OAK TO NINTH AVENUE

HEALTH IMPACT ASSESSMENT

Public Review Draft

UC Berkeley Health Impact Group

May 31, 2006
The process of plan making should be viewed as a continuous cycle. There are interrelationships among the phases of the planning process. Information gained at a later phase can inform the outcome of an earlier phase. It is important to recognize the iterative nature of planning and to allow for continuous cycling to occur.

THE PLANNING PROCESS

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Dedicated to those who work for an informed, accountable and just democracy
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About UC Berkeley Health Impact Group

The UC Berkeley Health Impact Group (UCBHIG) is a collective of graduate students and faculty associated with the UC Berkeley School of Public Health. Please direct comments and questions on the Oak to Ninth Avenue HIA to ucbhig@gmail.com.
May 30, 2006

Oakland City Council
One Frank Ogawa Plaza
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Oakland, CA 94612

Honorable Members of the Oakland City Council:

We are pleased to share with you this complete public review draft the Oak to Ninth Avenue Health Impact Assessment.

Having expertise, knowledge, and experience from many disciplines and perspectives supports good public decisions. We believe that this assessment complements other environmental and economic analysis conducted for the Oak to Ninth Avenue development project, by looking at how the project as proposed affects the conditions required for optimal health.

The report includes analysis of impacts on five issue areas: parks and open space, pedestrian injury, housing, air quality, and noise along with constructive recommendations for improving the project and mitigating adverse health impacts. Findings for some of these component analyses have been already communicated to you and the Oakland Planning Commission.

Meaningful public involvement and buy in of all stakeholders also supports successful outcomes. This assessment therefore provides and analysis of the history and process that led to this development proposal and the quality of the public involvement opportunities along the way.

We understand that successful decisions typically involve trade-offs. Still, we trust you will take the time necessary to review our findings and consider and evaluate the recommendations and their feasibility.

We are currently providing this assessment as a public review draft. We would be happy to respond to any questions would also request city staff point out any errors or omissions. Finally, we would be very interested in your perspectives on the value of health impact assessment for future city planning decisions.

Respectfully,

The U.C. Berkeley Health Impact Group
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Executive Summary

Introduction

Health Impact Assessment (HIA) refers to a set of methods and tools used to answer an important question: how do policies, plans, programs, or projects affect health, health behaviors, and social resources necessary for health? A number of countries and the World Health Organization (WHO) have adopted Health Impact Assessment (HIA) methods to incorporate the consideration of potential health consequences into the review of proposed policies and developments.

The Oak to Ninth area comprises approximately 64 acres of waterfront property owned by the Port of Oakland. According to the City of Oakland, “The proposed project includes up to 3,100 residential units, 200,000 square feet of ground-floor commercial space, 3,500 structured parking spaces, approximately 29.9 acres of public open space, two renovated marinas, and a wetlands restoration area.” The University of California at Berkeley Health Impact Group (UCBHIG) is a non-partisan, independent collective that emerged from a graduate seminar on HIA at the UC Berkeley School of Public Health. UCBHIG conducted a HIA of the Oak to Ninth Avenue development project due to its large scope and influence on many determinants of human health. UCBHIG members did not receive funding for this assessment nor do any members have economic interests in the outcomes of the Oak to Ninth decision.

We conducted the analysis for this HIA between February and May 2006. Prior to and at public hearings of the Oakland Planning Commission and the Oakland City Council in March 2006, we communicated several components of this analysis and associated design recommendations. Many of the issues evaluated in this HIA have been the subject of public comment and continue to be the subject of substantial public debate and negotiation. This analysis does not reflect or take into account any changes to the project subsequent to the Final Environmental Impact Report in February 2006.

Like Environmental Impact Assessment (EIA), this HIA includes an impacts analysis and proposes a set of mitigations to those impacts. However, the Oak to Ninth HIA also differs from the traditional EIA in several significant ways:

- HIA complements analysis required under CEQA;
- HIA evaluates environmental, social, and economic effects using the lens of human health;
- HIA estimates benefits as well as adverse consequences;
- HIA evaluates the distribution of impacts on different populations; and,
- HIA uses quantitative and qualitative methods.

This HIA evaluates the project’s effects relative the following health-related factors. These include:

- Democratic planning processes
- Parks and natural spaces
- Pedestrian injuries
- Healthy housing and social integration
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- Air quality
- Community noise

Given limits on resources and time available for the project, our group has not evaluated all health issues potentially related to this project. Methods used by UCBHIG in conducting this analysis include:
  - Review of the empirical and scientific literature related to this project
  - Review of public standards, objectives, regulations, and guidance relevant to planning and health
  - Planning document review
  - Interviews and dialogue with key stakeholders
  - Secondary data analysis
  - GIS Mapping
  - Quantitative forecasting
  - Review and analysis of public comment and testimony

This report includes an executive summary, an introduction and one chapter for each of the above topics. Each chapter begins with a short summary of identified impacts and recommendations to improve those impacts. Each chapter is then organized into the following sections: (A) summary (B) evidence on the relationships between the topic and health; (C) relevant established standards and health objectives; (D) the setting, context, or existing conditions; (E) analysis and impact assessment; and (F) recommendations for design and mitigation. Relevant figures and maps follow each chapter. We include each chapter summary below as part of this executive summary.

UCBHIG recognizes that there is significant public controversy associated with approval of the Oak to Ninth Avenue project and related planning and design issues. Overall, we aim for the Oak to Ninth Avenue Health Impact Assessment to provide constructive recommendations both in the interest of social and public health and in the interest of an open and transparent public process. Our groups’ long term interest is to use health impact assessment in support of future development in the City of Oakland.

Chapter Summaries

Chapter 2: Planning Process Analysis

Stakeholders participating in the Oak to Ninth Avenue development process have raised several concerns about the planning procedures. Many people allege that the development proposal submitted by Oakland Harbor Partners (herein known as OHP or “the Developer”) disregards the legislatively established Estuary Policy Plan, does not fulfill the obligation to develop a specific plan, and does not follow the terms of the Port’s Schedule of Performance. Others contend that planning has not accounted for more substantive planning issues such as affordable housing, integration, pedestrian safety, and open space accessibility. This planning process analysis examines the following five process-related questions:

1. Did the Development Process conform to the requirements in the Port of Oakland’s request for qualifications (RFQ)?
2. Is the Development Project consistent with the Oakland General Plan?
3. What consequences result from not requiring the Developer to produce a specific plan?
4. What was the quality of public participation in the Oak to Ninth Avenue Development Process?
5. What was the role of interest groups in influencing this development project?
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Key Findings
1. A review of the Oak to Ninth Avenue development process relative to the Port of Oakland’s RFQ schedule of performance revealed the following five issues:
   a. Oakland Harbor Partners (OHP) did not initiate or develop a specific plan with community input as required in the RFQ Schedule of Performance;
   b. OHP did not meet subsequent scheduled performance milestones;
   c. OHP development plans diverged from the Estuary Policy Plan vision without public review;
   d. The Port of Oakland did not re-appraise the property or alter the land sales price despite plan revisions expected to increase property values;
   e. Economic feasibility studies that may have justified the OHP revision of the project objectives were not subject to public review or scrutiny.

2. Revisions to a General Plan should generally follow a process similar to the one that led to its adoption. In the case of the Oak to Ninth Avenue development, the public and stakeholders are responding and reacting to a proposal in substantial conflict with established public policy goals as articulated in the Oakland General Plan without first having the opportunity to re-evaluate those policy goals.

3. Evidence suggests that the OHP development plan is neither substantively or procedurally equivalent to a specific plan. By issuing a development proposal in advance of comprehensive planning and then later suggesting that the development proposal is substantively and procedurally equivalent to a specific plan, the City of Oakland may be effectively de-legitimizing both the City’s General Plan as well as established planning principles.

4. In the Oak to Ninth case, the lack of ability for participants to influence design and planning appears to be a substantial barrier to meaningful public participation

Recommendations
While time and expense is required for a successful public planning process, the costs of poor decisions, whether measured in public dissatisfaction, loss of trust in public agencies, or human, social, and environmental costs outweighs these short term expenses. Successful public involvement has many direct and indirect social benefits. The following are three recommendations for the Oak to Ninth Development as it stands in May 2006:

1. The City of Oakland should specifically document whether and how the project has been responsive to public concerns and to constructive design change recommendations raised in the numerous public meetings and hearings.

2. Regardless of the history of the process, the City of Oakland should convene an independently facilitated multi-stakeholder consensus process to address unresolved controversies associated with the Oak to Ninth Development and to address and resolve inconsistencies between the project and established General Plan goals and policy.

3. The findings from both the documentation of public concerns and the multi-stakeholder consensus process should be made publicly available, at a minimum via the City of Oakland website.

Chapter 3: Parks and Natural Spaces
Access to parks and natural spaces confers numerous health benefits. For example, contact with nature and passive and active recreation are positively associated with physical activity, mental health and a sense of well being, social cohesion, and environmental quality. Specific health outcomes improved by access to parks and natural spaces include depression, obesity, heart disease, cognitive function, and problem-solving ability. Significant economic and social costs result from limited and unequal access to parks and natural spaces.

Analysis of the current distribution of city parks in Oakland reveals that large percentages of Oakland residents do not have access to open space resources which can help prevent many of the disease outcomes currently endemic in the city such as diabetes, hypertension, and obesity. Less than half of Oakland residents live within 10 minutes walking distance of a city park. The distribution of access to Regional Parks is also not uniform among Oakland neighborhoods. Most striking is the lack of access to large parks that would be suitable for recreation and getting the recommended amounts of physical activity. In particular, two-thirds of Oakland youth do not live in areas that provide access to adequate park resources. This is an environmental factor contributing to childhood obesity.

The parks and natural spaces that remain in the public domain in the proposed Oak to Ninth development will provide a significant health benefit to the future residents of the development; however, the project, in part due to its design, does not provide a significant new park resource for the City as a whole. Only with modifications to increase the accessibility of these parks to adjacent neighborhoods and other Oakland residents will they help reduce the current park shortage for the City as a whole. With such modifications, these parks could result in a significant benefit to the health of Oakland residents.

**Key Findings**

1. The Oak to Ninth Project will result in a new residential neighborhood rich in park resources; this will have positive health benefits for the residents of this new neighborhood.
2. The Oak to Ninth Project represents a net loss of 15 acres of open space relative to existing planning designations under the Oakland General Plan Estuary Policy Plan; this represents the loss of a significant health resource for Oakland as a whole.
3. Unmitigated physical and social barriers between the proposed estuary and waterfront resources and upland neighborhoods will limit the potential health benefits of the project to Oakland residents. This represents a missed opportunity to improve the health of Oakland residents.
   - Elements of the Project, particularly the large residential buildings, create potential physical and social barriers to views and public access to public park resources along the Estuary and Waterfront.
   - Physical barriers, including the rail corridor and the I-880 freeway corridor create a significant obstacle to convenient public access from upland and park-poor neighborhoods.
   - The project did not include planning or design for functional access between upland neighborhoods and proposed public park resources along the estuary and waterfront.
   - Existing preliminary work on estuary access (e.g., 5th Avenue Multi-modal transportation design work) was not reflected in the development proposals to the City.
   - Facility and operations planning for the proposed parks do not reflect input and needs of residents of upland neighborhoods.
   - The community benefits district proposed for the park risks functional privatization of park resources.
Recommendations for Design and Mitigations

1. Create safe, continuous, and functional routes connecting the waterfront to adjacent neighborhoods. At a minimum, an inviting route should exist along the estuary channel and along 5th Avenue.
2. Provide public transit services directly to the waterfront.
3. Increase public parking adjacent to waterfront park resources.
4. Ensure the socio-economic integration of project housing.
5. Explore design changes to improve visibility of the waterfront.
6. Explore re-routing the Embarcadero between the residential uses and the public waterfront.
7. Include residents of upland neighborhoods in park planning.
8. Create seats for citywide interests on all oversight bodies for project parks.

