to West Oakland community residents, at present there is no single aggregate measure that can be used to monitor indoor air quality, hence the indication of this as an area where more information needs to be collected. EIP explored the possibility of using the City of Oakland Code Compliance Database, which has a vast amount of descriptive information on current housing conditions of units or homes where a complaint has been filed, to extract information for an indoor air quality indicator.[22] However, the existing violation code system is not suited to monitor indoor air quality problems. According to City Inspectors, this code system is being redesigned and there will be changes to the codes which inspectors use in the field.

Community groups should work with the City to make sure that the new coding system would allow the monitoring of conditions of concern to residents, not only IAQ, but also blight and noise. The new coding system would potentially allow residents and the city to keep track of the number of complaints, violations, or conditions related to poor indoor air quality, and to detect the more frequent causes of indoor air quality problems in different neighborhoods. This could lead to designing targeted solutions to improve indoor air quality more efficiently.[23]

### What Can You Do About Indoor Air Quality?

Residents can contribute greatly towards improving IAQ in their communities. One key aspect is learning to identify sources of indoor air pollutants and being informed about whom to contact for help. Community groups should also ensure that the city's new coding system tracks indoor air quality in neighborhood buildings. There are several agencies working on indoor air quality problems that provide assistance to community residents in different ways. A great deal has been done to make education materials about indoor air quality issues available to the community, including how to identify potential sources of air pollution and which mitigation measures might be of help.

Particular attention has been given to indoor air quality in schools since half of the schools in the U.S. have indoor air quality problems.[24] The EPA Program Tools for Schools provides information to teachers and other school personnel on what actions they can take to improve the indoor air quality in their schools.

Regarding home indoor air quality problems, there are two main agencies that respond to calls from residents: the City of Oakland Building Services and the Alameda County Department of Health Services, depending on location of the residence. Both agencies can help identify whether there could be cause for concern and potential sources of IAQ, as well as identify what steps can be taken to mitigate the problem.

Some calls from residents resulted in the resolution of an IAQ problem. For example, a resident's call to the City of Oakland may trigger an investigation by a City Building Inspector, which in turn may result in requiring the building owner to fix the problem (e.g., stuck windows, mildew and mold problems, water intrusion, etc.). Some causes of indoor air quality problems may derive from Building Code violations and homeowners can be cited by the city and forced to pay for repairs to bring residences up to Building Codes.

As we have said, building inspectors have accumulated a great deal of knowledge about on-the-ground conditions in West Oakland regarding IAQ. However, their knowledge is generally not in a form that is readily available to decision makers. The City's Code Compliance Database could be a very important resource and tool for decision makers in helping to track the occurrence and type of IAQ conditions throughout the City. This, however, would require some restructuring of the database, and staff training, so that site conditions that are now included in a descriptive form, can be coded and searchable in a practical manner.

### Contact Information for Additional Resources

City of Oakland, Building Services, Code Compliance: (510) 238-3381

Inspection and response to complaints of violations, or other problems relating to the Oakland Housing Code (unsafe or unsanitary buildings that jeopardize the health and/or safety of the occupants or the neighborhood).

Environmental Protection Agency: [www.epa.gov/iaq](http://www.epa.gov/iaq)

This site has a great deal of information about IAQ in general and the IAQ Tools for Schools Program.

(800) 438-4318, [iaqinfo@aol.com](mailto:iaqinfo@aol.com), [www.californialung.org/support/indoorair.shtml](http://www.californialung.org/support/indoorair.shtml)

## Noise Pollution

Noise is defined as unwanted sound that disrupts normal activities or that diminishes the quality of the environment. Human activities add to the natural ambient noise levels. Mobile sources such as car, train, air, or ship traffic add to the natural ambient noise level and are the greatest contributors to the regional ambient noise level. At the local scale, stationary (or point) sources such as industrial areas, construction sites, or places where heavy machinery is used, usually contribute significantly to local ambient noise levels.

Noise pollution, in spite of different individual responses, can interfere with sleep or concentration and can even cause hearing loss. Human response to noise is also a function of the ambient environment in which the noise is perceived, and for example, the same ambient noise level that can be well tolerated outdoors, can disrupt activities indoors (e.g., sleeping or working).

West Oakland, due to its industrial character and being surrounded by a network of freeways, railways, and docks, is a community that has unusually high ambient noise levels. Noise pollution in this neighborhood comes from industrial facilities as well as from freeway traffic, truck roadway traffic, Union Pacific railway traffic, BART, and the ships and containers coming in and out of the Port of Oakland.

Measurements of ambient noise levels taken in West Oakland by different acoustical consultants at different times have shown that this is a community where noise pollution is prevalent. Residents of West Oakland are subjected to unusually high ambient noise levels, which are generally not accepted in residential areas. On some local streets (truck routes in particular), and in areas along I-880, BART and railroad tracks, noise levels can approach or

sometimes exceed 70 dBA,[25] although acceptable noise levels for residential areas are normally 60 dBA[26] as described in the City of Oakland Noise Ordinance. For example, measurements taken in the vicinity of the West Oakland BART station showed that local noise environment is affected not only by transportation-related sources and but also by manufacturing activity at the Read Star Yeast facility.