Chapter 4: Pedestrian Injuries

According to Oakland’s Pedestrian Master Plan, Oakland suffers approximately 85.5 vehicle injuries to pedestrians per 100,000 every year including 3 pedestrian fatalities per 100,000 per year. The rate of pedestrian injuries is about 4 times the USDHHS standard; the rate of fatal injuries in Oakland is three times the USDHHS standard. A significant number of Oakland pedestrian injuries occur in the neighborhoods and streets surrounding the proposed project (e.g., Downtown, Jack London Square, Chinatown, Lakeshore, East Lake, Lower San Antonio, International Blvd). Health impact forecasting shows that the project will contribute to an increase in pedestrian injury rates due to a significant increase in project-related vehicle trips on roadways surrounding the project. Furthermore, safe walking or biking routes between the project and upland neighborhoods, schools, community facilities, and regional transit stops do not exist. The project’s adverse health impacts warrant investments in feasible pedestrian safety mitigations at intersections and in pedestrian routes between the project and typical destinations.

Key Findings

1. Quantitative forecasting of changes to Oakland’s pedestrian injury rate based on project-related changes in traffic flows and a baseline injury rate of 100 injuries per year in the area of influence estimates that the project’s traffic alone will contribute about 5.4 additional injuries per year or 268 pedestrian injuries in the years 2025-2075. The cumulative impact of increased traffic in the area by 2025 forecasts 20 additional injuries per year with a total of 1000 growth related additional injuries in the years 2025-2075.

2. No safe pedestrian routes currently exist between the project and upland neighborhoods; residents traveling to schools, community facilities, and transit stops via walking are at risk of pedestrian injury.

Recommendations for Design and Mitigations

1. Implement a traffic calming program in adjacent residential neighborhoods to include vehicle lane narrowing, raised crosswalks, raised intersections, and traffic circles.
2. Provide countdown pedestrian signal heads, bulb outs, and center median refuge islands at high-volume multi-lane intersections where cumulative traffic volume increases exceed 5%.
3. Provide pedestrian warning signs or lights at all crossings or cross walks without traffic signal lights.
4. Divert through-traffic around mixed use neighborhoods.
5. Study one-way to two-way conversions and lane reductions for the Chinatown District.
6. Institute speed limit reductions to less than 20mph in mixed-use residential areas adjacent to the project.
7. Plan and implement bicycle and pedestrian trails between the waterfront, adjacent neighborhoods and transit stations east of I-880; one class I bike should be provided (e.g., along the estuary channel pathway and the existing at-grade 5th avenue roadway should undergo redesign as a multi-modal corridor between the Eastlake District and the waterfront.
8. Widen sidewalks or provide buffers between sidewalks and vehicle lanes on busy roadways with significant pedestrian traffic.

Chapter 5: Healthy Housing and Social Integration

Encompassing shelter, home, and neighborhood, housing affects health in diverse ways—positively and negatively. Healthy housing is affordable, physically safe, stable, spacious, and located in a setting that provides access to jobs, goods, services, transportation and nature, supporting meaningful social participation. Land use policies such as zoning and redevelopment can either facilitate or hinder the achievement of adequate housing needs in a city. Research demonstrates that residents of low-income economically segregated communities in Oakland live about six fewer years and experience a much greater burden of chronic disease than those in non-poverty neighborhoods. These reductions in life expectancy are caused by many place-based factors including air pollution, violence, traffic hazards, poor schools, the absence of parks, and limited economic opportunity and mobility. In contrast, mixed-income neighborhoods are assured the health benefits of access to healthier foods, better schools, better public transit, safer neighborhoods, park access and cleaner environments. The Oak to Ninth Development, as proposed, increases the supply of future market-rate housing but does not respond to the need for moderate and low-income housing. The project also creates a largely upper-income class-stratified community. As such, it is potentially a lost opportunity for improving health and wellbeing, growth of community ties, and enhancement of social cohesion in Oakland.

Health Impacts
1. The Oak to Ninth Project increases the future supply of housing in Oakland for those able to afford market-rate housing.
2. The project does not equitably advance Regional Housing Needs Determination (RHND) objectives for all income strata. Oakland has only met 18%, 57%, and 8% of its current RHND obligations for very-low, low and moderate income households, while exceeding RHND requirements for market rate housing. The project would result in an additional 121% of the 1999-2006 production targets for market-rate housing, while producing only 8%, 29%, and 0% of very-low, low and moderate production goals.
3. The project does not provide adequate and attractive housing choices for families with school aged children.
4. The project, in its current design, will foster the development of a socio-economically homogeneous community, exacerbating existing tensions between individual, neighborhood, and commercial interests.
5. The project may contribute to a greater concentration of below-market housing in low-income neighborhoods.

ES-6
6. The project may contribute to regional air pollution and traffic congestion, resulting from demographic changes and shifts in the local jobs/housing balance.

**Recommendations for Design and Mitigations**

1. Ensure distribution of housing costs reflects the current household income distribution of Oakland so that:
   a. At least 25% of housing is affordable to low-income and very low-income households,
   b. At least 25% of housing is affordable to households earning the area’s median income;
2. Incorporate mixed-income dwellings as opposed to building market rate and below market rate housing in segregated areas.
3. Include as part of the development project site and implementation plans for a neighborhood elementary school.
4. Creating crossing points and common paths of access where residents must come in contact with one another.
5. Include a common courtyard with benches, plants and fountains in order to create common spaces through which dwellers pass and mingle.

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**Chapter 6: Air Quality**

Vehicle emissions associated with the I-880 freeway, including particulate matter and diesel particulate matter have the potential to result in significant and adverse impacts on the health of residents of the Oak to Ninth project. Without mitigations, future residents of the Oak to Ninth Avenue living within 500 feet of the I-880 freeway are likely to experience higher rates of respiratory illnesses and higher morbidity from asthma. The project also indirectly increases exposure to roadway particulate matter emissions in neighborhoods surrounding the project.

**Key Findings**

1. Future Oak to Ninth residents are at risk of chronic and acute respiratory disease due to freeway related vehicle emissions.
2. Freeway diesel emissions result in a small increase cancer risk for project residents.
3. Project related traffic will increase cumulative air pollution exposure to residents of neighborhoods adjacent to the project, including children and the elderly.

**Recommendations for Design and Mitigations**

1. Evaluating modifications to the project footprint to reduce the number residential dwellings within 500 feet of interstate I-880.
2. Notifying all potential buyers that the property they are occupying has air quality risks and educate them in the proper use of any installed air filtration.
3. Requiring, as an additional condition of development, prospective monitoring of particulate matter hot spots both on the Oak to Ninth site and in neighborhoods to the east, northeast, and southeast.
4. Developing requirements for air quality mitigation measures and/or traffic demand management measures that would be triggered by local particulate matter levels that exceed California standards.
5. Include as part of the development project site and implementation plans for a neighborhood elementary school. Alternatively, provide a safe and continuous pedestrian pathway to a nearby school with 0.5 miles of the project site.

6. For residential units within 500 feet of I-880:
   a. Providing residential units with individual HVAC systems in order to allow adequate ventilation with windows closed;
   b. Locating air intake systems for heating, ventilation, and air conditioning (HVAC) systems as far away from existing air pollution sources as possible;
   c. Using HEPA air filters in the HVAC system and developing a maintenance plan to ensure the filtering system is properly maintained; and,
   d. Utilizing only fixed windows next to any existing sources of pollution.

7. Providing 110 and 220 outlets at project loading docks so that trucks can connect with these outlets to power their auxiliary equipment.

8. Utilizing only electric forklifts and landscaping equipment in the project operations and the operations of tenants.

9. Requiring the transit shuttle to run at least every 30 minutes in the off-peak and every 15 minutes during peak travel times with hours that match BART’s schedule.

10. Unbundling the cost of parking from residential rents to encourage residents to reduce their car ownership rates.

11. Implementing a project-wide car share program.

12. Subsidizing transit passes to employees and residents at the project site (e.g. AC Transit’s Eco-Pass program).

13. Requiring secured bicycle parking for employees and residents.

14. Requiring commercial tenants to provide a parking cash-out program to their employees to reduce the likelihood of driving alone.

15. Providing a safe route for children living at the project to safely get to and from school by walking and bicycling.

16. Providing a safe route for walking and bicycling to area BART stations.

17. Consider reductions in regional and area wide air pollution emissions via modifications to the number and type of units below market rate.

Chapter 7: Community Noise

The Development of the Oak to Ninth project will result in exposure to future residents of high levels of community noise. Parcels A, F, G, K, and M, closest to the freeway, have background noise levels currently over Ldn 70 dBA, and residential uses at these levels are considered normally unacceptable to clearly unacceptable based upon the Oakland General Plan. In addition, they are subjected to numerous short term railroad horn noise exposures at the 5th Street railroad crossing. The USEPA estimates that these unmitigated noise levels will result in community reactions ranging from threats of legal action to vigorous protest and may result in elevated blood pressure, circulatory disease, ulcer, colitis, and sleep deprivation. Implementation and evaluation of a comprehensive set of indoor and outdoor noise mitigations should be required as a condition of development.

Key Findings
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1. Regardless of the feasibility and effectiveness of indoor noise mitigations, some project residents are likely to be exposed to environmental noise to an extent that can create annoyance and adversely affect school and work performance.
2. Without mitigations, we estimate 53% of residents in dwellings adjacent to the railway line will experience sleep disturbance; even with a highly effective noise mitigation program capable of reducing noise by 50dB, 7% of residents would experience sleep disturbance.
3. Existing project area outdoor noise levels of greater than 70 dB will prevent normal voice level communication at unprotected exterior locations.
4. Plans under consideration for development of affordable housing include locating below market rate housing on project area parcels with the highest levels of noise create an adverse environmental justice impact.

Recommendations for Design and Mitigation
1. Reduce the speeds of the traffic on the Embarcadero and project’s residential streets.
2. Notify all potential buyers that the property they are occupying has noise risks.
3. Installation of noise-insulating windows, exterior doors and walls, and individual HVAC system.
4. Design units exposed to high noise levels with interior courtyards and patios that open into acoustically protected and shielded areas.
5. Require, as a condition of development, all feasible traffic demand management actions.
6. Integrate below market and market rate units in the same buildings to prevent environmental justice impacts.
A. The Rationale for Health Analysis of Growth and Development

A century ago, society successfully challenged unhealthful urban conditions such as air and water pollution, squalid housing, child labor, long work hours, and hazardous work. Today, the design of cities still has critical influences on health. Long distances between where we live, work, shop, and play require us to use automobiles for everyday activities, limiting physical activity and contributing to air pollution and global warming. Unaffordable housing forces people to live in crowded or substandard conditions; to compromise access to quality jobs, services and education; and to work multiple jobs to make ends meet. Segregation concentrates low-income populations in neighborhoods with multiple forms of disadvantage, including deteriorated schools and public infrastructure, high rates of crime, and limited employment opportunities.

Optimal health cannot be achieved by health services and individual behavior change alone. A healthy society requires healthful environments and working conditions including adequate housing; access to public transit, schools, parks and public spaces; safe routes for pedestrians and bicyclists; meaningful and productive employment; unpolluted air, soil, and water; and, cooperation, trust, and civic participation.

The Alameda County Public Health Department released its Oakland Health Profile in 2004, documenting the burden of disease specific to the City of Oakland. For neighborhoods with high poverty rates and poorer health outcomes in Oakland, the Department prioritized: “... a focus on supporting and working with community as partners to address social and environmental factors associated with good health. Specific issues include access to healthy foods, parks and playgrounds, housing, transportation, education, employment, universal access to quality health care, and clean air.”

The City of Oakland, California is currently engaged in the reviewing and approving an unprecedented amount of residential development. Evidence suggests resource-efficient land use strategies or “smart growth” can benefit health by increasing walking and bicycling, reducing emissions of pollutants into air and water, improving traffic safety, and building social capital. Indirectly, these benefits can reduce the incidence of heart disease, hypertension, asthma, bronchitis, stroke, diabetes, obesity, osteoporosis, depression, and some cancers. Greater public understanding of the relationship and evidence among health and ‘smart growth’ development might potentially support environmentally protective and resource-efficient land use strategies such as smart growth, transit-oriented and mixed-use development.

Infill development, transit-oriented development and other smart growth strategies have demonstrated regional and global environmental benefits, yet these strategies also have a real potential to cause or exacerbate avoidable health disparities. For example, many opportunity sites for infill and smart growth development are near freeways and other busy roadways. New residential development in core urban neighborhoods can thus increase noise and air pollution exposure and pedestrian–vehicle conflicts and injuries. New residential development that is not affordable risks involuntary displacement, a significant
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Chapter 1. Introduction

concern for existing urban communities. A health analysis can help analyze and mitigate such harmful effects. For example, health analyses could illustrate the need for requiring ventilation systems to reduce indoor particulate pollution and by requiring engineering countermeasures to reduce pedestrian injuries. Preventing adverse health outcomes supports the success of smart growth strategies.

Health evidence and analysis can also help focus planning attention to the design and infrastructure needs for healthy and active living. Key relationships between design and health include:

- Attention to safety and indoor air quality in the design and construction of buildings can both reduce environmental asthma triggers and prevent unintentional injuries.
- Neighborhood schools and child care centers reduce vehicle pollution while supporting childhood learning and parental involvement.
- Complete neighborhoods with integrated public and retail services and quality pedestrian environments increase physical activity potentially decreasing several chronic health conditions.
- Neighborhood groceries and farmer’s markets support households to make nutritious food choices.
- Accessible and frequent transit services provide improved access to goods, services and health care.
- Ethnically and economically integrated neighborhoods support equality of economic and educational opportunities, resulting in better mental health and less violence.

B. Health Impact Assessment

One underlying aim of land use planning and policy is to protect and promote public health and welfare. Currently, land use plans and development projects must comply with specific environmental health and public safety regulations, including public safety requirements in local General Plans, the California Environmental Quality Act, State requirements for noise mitigation in residential dwellings, local building codes, and water and air quality laws. Not all health and environmental health issues are addressed by these regulations however, and residents and community organizations frequently request planning agencies to conduct health and social analyses of land use plans and development projects.

Despite extensive research documenting the role of neighborhood environments on population health in the United States, few formalized mechanisms exist to translate this knowledge to public policy. Within local and regional Planning Departments, resources, expertise, and experience do not typically exist to assess health impacts. Similarly, most public health professionals have little experience working in the realm of planning.

Health Impact Assessment (HIA) refers to methods and tools used to inform policy-makers about how policies, plans, programs, or projects can affect health, health behaviors, and social resources necessary for health. (See Figure Intro.1: Pathways between social change, health determinants, and health outcomes in urban areas.) HIA also refers to the process through which a health assessment is conducted and translated to decision-makers. Internationally, many countries and international organizations use HIA to help direct public policy in ways that prevent disease and illness, potentially reducing significant economic costs of health care services. HIA aims to provide a systematic and prospective analysis of projects, programs and policies and subsequent communication of the findings to
stakeholders and decision makers.\textsuperscript{1} A number of different countries internationally and the World Health Organization (WHO) have adopted Health Impact Assessment (HIA) as a means to incorporate the consideration of potential health consequences into the review of proposed policies and developments.

While there are no specific legal or regulatory requirements for HIA in California, other laws do contain requirements to analyze issues relevant to health. For example, the California Environmental Quality Act (CEQA) requires that all potential environmental changes that can result in significant adverse impact on humans or public health must be addressed in an environmental impact report. (Section 15126.2 (a); Section 15065) Where project areas contain low-or moderate-income housing, California Redevelopment Law also requires a neighborhood impact report which describes in detail the impact of the redevelopment plan “… upon the residents of the project area and the surrounding areas, in terms of relocation, traffic circulation, environmental quality, availability of community facilities and services, effect on school population and quality of education, property assessments and taxes, and other matters affecting the physical and social quality of the neighborhood.” HIA provides Planning and Redevelopment agencies a way to help the requirements of both environment and neighborhood impact reports.

C. Oak to Ninth Development Project

The Oak to Ninth Development Project is described in the following narrative posted on the City of Oakland website.

“The entire project site is approximately 64.2 acres of waterfront property owned by the Port of Oakland. The proposed project includes up to 3,100 residential units, 200,000 square feet of ground-floor commercial space, 3,500 structured parking spaces, approximately 29.9 acres of public open space, two renovated marinas, and a wetlands restoration area. The project is proposed to be constructed in eight phases over approximately eleven years. The site is currently occupied by a combination of commercial, warehouse and light industrial uses. The existing buildings on the site will be demolished, with the exception of a portion of the Ninth Avenue Terminal shed building, Estuary Park, and the Jack London Aquatic Center. The site is primarily zoned M-40 Heavy Industrial with a small portion zoned S-2/S-4 Civic Center/Design Review. The General Plan land use designation is the Estuary Policy Plan’s Planned Waterfront District (PWD-1). As it pertains to the project area, construction of the proposed project will require consideration of amendments to the City of Oakland Estuary Policy Plan, the Central City East Redevelopment Plan, possibly the Central District Urban Renewal Plan, a rezoning and zoning code amendment because the property is not currently designated for residential or commercial uses, approval of a subdivision map, preliminary and final development plans, including design review, a development agreement, and possibly other City approvals/actions. In addition, approvals or permits may also be required from other agencies for activities such as modifications to the shoreline, demolition of structures, site remediation, wetlands restoration, local and regional access, and possibly other activities. One or more parcels in the project area may be listed on the "Cortese List" of hazardous waste sites (Government Code Section 65962.5).”

D. UCBHIG Health Impact Assessment

The University of California at Berkeley Health Impact Group (UCBHIG) is a non-partisan, independent collective that emerged from a graduate seminar on health impact assessment at the UC Berkeley School of Public Health. UCBHIG members did not receive funding for this assessment nor do they have economic interests in the outcomes of the decision.

This seminar introduces students to the core concepts, approaches, and tools of HIA. Students also engage firsthand with the practice of HIA by conducting an analysis on one project of regional significance and communicating their findings to local or regional officials. UCBHIG conducted a HIA of the Oak to Ninth Avenue development project due to its large scope and influence on many determinants of human health including, housing, social segregation, open space, air quality, environmental noise, traffic hazards, and its proximity to socially vulnerable populations.

We conducted the analysis for this HIA between February and May 2006. Prior to and at public hearings of the Oakland Planning Commission and the Oakland City Council in March 2006, we communicated several components of this analysis and associated design recommendations. Many of the issues evaluated in this HIA have been the subject of public comment and continue to be the subject of substantial public debate and negotiation. This analysis does not reflect or take into account any changes to the project subsequent to the Final Environmental Impact Report in February 2006.

UCBHIG also recognizes that there is significant public controversy associated with approval of the Oak to Ninth Avenue project and associated rezoning, General Plan amendments, and sale of public land. Developers and their advocates contend that their project would revitalize underutilized property, save the public the expense of open space development, and provide needed housing. On the other side, many argue that the project departs from Oakland General Plan, shortchanges open space and waterfront history, provides mainly high-end housing, and ignores many infrastructure and health and safety needs.

Like Environmental Impact Assessment (EIA), this HIA includes an impacts analysis and proposes a set of mitigations to those impacts. However, the Oak to Ninth HIA also differs from the traditional EIA in several significant ways:

- HIA complements analysis required under CEQA;
- HIA evaluates environmental, social, and economic effects using the lens of human health;
- HIA estimates benefits as well as adverse consequences;
- HIA evaluates the distribution of impacts on different populations; and,
- HIA uses quantitative and qualitative methods.

This HIA evaluates the project’s effects relative the following health-related factors. These include:

- Democratic planning processes
- Parks and natural spaces
- Pedestrian injuries
- Healthy housing and social integration
- Air quality
- Community noise
Oak to Ninth Health Impact Assessment
Chapter 1. Introduction

Given limits on resources and time available for the project, our group has not evaluated all health issues potentially related to this project. Methods used by UCBHIG in conducting this analysis include:

1. Review of the empirical and scientific literature related to this project
2. Review of public standards, objectives, regulations, and guidance relevant to planning and health
3. Planning document review
4. Interviews and dialogue with key stakeholders
5. Secondary data analysis
6. GIS Mapping
7. Quantitative forecasting
8. Review and analysis of public comment and testimony

This report includes an executive summary, an introduction and one chapter for each of the above topics. Relevant figures and maps follow each chapter. Each chapter begins with a short summary of identified impacts and recommendations to improve those impacts. Each chapter is then organized into the following six sections:

A. Summary;
B. Evidence on the relationships between the topic and human health;
C. Relevant established standards and health objectives;
D. A description of the setting, context, or existing conditions
E. Analysis and impact assessment;
F. Recommendations for design and mitigation.