The EIP Neighborhood Taskforce identified noise as one of the issues that they were concerned about and want to see monitored in their community. However, other than a few studies covering different areas of West Oakland at different periods, there is no good source of information available that gives residents and the city a complete and up-to-date picture of neighborhood noise conditions.

Although the city of Oakland has had in effect a Noise Ordinance and other regulations that define standards for maximum allowable noise levels for various land uses,[27] enforcement of these standards is still a problem. At the time of our investigation (2000) we found a lack of resources (equipment and staff) to address noise problems.[28] We also found a lack of clarity in the division of enforcement responsibilities between the City of Oakland Code Compliance Unit and the Police Department, the two enforcement agencies that can issue citations to those in violation of Noise regulations. It is sometimes confusing to residents and even city staff to know which unit is responsible for the enforcement of a specific type of violation. In general, the Police Department is responsible for abating transient noise sources (noise generated from a temporary source such as a loud party or truck traffic), and the Code Enforcement Division is responsible for abating fixed noise sources (noise generated from permanent sources such as mechanical equipment within a property).[29]

Although there is information available in the Code Compliance Database since 1996 regarding noise violations (Violation Code 35 of the Oakland Planning Code), after interviewing City Inspectors, it was found that this violation code was not being applied consistently.[30] This made it impossible to use this database to build an indicator based on the number of violations of the Noise Ordinance. Even if one were to improve consistency and accuracy of code reporting, an indicator based on information from this database would not give us a full picture regarding noise levels in this community.[31] Also, the meaning of a particular rise in the indicator value (i.e., an increase in the number of violations) could simply mean an increase in enforcement activity rather than a worsening of the noise conditions in the neighborhood.

As none of the existing data sources was found to provide reliable, consistent, and regularly updated data that could support an indicator in this area, we have opted to include Noise Pollution in the "Indicators Not Included" section of this report. We further recommend that attention will be given not only to developing adequate information in this area (e.g., noise map for the neighborhood), but also to clarifying responsibilities amongst different city agencies. Increased coordination between the City Planning and Code Compliance Departments and the Oakland Police Department, together with a clear definition of enforcement responsibilities would likely help the community to better identify, locate, and address existing noise problems.

### What Can You Do About Noise?

In spite of legislation currently in place, there is no clear measure that will tell the community whether or not most of its residents live under the current legal noise limits. Although there are few community groups working to combat noise in West Oakland, some West Oakland residents routinely report noise violations to the city of Oakland. Residents, community organizations, and the city of Oakland can play a role in stepping up enforcement of the existing Noise Ordinance and in ensuring that different institutions with enforcement responsibilities coordinate their efforts in order to ensure compliance with current legislation.

### Contact Information for Additional Resources

City of Oakland: (510) 238-3333 (to report noise in progress, 24 Hours), (510) 238-3841 (to report persistent noise problems), (510) 238-6777 (Noise Hotline, 24 Hours)