Overall, we aim for the Oak to Ninth Avenue Health Impact Assessment to provide constructive recommendations both in the interest of social and public health and in the interest of an open and transparent public process. We hope that this analysis is useful to policy-makers. Our groups’ long term interest is to use health impact assessment in support of future development in the City of Oakland.
## Figure Intro.1: Pathways between social change, health determinants, and health outcomes in urban areas

<table>
<thead>
<tr>
<th>Health Determinant</th>
<th>Changes that affect health determinants</th>
<th>Impacts on human health</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Housing</strong></td>
<td>1. In-Migration / Out-Migration</td>
<td>1. Crowded conditions increase risks for infections, respiratory disease, mental health, and fire risk.</td>
</tr>
<tr>
<td></td>
<td>2. Natural and Man-Made Disasters</td>
<td>2. Unaffordable rents or mortgages result in trade-offs between housing, food, and medical care.</td>
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<td></td>
<td>3. Displacement / Dislocation</td>
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</tr>
<tr>
<td></td>
<td>4. Disinvestment / Blight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Gentrification</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Economic restructuring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Land Use Development</td>
<td></td>
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<tr>
<td></td>
<td>8. Globalization</td>
<td></td>
</tr>
<tr>
<td><strong>Livelihood</strong></td>
<td>1. In-Migration / Out-Migration</td>
<td>1. Unemployment is a source of chronic stress and low self esteem and is associated with health adverse behaviors and premature death.</td>
</tr>
<tr>
<td></td>
<td>2. Public finance (Disaster preparedness)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Displacement / Dislocation</td>
<td>2. Income is strongly associated with life expectancy</td>
</tr>
<tr>
<td></td>
<td>4. Disinvestment / Blight</td>
<td>3. Vacation leave provides time for rest and recreation</td>
</tr>
<tr>
<td></td>
<td>5. Gentrification</td>
<td>4. Sick leave supports timely use of health care</td>
</tr>
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<td></td>
<td>6. Economic restructuring (job loss, de-industrialization)</td>
<td>5. Rates of unemployment and poverty are proportional to crime rates</td>
</tr>
<tr>
<td></td>
<td>7. Land Use Development</td>
<td>6. Job autonomy predicts reduced mortality from cardiovascular disease</td>
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<td></td>
<td>8. Globalization</td>
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<tr>
<td></td>
<td>9. Inflation</td>
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<tr>
<td><strong>Nutrition</strong></td>
<td>1. Land Use Development (Farmland loss)</td>
<td>1. Adequate nutrition prevents infectious diseases</td>
</tr>
<tr>
<td></td>
<td>2. Disinvestment / Blight</td>
<td>2. Low birth-weight predicts chronic disease in later life</td>
</tr>
<tr>
<td></td>
<td>3. Economic restructuring (job loss, impoverishment)</td>
<td>3. Consumption of fruits and vegetables linked to reduced cancer risk</td>
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<td></td>
<td>4. Inflation</td>
<td></td>
</tr>
</tbody>
</table>
### Air Quality
- Pollutants in outdoor air
- Pollutants in indoor air
- Environmental tobacco smoke

<table>
<thead>
<tr>
<th>Infrastructure development (road building)</th>
<th>Land use development</th>
<th>Sprawl</th>
<th>Public finance (regulatory enforcement)</th>
<th>Vehicle emissions exacerbate respiratory disease and increase cardio-pulmonary mortality</th>
<th>Indoor aero-allergens cause or exacerbate asthma</th>
</tr>
</thead>
</table>

### Water Quality
- Contaminants in drinking water
- Infectious agents drinking water
- Recreational water quality.

<table>
<thead>
<tr>
<th>Land use Development (Water demand, wastewater treatment capacity, runoff)</th>
<th>Migration</th>
<th>Sprawl</th>
<th>Contaminated water can spread serious infectious disease</th>
<th>Some chemical contaminants in water increase risk of cancer</th>
<th>Recreational physical activity reduces cardiovascular diseases risk</th>
</tr>
</thead>
</table>

### Noise
- Environmental noise
- Occupational noise

<table>
<thead>
<tr>
<th>Infrastructure development (transport facilities)</th>
<th>Land use development (construction)</th>
<th>Urbanization</th>
<th>Chronic noise exposure harms sleep, temperament, hearing, and blood pressure</th>
</tr>
</thead>
</table>

### Safety
- Violent Crime
- Property Crime
- Fire hazards
- Traffic hazards

<table>
<thead>
<tr>
<th>Economic restructuring</th>
<th>Disinvestment /Blight</th>
<th>Public finance (fire services)</th>
<th>Urbanization</th>
<th>Indirect effects of crime include fear, stress, and poor mental health.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fear of violence inhibits walking behaviors</td>
</tr>
</tbody>
</table>

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*Intro-8*
### Transportation
Access to jobs, goods, services, and educational resources
Non-motorized travel
Vehicle miles

| 1. Migration       | 1. Public transit provides access to employment, education, parks, and health care services. |
| 2. Public infrastructure development | 2. Sidewalks, bicycle lanes, parks and open space facilitate physical activity, reducing heart disease, diabetes, obesity, blood pressure, and osteoporosis, symptoms of depression, anxiety, and falls in the elderly. |
| 3. Land use development | 3. Vehicle speeds are directly proportional to injury severity |
| 4. Rezoning | |
| 5. Economic restructuring (oil based economy) | |

### Education
School quality
School proximity

| 1. Land use development | 1. Children commuting to school have less sleep, less exercise, and greater exposure to vehicle pollution. |
| 2. Migration | 2. Local community schools can promote parent participation and good educational outcomes |
| 3. Economic restructuring (job loss) | |
| 4. Privatization | |
## Parks and Natural Space

<table>
<thead>
<tr>
<th></th>
<th>1. Land use development</th>
<th>1. Regular physical activity reduces the risk of developing heart disease, diabetes, osteoporosis, and obesity, reduces blood pressure, relieves symptoms of depression and anxiety, and prevents falls in the elderly.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Public infrastructure development</td>
<td>2. Access to places for physical activity combined with outreach and education can produce a 48% increase in the frequency of physical activity.</td>
</tr>
<tr>
<td></td>
<td>3. Economic restructuring (impoverishment)</td>
<td>3. Views of trees enhance the recovery of surgical patients</td>
</tr>
<tr>
<td></td>
<td>4. Migration (population increase)</td>
<td>4. People who live in greener environments reduces the number of health complaints</td>
</tr>
<tr>
<td>Quality and proximity of financial institutions</td>
<td>1. Segregation</td>
<td>5. Trees and greens space remove air pollution from the air and mitigate the heat island effects.</td>
</tr>
<tr>
<td>Quality and proximity of childcare services</td>
<td>2. Blight / Disinvestment</td>
<td></td>
</tr>
<tr>
<td>Quality and proximity of health services</td>
<td>3. Economic Restructuring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Gentrification</td>
<td>1. Local financial institutions help families create and maintain wealth</td>
</tr>
<tr>
<td></td>
<td>5. Inflation</td>
<td>2. Timely access to primary health services prevents serious hospitalizations</td>
</tr>
<tr>
<td></td>
<td>6. Privatization</td>
<td>3. Quality childcare increases childhood educational and job outcomes</td>
</tr>
</tbody>
</table>

## Private Goods and Services

| Quality and proximity of financial institutions | 1. Segregation | 1. Local financial institutions help families create and maintain wealth |
| Quality and proximity of childcare services | 2. Blight / Disinvestment | 2. Timely access to primary health services prevents serious hospitalizations |
| Quality and proximity of health services | 3. Economic Restructuring | 3. Quality childcare increases childhood educational and job outcomes |
|                    | 4. Gentrification | |
|                    | 5. Inflation | |
|                    | 6. Privatization | |

## Public services

| Quality and proximity of health services | 1. Public Finance (public service provision) | 1. Timely access to primary health services prevents serious hospitalizations |
|                                        | 2. Segregation | |
|                                        | 3. Economic restructuring | |
|                                        | 4. Privatization | |
# Social Networks
Contact with friends and families
Support from friend and family

1. Public Infrastructure development (transport facilities)
2. Land use Development
3. Migration
4. Displacement
5. Gentrification
6. Segregation

1. Physical and emotional support buffers stressful situations, supports illness recovery, prevents isolation, contributes to self-esteem, and reduces the risk of early death.
2. Social contact across ethnic and class groups ensures equitable access to public health and educational services

# Social Equity
The proportion of the population living in relative poverty
Attitudes towards or stereotypes of minority racial, social, and ethnic groups
The segregation of residences by race, ethnicity, religion, or class
The degree of inequalities in income or wealth

1. Segregation
2. Displacement / Dislocation
3. Social disintegration

1. Economic exclusion in segregated neighborhoods limits wealth which is a buffer against illness and stress.
2. Residents of low-income and ethnically segregated neighborhoods experience, high rates of teenage childbearing, tuberculosis, cardiovascular disease, and homicide.

# Political Systems
The degree and quality of participation in public decision-making
Government accountability

1. Globalization
2. Segregation
3. Capacity building
4. Decentralization
Oak to Ninth Avenue
Health Impact Assessment

Chapter 2
Planning Process Analysis
A. Summary

Stakeholders participating in the Oak to Ninth Avenue development process have raised several concerns about the planning procedures. Many people allege that the development proposal submitted by Oakland Harbor Partners (herein known as OHP or "the Developer") disregards the legislatively established Estuary Policy Plan, does not fulfill the obligation to develop a specific plan, and does not follow the terms of the Port’s Schedule of Performance. Others contend that planning has not accounted for more substantive planning issues such as affordable housing, integration, pedestrian safety, and open space accessibility. This planning process analysis examines the following five process-related questions:

1. Did the Development Process conform to the requirements in the Port of Oakland’s request for qualifications (RFQ)?
2. Is the Development Project consistent with the Oakland General Plan?
3. What consequences result from not requiring the Developer to produce a specific plan?
4. What was the quality of public participation in the Oak to Ninth Avenue Development Process?
5. What was the role of interest groups in influencing this development project?

Key Findings

1. A review of the Oak to Ninth Avenue development process relative to the Port of Oakland’s RFQ schedule of performance revealed the following five issues:
   a. Oakland Harbor Partners (OHP) did not initiate or develop a specific plan with community input as required in the RFQ Schedule of Performance;
   b. OHP did not meet subsequent scheduled performance milestones;
   c. OHP development plans diverged from the Estuary Policy Plan vision without public review;
   d. The Port of Oakland did not re-appraise the property or alter the land sales price despite plan revisions expected to increase property values;
   e. Economic feasibility studies that may have justified the OHP revision of the project objectives were not subject to public review or scrutiny.

2. Revisions to a General Plan should generally follow a process similar to the one that led to its adoption. In the case of the Oak to Ninth Avenue development, the public and stakeholders are responding and reacting to a proposal in substantial conflict with established public policy goals as articulated in the Oakland General Plan without first having the opportunity to re-evaluate those policy goals.

3. Evidence suggests that the OHP development plan is neither substantively or procedurally equivalent to a specific plan. By issuing a development proposal in advance of comprehensive planning and then later suggesting that the development proposal is substantively and procedurally equivalent to a specific plan, the City of Oakland may be effectively de-legitimizing both the City’s General Plan as well as established planning principles.

4. In the Oak to Ninth case, the lack of ability for participants to influence design and planning appears to be a substantial barrier to meaningful public participation

Recommendations

While time and expense is required for a successful public planning process, the costs of poor decisions, whether measured in public dissatisfaction, loss of trust in public agencies, or human, social, and environmental costs outweighs these short term expenses. Successful public involvement has many
direct and indirect social benefits. The following are three recommendations for the Oak to Ninth Development as it stands in May 2006:

1. The City of Oakland should specifically document whether and how the project has been responsive to public concerns and to constructive design change recommendations raised in the numerous public meetings and hearings.

2. Regardless of the history of the process, the City of Oakland should convene an independently facilitated multi-stakeholder consensus process to address unresolved controversies associated with the Oak to Ninth Development and to address and resolve inconsistencies between the project and established General Plan goals and policy.

3. The findings from both the documentation of public concerns and the multi-stakeholder consensus process should be made publicly available, at a minimum via the City of Oakland website.

B. Planning, Participation, and Public Health

Defining Public Participation in the Context of Institutional Decision-making In the context of public participation in public agency decisions, participation can mean attendance at a meeting, involvement in identifying problems to be solved, or a partnership to take action. Because there is the potential for “participation” to mean different things to different people, it is important to define and distinguish between the different types of participation.

Sherry Arnstein (1969) used the “Ladder of Participation” to illustrate the different types of engagement individuals may experience in planning. At the bottom of the ladder, the participant is not sought out for his/her experience and instead services or therapy are provided “to” the individual. “Informing and consultation” represent tokenism, where the voices of participants are sought out, but are rarely actually incorporated into any policy changes. “Placation” is when the participants advise decision-makers, but the power-holders retain the right to decide. The top rungs of the ladder illustrate where participants have meaningful ability to identify problems, change strategies and solutions, and influence decisions. The table below provides examples of each type of participation in Arnstein’s typology.

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Participation and Power In the *Ladder of Participation*, Arnstein distinguishes between the “haves” (those with power) and the “have-nots” (those without power) and insightfully acknowledges the barriers and obstacles to sharing decision-making power:

“Each group encompasses a host of divergent points of view, significant cleavages, competing vested interests, and splintered subgroups. The justification for using such simplistic abstractions is that in most cases the have-nots really do perceive the powerful as a monolithic “system,” and power-holders actually do view the have-nots as a sea of “those people,” with little comprehension of the class and caste differences among them. It should be noted that the typology does not include an analysis of the most significant roadblocks to achieving genuine levels of participation. These roadblocks lie on both sides of the simplistic fence. On the power-holders’ side, they include racism, paternalism, and resistance to power redistribution. On the have-nots’ side, they include inadequacies of the poor community’s political socioeconomic infrastructure and knowledge-base, plus difficulties of organizing a representative and accountable citizens’ group in the face of futility, alienation, and distrust. … Depending on their motives, power-holders can hire poor people to co-opt them, to placate them, or to utilize the have-nots’ special skills and insights. Some mayors, in private, actually boast of their strategy in hiring militant black leaders to muzzle them while destroying their credibility in the black community”.

### Examples of Participation based on Shelly Arnstein’s *Ladder of Participation*

<table>
<thead>
<tr>
<th>Participation Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manipulation</td>
<td>Officials educate, persuade, and advise citizens.</td>
</tr>
<tr>
<td>Therapy</td>
<td>Officials convene tenant groups to take a defined action to solve problems (e.g neighborhood cleanup campaign)</td>
</tr>
<tr>
<td>Informing</td>
<td>Through meeting, flyers, and other forms of outreach, power-holders inform stakeholders about plans and programs. This approach does not guarantee the material is understood and typically there is no channel for public feedback</td>
</tr>
<tr>
<td>Consultation</td>
<td>Through attitude surveys, neighborhood meetings, and public hearings, power-holders seek opinions from the lay public. This approach does not guarantee participant influence on plans.</td>
</tr>
<tr>
<td>Placation</td>
<td>Power-holders select community member(s) to participate on planning committee to represent the views of the community. This approach raises questions about who selects participants and whose views they represent as well as questions about participant influence on plans.</td>
</tr>
<tr>
<td>Partnership</td>
<td>Power is redistributed through negotiation and establishment of common ground-rules. This approach typically results from organized power-base in the community making demand to officials. Authenticity requires structures to make community leaders accountable to members.</td>
</tr>
<tr>
<td>Delegated Power</td>
<td>Participants have decision making power either on the planning/decision-making board or as separate/parallel groups of citizens &amp; power-holders.</td>
</tr>
<tr>
<td>Citizen Control</td>
<td>Neighborhood corporation with no intermediaries between it and the source of funds.</td>
</tr>
</tbody>
</table>

Arnstein also notes several arguments against shared power.
"Among the arguments against community control are: it supports separatism; it creates bALKANIZATION of public services; it is more costly and less efficient; it enables minority group "HUSTLERS" to be just as opportunistic and disdainful of the have-nots as their white predecessors; it is incompatible with merit systems and professionalism; and ironically enough, it can turn out to be a new micKY MOUSE game for the have-nots by allowing them to gain control but not allowing them sufficient dollar resources to succeed. These arguments are not to be taken lightly. But neither can we take lightly the arguments of embittered advocates of community control - that every other means of trying to end their victimization has failed!"

Freudenberg's (2004) analysis of the rights given to individuals provides another way of framing participation and community power. (See table below)

<table>
<thead>
<tr>
<th>Rights</th>
<th>Dimensions of Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right to be informed</td>
<td>Right to know laws, Freedom of Information Act, mandatory reporting of toxic emissions, public environmental impact reviews</td>
</tr>
<tr>
<td>Right to sit at decision-making table</td>
<td>Mandate for citizen participation in zoning or siting reviews, negotiation for settlement of lawsuits</td>
</tr>
<tr>
<td>Right to say no</td>
<td>Legal challenges for violation of due process in zoning or environmental impact review, other lawsuits</td>
</tr>
<tr>
<td>Right to frame issue and identify options</td>
<td>Participatory processes in which citizens have equal voice with other players and ongoing role in planning processes</td>
</tr>
<tr>
<td>Right to make decisions</td>
<td>Ballot initiatives</td>
</tr>
</tbody>
</table>

Both frameworks demonstrate that participant power works in a continuum, moving between power concentrated in the hands of experts and officials and power shared among residents of a community.

**The Significance of Participation for Democracy** Social participation is an essential activity in a democracy, whose principles include equality and popular control of collective decision-making. Reich (1994) defines the process of democratization as "a process of political change that increases the degree of peaceful competitive political participation in the governmental system and that enhances political and civil liberties at the same time."

Democracy requires an enabling environment, guaranteed respect for equality, integrity of person, and participation, and effective and accepted processes through which citizens can negotiate conflicting interests. Democratic decisions take into account the perspectives of the entire range of people and organizations with a stake in the outcomes, helping to identify problems hidden to experts and

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contributing ideas for more effective solutions. Moreover, engagement of diverse stakeholders can make explicit the existence of competing values and interests. Additionally, multi-stakeholder engagement creates opportunities to articulate and advance a common interest as well as generate the buy-in necessary for effective policy implementation.

All too often, public agencies discount the need for meaningful and inclusive participation in their decision-making. Government initiated public participation practices have often excluded those with the least economic or political resources. For socially marginal populations, this lack of influence combined with the limited value given to local experience augments powerlessness and increases mistrust of experts and institutions.

**Participation and the Value to Planning** The 2003 *State of California Guidelines for General Plan*, acknowledges the following benefits of community engagement in the land use planning process:  

1. Providing valuable information leading to more informed policy development by decision-makers.
2. Insuring the plan's successful implementation by building a base of long-term support with the public.
3. Reducing the likelihood of conflict and drawn-out battles by addressing public concerns during the general plan process rather than on a case-by-case basis in the future. This can also speed the development process and reduce project costs.
4. Educating the public about community issues.
5. Increasing the public’s ability and desire to participate in the community.
6. Enhancing trust in government by strengthening the relationship between elected officials, government staff, and the public.
7. Working towards community consensus and creating a vision for the future.
8. Laying the groundwork for community revitalization and increased investment in the community.
9. Obtaining public input regarding plan policies and community issues and objectives.
10. Providing the public with opportunities to evaluate alternative plans and to participate in developing and choosing a plan that works for their community.
11. Informing decision-makers about public opinion.
12. Preventing consuming, expensive, and divisive conflict
13. Avoiding litigation or ballot initiatives.

**The Significance of Participation for Public Health** The inclusive and participatory principles underlying democracy also support the health of a community. The World Health Organization’s Ottawa Charter on Health Promotion (1986) declared that “…people cannot achieve their fullest health potential unless they are able to take control of those things which determine their health.”

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community" as: "...one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential."  

Key elements of a healthy community related to social participation include:

- A strong, mutually supportive and non-exploitative community
- A high degree of public participation in and control over the decisions affecting one’s life, health, and well-being
- Access to a wide variety of experiences and resources, with the possibility of multiple contacts, interaction, and communication
- Encouragement of connection with the past, cultural and biological heritage, and other groups and individuals

Throughout the past decade, there has been increasing recognition of the importance of participation within the field of public health. Concepts such as social capital, collective efficacy, and social networks have all gained increasing popularity as research reveals that engagement in community can have positive health outcomes. At the same time, research on the built environment and health further elevates participation and community engagement as key health resource.

**Social Engagement, Social Networks, and Social Capital** The word “social” implies participation, engagement and belonging. Investigations into “social networks” and health have determined that an individual’s participation and belonging in a social network serves as a protective or risk factor for health outcomes. “Social ties” refers to the personal connections an individual has with relatives, friends, colleagues, etc and is often measured by social network diversity. “Social integration” refers to the existence or number of particular relationships or organizational involvements. Maintenance of both

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social ties and integration requires some degree of active engagement by the individual and the community.

“Social engagement” refers to the maintenance of many social connections and a high level of participation in social activities. “Social capital” refers to features of social organization such as civic participation, norms of reciprocity, and trust in others, that facilitate cooperation for mutual benefit. Though there are numerous terms which attempt to quantify and address distinct aspects of socialization, all of these terms involve (to some extent) participation, engagement, or belonging, in other words “being social.” Although connected, being social and participating are not the same things as having political power and being able to effect change in one’s personal or community life.

**Participation, Autonomy, and Health**

Autonomy and control are essential human aspirations. The Whitehall studies conducted by Michael Marmot and colleagues provide further insight into the interesting area of disease causality and personal control. The Whitehall Studies I & II are longitudinal cohort studies examining mortality from coronary heart disease (CHD) among British Civil Servants. In general, Marmot, Bosma, Hemingway, Brunner and Stansfeld found that there was an inverse social gradient in mortality from CHD, where men in lower ranking employment positions had higher rates of CHD than men in higher ranking positions. Related research has demonstrated that the degree of job control (including decision authority, skill discretion, ownership over work, etc) may impact rates of coronary heart disease and other health outcomes.

**Participation, Empowerment, and Health**

Wallerstein, recently published a comprehensive review of the evidence illustrating that strategies promoting empowerment can improve health and reduce health disparities for the World Health Organization. In this review, Dr. Wallerstein differentiated between empowering processes and outcomes of empowerment. Figure PPA.1 (See Figure PPA.1: Pathways to Empowerment) illustrate the ways in which (1) empowering strategies may improve health and reduce health disparities, and (2) how empowerment may be described as psycho-social, organizational and community/political outcomes.

Wallerstein states “While participatory processes make up the base of empowerment, participation alone is insufficient if strategies do not also build capacity of community organizations and individuals in decision-making and advocacy.” This sentiment is echoed by James DeFillipis in a critique of the use of social capital in community development. DeFilipis critiques Putnam’s description of social capital through voluntary organizations. By not differentiating between PTAs and trade unions for example, it allows Putnam to ignore power relations that significantly influence intergroup relationships. “More simply put, certain social networks are in greater positions of power than others and they can therefore yield

31 Ibid.
much more substantial returns to their members when those networks are engaged in social or political conflict.”  

Social participation at the psycho-social, organizational and the community-political levels are interconnected. As a person becomes more engaged in a particular activity (for example advocating for a particular cause), they are more likely to feel a sense of social cohesion and feel strong social ties through their participation in a group with a particular goal guiding the group’s activity (for example defending the Oakland waterfront). Increased social engagement may have the benefits of improved mental and physical health because the person is out of the house more often and intellectually and socially stimulated. At the same time, as the person becomes more involved, this strengthens the capacity of the organization to achieve change, which has the potential to influence community and political outcomes. The table below provides examples of the conceptual direct and indirect health consequences of participation.