## Notes

- [1] Fleet and Industrial Supply Center, Port of Oakland. FISCO/Vision 2000 Disposal and Reuse Final EIS/EIR: Table 3.10 2010 Daily Truck Traffic During Peak Week. July 1997. Oakland, CA. Appendix J.2, p. 28 (Option D).
- [2] Fleet and Industrial Supply Center, Port of Oakland. FISCO/Vision 2000 Disposal and Reuse Final EIS/EIR: Table 3.2 1996 Peak-Daily Truck Traffic During Peak Week to Rail Yard. July 1997. Oakland, CA. Appendix J.2, p. 19.
- [3] EPA, 2000.
- [4] Diesel exhaust is an irritant to the respiratory system given sufficient episodic exposure and may cause a variety of inflammation-related symptoms (e.g. headache, eye discomfort, asthma-like reactions, nausea, etc.) depending on individual susceptibility, and is a factor in exacerbating or initiating allergic hypersensitivity. In addition, diesel engine exhaust is “highly likely” to be carcinogenic through inhalation from ambient exposures. (“Health Assessment Document for Diesel Emissions” EPA, Washington, D.C., 2000)
- [5] Fleet and Industrial Supply Center, Port of Oakland. FISCO/Vision 2000 Disposal and Reuse Final EIS/EIR: Table 3.10 2010 Daily Truck Traffic During Peak Week. July 1997. Oakland, CA. Appendix J.2 Pp. 28
- [6] Fleet and Industrial Supply Center, Port of Oakland. FISCO/Vision 2000 Disposal and Reuse Final EIS/EIR: Table 3.2 1996 Peak - Daily Truck Traffic During Peak Week to Rail Yard. July 1997. Oakland, CA. Appendix J.2 Pp. 19
- [7] “West Oakland Diesel Particulate Emissions Study”, Oakland, California, 2001 (Draft – Aug 23, 2001)
- [8] The study estimates diesel emissions from truck traffic associated with Port related activities (based on an average engine running time per trip) and from other stationary and mobile sources at the Port (e.g. train and marine vessels), and from highway truck traffic.
- [9] For example, EPA’s Voluntary Diesel Retrofit Program helps build partnerships among industry, community groups, and state and local officials to implement retrofit projects that result in cleaner, healthier air for their communities ([www.epa.gov/otaq/retrofit](http://www.epa.gov/otaq/retrofit)). EPA, under the Clean Air Transportation Communities program, awards grants to communities aimed at reducing emissions from transportation sources and enhancing energy efficiency in the transportation sector. The California Air Resources Board, Sacramento, Calif., received a \$171,000 grant - “Community-based Transit Improvements: Simple Solutions and Measurable Results.”
- [10] Efforts in other communities to implement direct data-gathering programs on community environmental conditions have already shown promising results.
- [11] This ordinance recognizes that the presence of parked large trucks constitute a nuisance to residents and the community in general. It makes it illegal to park most trucks or trailers exceeding 7,000 lbs on residential streets or on a residential property (except in an enclosed garage). Business vehicles may be parked in residential areas only for the time that the vehicle is needed for use in construction or commerce at the property.
- [12] Blighted Properties in Oakland ([www.oaklandnet.com/government/government26.html](http://www.oaklandnet.com/government/government26.html)).
- [13] Database can be queried by a number of descriptors such as census tract, parcel number, or violation code.
- [14] Violation Codes #20 (exterior blighted property), #21 (unsecured building), and #25 (exterior graffiti) of the Oakland Municipal Code specifically refer to violations of the Blight Ordinance. There are however other types of blighted conditions that are not specifically captured by these codes and are left to the interpretation of the inspector, e.g. broken streetlights.
- [15] There are other data limitations regarding this database - e.g., duplicate records, and records without census tract, parcel number or correct address information - but code misreporting is probably the most significant, as it renders meaningless any data analysis.
- [16] Information based solely on the number of complaints or violations will very likely represent only a subset of blighted conditions in the neighborhood.
- [17] In 2000, the City of Oakland was in the process of reviewing the code system used in their Code Compliance Database.
- [18] Emissions from combustion of gas, oil, kerosene, wood, or coal, can be high, especially if appliances are old and not well maintained.
- [19] For example, particleboard and plywood wall paneling release formaldehyde, which is an asthma trigger and a known carcinogen; some insulation materials, floor tiles, etc., can release asbestos which is another known carcinogen.
- [20] The federal government recommends that the level of radon (a radioactive element) be measured in homes; there is already inexpensive measuring equipment available.
- [21] There are now several research institutes working actively on these questions. For example, Lawrence Berkeley Laboratory (LBL) is investigating IAQ (e.g., development of diagnostics and metrics for homes).
- [22] City Inspectors, when investigating complaints, check for some of the conditions that can cause poor indoor air quality such as the presence of mold, water intrusion, old or malfunctioning appliances, etc., and record this information in the Database in a descriptive form.
- [23] The use of the Code Compliance Database will not give the full picture of IAQ conditions throughout the neighborhood – the available information represents only a subset of the community as only those units where a complaint was filed are investigated. As with any other indicator based on number of complaints, an increase does not necessarily mean that the conditions are worsening – the rise can be due to a number of other factors. For example, awareness of IAQ issues and knowledge of who to call to request an inspection will potentially increase the number of complaints, whereas a fear of being evicted may prevent residents from filing a complaint even though their IAQ may be endangering their health.
- [24] EPA, [www.epa.gov/iaq/schools/promotional/whyiaq.html](http://www.epa.gov/iaq/schools/promotional/whyiaq.html)
- [25] Port of Oakland. 50ft. Dredge Environmental Impact Statement. [http://www.50ftdredge.com/EIS/EIS\\_7.2.htm](http://www.50ftdredge.com/EIS/EIS_7.2.htm)
- [26] Ambient noise levels can be measured in different ways. One common unit is the dBA (A-weighted decibel) which weighs the sound intensity measured in decibels (or dB) to take into account the range of human hearing. (60 dBA is similar to the noise generated by a vacuum cleaner at 10 feet; an increase of 10 dBA results in a perceived doubling of loudness.)
- [27] Different noise levels are specified for the following land uses: residential, schools, child care, health care or nursing home, and public open space; commercial; and manufacturing, mining, and quarrying.
- [28] According to a Police Officer working with noise enforcement, the Oakland Police Department does not have the capability to fully investigate all complaints and most infractions go unreported (e.g., an officer can halt the noise-generating activity but often times does not issue a citation).
- [29] Noise Abatement Program, CEDA 1997.
- [30] There are other data limitations - e.g., duplicate records, and records without census tract, parcel number or correct address information- but misreporting of codes is probably the most significant, as it renders meaningless any data analysis.
- [31] Note that this database only accounts for complaints and violations registered by the Code Compliance Division and does not include Police Department citations.