<table>
<thead>
<tr>
<th>Non-Participation Health Risks</th>
<th>Participation Health Benefits</th>
<th>Participation for Health Needs Social Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alienation</td>
<td>Optimism/hope/positive outlook</td>
<td>Collective efficacy</td>
</tr>
<tr>
<td>Apathy</td>
<td>Self-esteem</td>
<td>Social capital</td>
</tr>
<tr>
<td>Passivity</td>
<td>Sense of control</td>
<td>Safety/ security</td>
</tr>
<tr>
<td>Stress</td>
<td>Sense of belonging</td>
<td>Housing adequacy</td>
</tr>
<tr>
<td>Allostatic load</td>
<td>Social support</td>
<td>Secure livelihoods</td>
</tr>
<tr>
<td>Depression</td>
<td>Inclusion</td>
<td>Access to health care</td>
</tr>
<tr>
<td></td>
<td>Self-efficacy</td>
<td>Environmental quality</td>
</tr>
</tbody>
</table>

**Summary** Overall, this brief synthesis of research on participation and health suggests that participation in planning can serve health interests for the following reasons:

- **Individuals have a fundamental right to direct and meaningful engagement on issues that affect them.** Participation thus serves the needs of individual freedom.
- **The problems affecting health and well-being in today’s society are complex and related to state, national and international institutions, laws, and policies; problems therefore cannot be resolved by one person or one agency but necessarily need the input of multiple stakeholders.**
- **Community engagement in decision-making improves health outcomes directly and indirectly.** The field of community-based participatory research has demonstrated that community involvement in the identification of health problems, selection of interventions, engagement in implementation, and evaluation of outcomes increases the success of the intervention.
- **Community ownership over decisions and their outcomes sustains involvement and facilitates stewardship, thereby helping to ensure long term success.**
- **Participation is necessary to understand the distribution of a proposal’s costs and benefits.**

C. **Established Standards and Health Objectives**

*Federal Requirements for Participation*

National Environmental Policy Act At the federal level, the U.S. constitution and other laws and regulations require citizen participation in decision-making. The National Environmental Quality Act (NEPA), adopted in 1969, is an example of one procedure to bring information about a project’s potential environmental impact into the public view for comment and review. A large number of states, including California have modeled laws after NEPA.

Executive Order 12898 The 1994 Executive Order 12898, Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations, focuses Federal attention on the environmental and human health conditions in minority communities and low-income communities. Within the NEPA process, the order requires Federal agencies to “… ensure that the public, including minority communities and low-income communities, has adequate access to public information relating to human health or environmental planning, regulations, and enforcement …” 33

Requirements and guidance for participation in California

Brown Act The Ralph M. Brown Open Meeting Act (commencing with Government Code Section 54950) requires cities and counties to provide advance public notice of hearings and meetings of their councils, boards, and other bodies. Meetings and hearings with some exceptions must be open to the public.

California Environmental Quality Act In California, any governmental action that may ultimately cause a physical change in the environment is subject to CEQA. Although the law provides for certain exemptions, when a local or state governmental agency determines that a project or action is subject to CEQA, the agency must determine whether or not the project or action might have significant adverse impacts on the environment. This determination can require an initial (abbreviated) study. If after the initial study, the agency finds no evidence exists for adverse impacts, it issues a negative declaration. If the study anticipates possible significant impacts, the agency requires an environmental impact report (EIR). The study and initial determination identify which potential adverse impacts are included in the EIR. Alternatively, if a project has known potential impacts, the agency and project proponent may find a way to modify the project in order to mitigate the impacts. In this case, the agency issues a “mitigated negative declaration,” and an EIR is not required.

If an agency requires an EIR, it must include analysis of the project and all potential impacts of concern. It must also include an analysis of alternatives, mitigations, and their feasibility. Typically, a professional consultant, financed by the projects developer or the proponent of a decision, performs the analysis and writes the EIR. The EIR is first published as a draft document, and the lead agency gives both public agencies and the general public at least 30 days to comment on the analysis. Law requires the governmental agency to respond substantively to all comments on the draft document in a final EIR. Citizens have the right to sue the approving public agencies to assure compliance. (See Figure PPA.2: California Environmental Quality Act Flowchart)

General Plan Requirements Although the majority of local land use and development decision making is conducted at the local level, many of the regulations for land use are established at the state level. In California, Government Code (sections 65000 et seq.) has established laws around general plan

requirements, specific plans, subdivisions and zoning. Currently, there are 533 incorporated cities and counties in California – all of which are required to adopt a “a comprehensive, long-term general plan for [its] physical development.” This plan is known as the “General Plan”.

In California, according to California Government Code (Title 7, Division 1, Chapter 3, Article 5, Section 65302), each general plan is required to include the following seven elements: circulation, conservation, housing, land use, noise, open-space, and safety. Other elements such as air quality, capital improvements & public facilities, community design, economic development, energy, flood management, geothermal, parks and recreation, and water are optional but often adopted as well. All elements, whether required or optional, may be published in a single document or in multiple documents.  

According to Toner and colleagues at the American Planning Association, a general plan is:

- A public guide to community decision making
- An assessment of the community's needs
- A statement of community values, goals, and objectives
- A blueprint for the community's physical development
- A public document adopted by the government
- Continuously updated as conditions change

The legislative body at the city (city council) and county (board of supervisors) level has primary responsibility for enforcing the policies established by the general plan and adopting zoning, subdivision and other ordinances to regulate land uses. Both the city council and board of supervisors are elected by the voting population. Once elected, the city council and board of supervisors usually nominate one or several hearing committee(s) to assist with analysis of land use policies. These committees may include a Planning Commission, a Zoning Adjustment Board and a Design Review Board. Depending upon the community, the hearing committee may have the power to approve proposals, although final approval is subject to the legislative body (city council or board of supervisors). Although they may provide recommendations, these hearing committees “do not have final say on matters of policy such as zone changes and general or specific plan amendments.” However, as the primary body reviewing proposed development and land use plans, the recommendations of the hearing committees, particularly the planning commission, do carry substantial influence on legislators’ decision-making.

Figure PPA.3 provides a general overview of some of the governing bodies involved in the planning process and the types of decisions/actions that they take. (See Figure PPA.3: Brief Overview of Planning Governance) According to general guidelines established by the State of California, throughout the planning process there is supposed to be community input as well as checking compliance with the California Environmental Quality Act (CEQA). Figure PPA.4 illustrates the process suggested by the state government of California and the many potential areas for feedback loops. (See Figure PPA.4: Suggested Local Plan Process in California)

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**California Planning Guidance** The 2003 State of California Guide to Planning provides the following recommendations for good community participation in the general plan process:

1. Public participation processes take time and resources. Dedicate adequate staff time and other resources to the process.

2. Community members should be included in the general plan process as soon as possible. A visioning process, focus groups, or an advisory committee can be used to identify issues and involve the community before the process is designed.

3. Participants need to know up front what they can expect from their participation and what the process sponsors will do with the information that comes out of the process.

4. It is critical to understand the issues that are important to different segments of the community, including residents, business owners, and elected decision-makers. Address their issues and concerns during the process. Make sure that all stakeholder groups feel that they have an opportunity to give input early in the process.

5. The process should be simple and transparent; participants should be updated frequently as the process moves forward.

6. The process should be designed to meet the needs of your community. No two processes should be the same. Questions to consider include: Will community members need childcare in order to attend meetings? Are residents more likely to participate on a weekend or early in the morning due to work obligations? Will providing refreshments influence more people to attend? How do community members get their information? How comfortable are they with technology? Is translation necessary?

7. The entire process should be documented. This includes keeping a record of and reporting on all groups that have been contacted, any information that is used to inform the process, and all decisions that are made. Documentation can be done through media stories, a website, newsletters, or other materials in order to keep the public informed.

8. The process should be as engaging, interactive, and fun as possible.”

**Environmental Justice and Related Guidance** Legislation in California has created additional public participation requirements for the California Environmental Protection Agency. In a report by the Cal/EPA Advisory Committee on Environmental Justice, the committee members acknowledged that meaningful public participation and promotion of community capacity building are critically important first steps to successful environmental decision-making processes. Their criteria for meaningful public participation include:

- Guidelines for meaningful public participation.

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38 These bills have been incorporated into California law in Government Code, Section 65040.12 (Title 7, Division 1, Chapter 1.5, Article 4), and Public Resources Code, Sections 71110-71116 (Division 34, Part 3).
• The identification of an office or contact person who has authority and responsibility for coordinating effective public participation opportunities.
• Awareness of and sensitivity to community-specific communication issues (including media, venue, language, and other cultural issues).
• Relationship building prior to environmental decision points.
• Educational, technical, and other assistance (i.e., capacity building) to support meaningful participation in environmental decisions – subject to the specific limitations in state law regarding the use of government funds for lobbying and other activities.
• Early public involvement in environmental decisions.
• Availability and timeliness of materials and information.
• Feedback to participants.

Requirements for Participation in the City of Oakland

At the local level, public participation must conform to the above Federal and State laws and requirements and would benefit from other non-mandatory guidance. Additional requirement for participation result from requests for state and federal funding.

Oakland Citizen Participation Plan

To receive federal funds for housing from Community Development Block Grant, HOME Investment Partnership, Emergency Shelter Grant, and Housing Opportunities for Persons with AIDS grants, the City of Oakland must submit a 5-Year Consolidated Plan, as well as annual Action Plans and Performance Reports to the U.S. Department of Housing and Urban Development (HUD). Included in this required planning is a Citizen Participation Plan, which clearly articulates how the City of Oakland plans to engage its citizen in public decision-making processes related to housing.40,41

According to the Plan amended by the Oakland City Council in 2000, “the City of Oakland is expected to take whatever actions are appropriate to encourage participation of minorities, people who do not speak English and people with disabilities.” The plan further states that “Genuine involvement by low income people must take place at all stages of the process including: identifying needs; setting priorities among these needs; deciding how much money should be allocated to each high-priority need and suggesting the types of programs to meet high-priority needs; as well as overseeing the way in which programs are carried out.”42 To facilitate public engagement, the Plan explicitly states when and where public notices and announcements of public hearings and information will be made available.

41 In a recent evaluation of Oakland’s administration of Community Development Block Grants, the evaluation consultants found that compared to five other neighboring cities, “the City of Oakland has one of the most extensive and inclusive structures for engaging the community in providing input into CDBG program.” However, it was noted that there were some important limitations and areas for improvement that could be made. To improve the decision making structure, the evaluators suggested: 1) clarifying the timelines for review; 2) generating meaningful community assessment data; 3) making evaluation data available much sooner in the review process; 4) reducing the frequency of elections From Meucci, S., P. Gibson, and P. Hanley, Evaluation of CDBG Administrative Practices: A Comparative Review of Selected Cities, G. Associates, Editor. 2002, City of Oakland. p. 1-59.
D. History of Planning for the Oak to Ninth Avenue Area

An example of community-led participation in Oakland planning occurred with the development of the Estuary Policy Plan. In 1992-1993, Oakland began to update the Open Space, Conservation and Recreation (OSCAR) element of the Oakland General Plan. In June 1993, Alameda County League of Women Voters published a report titled *The Waterfront. It Touches the World; How Does it Touch Oakland?* The report led to the creation of the Waterfront Coalition, a grassroots group that promoted the report’s suggestions that Oakland identify as a waterfront city. In embracing this identity as a waterfront city, advocates recognized that efforts needed to be made to preserve and revitalize the waterfront area.

In 1995, the Port of Oakland and the City of Oakland jointly sponsored a charrette to develop a community vision for the waterfront that engaged all affected stakeholders and at the same time generate additional policy support. At the same time, the General Plan Congress, a community-wide advisory committee, initiated a Waterfront Subcommittee which helped develop a report with goals, objectives and policies for the entire waterfront area. Recognizing the need for a more detailed study and plan of the Estuary portion of the waterfront, the Port and City of Oakland initiated the Estuary Plan Project, which later became the Estuary Plan Policy (EPP).

One of the key features of the Estuary Plan Project was its comprehensive efforts to engage community members. This included obtaining comments and inputs from:

- **Public agencies** – including the Bay Conservation and Development Commission (BCDC), East Bay Regional Parks District (EBRPD), the Trust for Public Lands, the City of Oakland Life Enrichment Agency—Parks, Recreation and Cultural Services, and the Oakland Museum.
- **Planning/Government Bodies** – including the City-Port Liaison Committee, the City Planning Commission, and the Board of Port Commissioners.
- **Technical Consultants** – ROMA Design Group served as the lead firm, directing the efforts of an Oakland-based team of consultants, including Hansen/Murakami/Eshima, associated architects; Hausrath Economics Group, urban economists; Gabriel-Roche, Inc., public participation and transportation; Korve Engineering, traffic engineering; as well as numerous other experts in specialized technical areas.
- **The Estuary Advisory Committee** – Members of the committee included: George Bolton, Carl Chan, Don Davenport, Carolyn Douthat, Paul Elizondo, Dr. Eleanor Engram, Ed Fernandez, Frank L. Fuller, Marguerite A. Fuller, Jack Gaskins, Robert Hamilton, Virginia Hamrick, Stana D. Hearn, Gary Knecht, Anthony Mar, Keith Miller, Rosemary Muller, Robert Odermatt, Vincent B. Reyes, Martha Robles-Wong, Sylvia Rosales-Fike, Carolyn Sandidge, C. Peter Smith, Sandy Threlfall, Richard E. Winnie, Cheryl Wong.

According to the Estuary Policy Plan:

“...The Estuary Policy Plan has been prepared in an attempt to address issues and concerns that have arisen related to continuity and accessibility of the shoreline, the quality and character of

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43 A charrette is an intensive design process that involves the collaboration of all project stakeholders at the beginning of a project to develop a comprehensive plan or design.

new development, and the relationship of the shoreline with surrounding districts and neighborhoods. More specifically, the plan builds upon the goals for the waterfront prepared by the General Plan Congress. The EPP called for "the transformation of maritime and industrial uses into a public oriented waterfront district that encourages significant public access and open space opportunities."

The EPP did not envision residential uses, but did allow for light industrial, manufacturing, artist lofts, workshops, a hotel, commercial-recreation, cultural uses, and water-oriented uses that complement the recreational and open space character of the waterfront.

**Timeline and Milestones for the Oak to Ninth Avenue Development Process**

<table>
<thead>
<tr>
<th>Year</th>
<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>1926</td>
<td>City of Oakland voters pass charter amendment to establish Port of Oakland as a quasi-independent entity. The Port's jurisdiction was ~ from the water's edge to 2nd Street</td>
</tr>
<tr>
<td>1993</td>
<td>League of Women Voters publishes award-winning report - <em>The Waterfront: It Touches the World; How Does It Touch Oakland?</em></td>
</tr>
<tr>
<td>1994</td>
<td>The League of Women Voters and others form Waterfront Coalition</td>
</tr>
<tr>
<td>1995</td>
<td>City and Port facilitate a planning charrette to formulate a vision for the waterfront.</td>
</tr>
<tr>
<td>1996 to 1997</td>
<td>City and Port jointly fund study of the Oakland Estuary from Adeline Street to 66th Avenue and the shoreline to the freeway</td>
</tr>
<tr>
<td>1999</td>
<td>Oakland General Plan updated under the oversight of General Plan Congress</td>
</tr>
<tr>
<td>March 2001</td>
<td>The Oakland Estuary Study culminates in development of Estuary Policy Plan</td>
</tr>
<tr>
<td>1999</td>
<td>Estuary Policy Plan adopted as part of City of Oakland’s General Plan</td>
</tr>
<tr>
<td>April 2001</td>
<td>Port of Oakland announces Request for Developer Qualifications (RFQ) for a developer to achieve the Estuary Policy Plan (EPP) vision.</td>
</tr>
<tr>
<td>May 2001</td>
<td>The Port of Oakland receives two responses to their RFQ</td>
</tr>
<tr>
<td>Sept 2001</td>
<td>Port of Oakland selects Oakland Harbor Partners (OHP) as master developer</td>
</tr>
<tr>
<td><strong>September 2001 - April 2002</strong></td>
<td><strong>Developer fails to develop specific plan with community as required in the RFQ Schedule of Performance. Other scheduled performance milestones are subsequently not met.</strong></td>
</tr>
<tr>
<td>2003</td>
<td>Port of Oakland appraises land valued at $34 million with $16 million of remediation costs based on development mixed residential use concept with 1700 units</td>
</tr>
<tr>
<td>2003</td>
<td>Port Commission approves an option for the sale of property to OHP for $18 million</td>
</tr>
<tr>
<td>2003</td>
<td>Oakland voters approve Measure DD including $18 million to develop public open space and etc.</td>
</tr>
</tbody>
</table>
The overarching EPP goals are summarized as follows:

- Increase the awareness of the waterfront throughout the city and region, and maximize the benefit of Oakland’s waterfront for the people of the city.
- Promote the diversity of the waterfront by providing opportunities for new parks, recreation, and open space; cultural, educational and entertainment experiences; and new or revitalized retail, commercial and residential development.
- Enhance and promote the city’s waterfront for the economic benefit of the community, with emphasis on Oakland’s position as a leading West Coast maritime terminal and a primary Bay Area passenger and cargo airport.
- Connect the waterfront to the rest of the city, with emphasis on linking the adjacent neighborhoods and downtown directly to the waterfront, reducing physical barriers and the perception of isolation from the water’s edge, and improving public access to and along the waterfront.
- Preserve and enhance the existing natural areas along the waterfront.  

The City incorporated the Estuary Policy Plan into Oakland’s General Plan in June 1999. The Port of Oakland, which owns the majority of the land within the waterfront area, then developed and issued a Request for Developer Qualifications (RFQ) to solicit developers for 60 acres of waterfront. The Port released the RFQ in March 2001, stating the following specific development objectives for the property and proportion of the waterfront:

1. Working with the City of Oakland, the community, and the development team, create a vision for the Oak-to-Ninth District through a Specific Plan that incorporates the objectives of the Estuary Policy Plan, with the goal of generating economic benefits and creating new waterfront amenities for the citizens of Oakland.

2. Create a financing strategy for the redevelopment of the Port-owned parcels that incorporates a broad mix of uses, is financially feasible, and generates jobs for the community and revenue for both the Port and the City.

3. Develop a financing strategy to create a significant amount of quality public open space and public access to the waterfront.

4. Create a financing structure for the basic infrastructure needed to support development, including sewer lines, storm drainage, utility lines, roadways, etc.

5. Create a planning process that provides for substantive participation by neighbors, interested community groups and other stakeholders.

Throughout the RFQ, there are multiple explicit statements that the proposal by the developer must develop a specific plan that incorporates the recommendations from the Estuary Policy Plan. The RFQ quotes the following section from the Estuary Policy Plan:

“The Oak-to-Ninth District is large and diverse, with several unique, complicated issues that dominate its real development potential. It should be planned in sufficient detail to identify all potential issues and to understand the options available to address these issues in a timely manner. A Specific Plan should be prepared prior to development. Planning should be based on a strategy which analyzes the area comprehensively and which accounts for the constraints imposed by subsoil environmental conditions. Transformation of the district will require that several outstanding issues be resolved simultaneously. Development feasibility should be analyzed, phasing of improvements should be identified, and a funding strategy to finance and implement recommended open space should be addressed. These require that a realistic development program and site plan be developed.”

After release of the RFQ, the Port held one informational meeting, targeted towards potentially interested developers, to discuss the requirements for the proposal process. Statements of Developer Qualifications were due on May 28, 2001 – less than three months after the announcement. Only two developers submitted an RFQ. In September of 2001, the Board of Port Commissioners selected the development team of Oakland Harbor Partners, LLC, joint venture between Signature Properties and Reynolds & Brown, to enter into an Option Agreement. This process occurred in accordance with the

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Schedule of Performance established by the initial Request for Developer Qualifications (See Figure PPA.8: RFQ Schedule of Performance).

In 2003, the Port of Oakland appraised the property at $34 million less clean up costs (~$16 million) based on a developer proposed concept plan that now called for a mixed-use residential neighborhood with 1700 units. The Port of Oakland subsequently granted OHP the option to buy the property for $18 million in 2003.

In late 2003, OHP put forward the current development plan requesting environmental review for a mixed use neighborhood with 3100 dwelling units and the following design, planning, and zoning approvals:

- Revisions to the Oakland General Plan Estuary Policy Plan (see discussion below)
- The adoption of a new zoning district, the "Planned Waterfront Zoning District-4" which sets forth allowable uses and development standards for the proposed project;
- The rezoning of the site from M-40 to PWD-4 and Open Space-Region Serving Park (OS-RSP);
- Approval of a Preliminary Development Plan for the entire 64.2 acre site;
- Revisions of the Central District Urban Renewal Plan and the Central City East Redevelopment Plan to change the land use designation to Planned Waterfront Development-4 and Parks.
- Approval of the proposed Oak to Ninth Mixed Use Development Design Guidelines;
- Approval of a vesting tentative subdivision map which subdivides the site into 13 developable parcels (~34 acres) and parks and open space (~30 acres);
- A conditional use permit for the activities proposed in the OS-RSP zone;
- A 20-year Development Agreement.

E. Planning Process Analysis of Oak to Ninth Avenue Development

There exists no standard method or template for an analysis of a development planning process. This planning process analysis is largely qualitative and examines the following five questions:

1. Did the Development Process conform to the requirements in the Port of Oakland’s request for qualifications (RFQ)?
2. Is the Development Project Consistent with the Oakland General Plan?
3. What consequences result from not requiring the Developer to produce a specific plan?
4. What was the quality of Public Participation in the Oak to Ninth Avenue Development Process?
5. What was the role of interest groups in influencing this project outside the public process?

Question 1: Did the Development Process conform to the requirements in the Port of Oakland’s request for qualifications (RFQ)?

Through the request for qualifications (RFQ) process, the Port of Oakland signaled its intent to develop the Oak to Ninth Avenue Property in conformity with the Oakland’s Estuary Policy Plan. Specifically, the RFQ required the developer to submit “an economically viable development strategy for the areas consistent with the EPP.” The EPP envisioned diverse open space, marine, commercial, and recreational uses. In part because the land was subject to requirements of the California Tidelands Trust, the EPP did
not envision private residential uses. Based on their response to the RFQ, the Port awarded Oakland Harbor Partners (OHP) an exclusive negotiating agreement with an option to buy the property.

The RFQ process award to OHP included a detailed schedule of performance. (See Figure PPA.8: RFQ Schedule of Performance). The schedule required OHP to initiate a specific planning process involving community and stakeholder meetings in October 2001 and submit a draft specific plan along with a refined development plan in April 2002. Based on available records, OHP did not initiate or develop specific plan with community as required in the RFQ Schedule of Performance and later scheduled performance milestones were subsequently not met.

After gaining "property rights," Signature appears to have convinced City of Oakland and Port of Oakland officials to forgo the EPP vision for an alternative mixed use waterfront development with 1700 private dwelling units along and several of the originally intended EPP uses at a reduced scale. Justifying this concept, in 2002, OHP submitted an economic feasibility analysis to Port officials based on a plan for 1500 condominiums, 200 below market rate housing units, and 142 live-work condominiums in the preserved 1920’s portion of the Ninth Avenue Terminal. The feasibility analysis was released to the public in March 2006 but not made available to the general public at the time of this apparent decision.

In 2003, the Port of Oakland appraised the property at $34 million less clean up costs (~$16 million) based on expected entitlements for 1700 units. Later that year, the Port of Oakland then granted OHP the option to buy the property for $18 million. Though increasing the residential density would significantly increase the project’s expected revenues; the Port of Oakland did not re-appraise the property’s value nor re-adjust the land sales prices.

After successfully negotiating an option agreement, OHP proposed a development that again increased the residential density of the proposed development from 1700 units to 3100 units. Increasing the residential density required utilization of land proposed for open space under the EPP and demolition of a majority of the Ninth Avenue Terminal.

In 2004, attorneys for the Port of Oakland collaborated with OHP to draft legislation to enable the Port to exchange parts of the Oak to Ninth Avenue Property under Tidelands Trust designation. Senate Bill 1622 authorized the State Lands Commission to relinquish the Public Trust status of some project parcels if there was a suitable land exchange. This legislation was necessary to permit private residential uses on the property. SB 1622 passed in August 2004 though the sponsorship of Oakland State Senator Donald Perata.

Overall, a review of the development process milestones and Port of Oakland’s RFQ, master development agreement, and land sale process identify the following issues:

- **Oakland Harbor Partners (OHP) did not initiate or develop a specific plan with community input as required in the RFQ Schedule of Performance;**
- **OHP did not meet subsequent scheduled performance milestones;**
- **OHP development plans diverged from the Estuary Policy Plan vision without public review;**
- **The Port of Oakland did not re-appraise the property or alter the land sales price despite plan revisions expected to increase property values;**
- **Economic feasibility studies that may have justified the OHP revision of the project objectives were not subject to public review or scrutiny.**
Question 2: Is the Oak to Ninth Development Project Consistent with the Oakland General Plan?

As discussed above, the purpose of having a general plan is to essentially have a blueprint for the city’s vision of future growth. By clearly articulating goals, objectives, priorities and values, the general plan provides a measuring stick to which more specifically detailed plans may be analyzed.

According to Oakland Municipal Code, “except as otherwise provided by Section 17.01.040, no activities or facilities shall be established, substituted, expanded, constructed, altered, moved, painted, maintained, or otherwise changed, and no lot lines shall be created or changed, except in conformity with the Oakland General Plan. To the extent that there is an express conflict between the Oakland General Plan and the Zoning Regulations, this requirement shall supersede the requirement for conformity with the Zoning Regulations stipulated in Section 17.07.060 (formerly Section 17.02.060). (Ord. 12054 § 2 (part), 1998)”47 (See Figure PPA.5: Project consistency with general plan and zoning to review the decision making matrix and flow chart for decision making related to general plan and zoning compliance.)

Oak to Ninth Avenue Health Impact Assessment
Chapter 2. Planning Process Analysis

Planned Process vs. Actual Process
Case Study of Oak to Ninth

Development of General Plan

Publication of LWV Report on Waterfront

Creation of Waterfront Coalition

Outcome of EPP= Better coordination between Port & City of Oakland

Development of Estuary Policy Plan (EPP)

EPP adopted into General Plan

Specific Plan developed from General Plan

Port of Oakland announces Request for Developer Qualific.

2 Developers Respond

Oakland Harbor Partners selected

OHP enters Option Agreement for Potential Purchase and Ground Lease with Port of Oak.

OHP announces not economically feasible to build just ???? units, therefore must increase housing to 3100 units

OHP develops project proposal

Project Proposal goes through EIR process

Planning Commission recommends approval

City Council approves plan

Public Comment

Specific Plan considered by Bd. of Port Commissioner

Specific Plan considered by City Council

Public Comment

Public Comment

Public Comment

Regular Update of General Plan

2 Developers Respond
The General Plan’s Estuary Policy Plan clearly affirms a vision for the waterfront that prioritized open space, recreational opportunities, and waterfront commercial uses that celebrated the City’s waterfront history. As proposed, the development proposal is inconsistent with the General Plan Estuary Policy Plan. For the project to be approved, Oakland Harbor Partners must therefore request modification of these pre-existing plans to regain the required consistency. Based on a review of revisions to the General Plan recommended by the Planning Commission on March 15th, 2006, the Oak to Ninth project requires the following key amendments to the General Plan to achieve consistency with the General Plan:

1. Revising the site’s priority use from ‘public use” to “mixed-use.”
2. Including residential uses in the mix of uses planned for the Oak to Ninth Avenue Project Area
3. Include non-recreational commercial uses in the mix of uses planned for the Oak to Ninth Avenue Project Area
4. Reduce the portion of the Ninth Avenue Terminal expected to be improved for adaptive reuse to the bulkhead portion of the building
5. Authorizing the demolition of the remainder of the Ninth Avenue Terminal;
6. Reducing the expansion of Estuary Park so that it is no longer required to extend to the Embarcadero;
7. Deleting plans for a pedestrian bridge at the bay ward end of the basin;
8. Deleting provisions for the mooring the ARTSHIP, the proposed headquarters of community outreach and art program;

The above changes represent a significant departure from the policy goals articulated in Oakland’s General Plan. While these changes may represent an appropriate response to changes in the needs of Oakland residents since the approval of the EPP in 1999, the City undertook neither technical analysis subject to public review nor a transparent public process to deliberate on these changes. About one-third of individuals providing written or public comment at public hearings explicitly raise the issue of the project’s inconsistency with the EPP.

Revisions to a General Plan should generally follow a process similar to the one that led to its development. Overall, in the case of the Oak to Ninth Avenue development, the public and stakeholders are responding and reacting to a proposal in substantial conflict with established General Plan public policy goals without first having the opportunity to re-evaluate those policy goals.

Question 3: What consequences result from not requiring the Developer to produce a specific plan?

As discussed above, after the selection process, the Port gave the selected developer, Oakland Harbor Partners, roughly nine months to develop a Specific Plan, including public meetings for this specific planning process. However, as illustrated in the above timeline and the RFQ schedule of performance, a Specific Plan was neither initiated nor developed, and no community meetings were held during the required time period.

Oak to Ninth Development
Chapter 2. Planning Process Analysis

According to the Developer’s and City of Oakland’s websites, the first community meetings related to the Oak to Ninth process took place in May and June 2004, after the Oakland Harbor Partners submitted a detailed project development proposal and requested entitlements and general plan amendments from to the City of Oakland. There is no evidence of engagement by the community in any planning that occurred prior to OHP submitting a development proposal. Fundamentally this indicates a departure from the requirement for a specific plan, specified both in the Oakland General Plan and re-iterated in the Port’s RFQ schedule of performance.

Specific Plans are governed by Sections 65450 through 65457 of the State Government Code. The State Guidelines state that "(a) specific plan is a tool for the systematic implementation of the general plan. It effectively establishes a link between implementing policies of the general plan and the individual development proposals in a defined area. A specific plan may be as general as setting forth broad policy concepts, or as detailed as providing direction to every facet of development from the type, location and intensity of uses to the design and capacity of infrastructure; from the resources used to finance public improvements to the design guidelines of a subdivision."

According to OHP, the departure from the Estuary Policy Plan (EPP) is legally allowable because they have "submitted a plan to the City of Oakland with far more detail than would be required by a Specific Plan." Furthermore, OHP asserts that "a Specific Plan process only requires one publicly noticed meeting, while OHP has exceed expectations for engaging the public in the proposal process."

The City also responds directly to the failure to develop a specific plan in the Final Environmental Impact Report.

“The policy itself only calls for more specific planning, not necessarily a specific plan, and the proposed project would achieve each of the articulated reasons for the further detailed planning determined to be necessary for the site. The language that a specific plan "should be" prepared is directory not mandatory. Given that the detailed project proposal and comprehensive analysis in the DEIR meet the intent of the policy, proceeding without a specific plan does not violate the general plan. Moreover, the City could decide to amend this policy to clarify its intent prior to approval of the project in which case the potential for any conflict will be avoided."

Substantive Equivalency A specific plan serves both substantive and procedural objectives. Several findings stand in contrast to the substantive equivalency of the Oak to Ninth Development plans and a specific plan.

- **First**, as discussed above, the development proposal diverges substantively from established and articulated public policy goals. In contrast, the aims of a specific plan are to further implement a general plan’s policy goals.

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Second, the proposal does not appear to reflect a consensus of public interests for this site, something a specific plan should engender. Instead, the proposal appears to have generated substantial public controversy by diverging from established City policy. For example, OHP contends that their project would save the public the expense of open space development. On the other side, interest organizations argue that the project shortchanges waterfront history, reduces open space, and creates barriers to waterfront and open space access.

Third, OHP and City of Oakland staff asserts that the Oak to Ninth Development plan contains a similar degree of detail to a specific plan. Several findings subsequently discussed in this health impact assessment suggest that the development proposal has not addressed the breadth of issues appropriate for the plan for a new neighborhood. For example, the development proposal does not include planning for safe upland circulation for bicycles and pedestrians to regional transit, to Lake Merritt trails, and to upland neighborhoods. The lack of planning for non-motorized waterfront access stands in contrast to goals and objectives of the EPP as well as to the Regional Bay Trail Plan.

Fourth, despite revising the area’s priority use from public use to mixed use, the planning did not include planning for schools. The 3100 units proposed will be residences to families with children. According to school board members and one City Councilmember, the schools in adjacent neighborhoods are already experiencing crowding.

Procedural Equivalency Regarding procedural equivalency between the development proposal and a specific planning process, OHP claims that they have, with the City of Oakland and the Port of Oakland, hosted at least 12 public hearings regarding the project and conducted outreach to over 4,000 people and over 100 business, civic and community groups. This position has been frequently repeated by City officials as well as appointed and elected officials.

While OHP asserts that this outreach is unprecedented in the history of Oakland, the position carries some significant assumptions.

The Oak to Ninth Avenue project is the largest development in Oakland since World War II, and will be built on a rare waterfront property in Oakland, and will have anticipated earning of over $2 billion. The degree of outreach should be proportional to the significance of the project.

More importantly, the developers and city staff equate “being informed” with “being involved.” It is unclear from documents exactly what the “outreach to over 4000 people” entailed. Who conducted the outreach? Were 4000 people actually contacted, or was this number obtained through inclusion of represented individuals — for example, was contacting religious leaders assumed to then represent outreach to the entire congregation? Was the venue and language appropriate for all stakeholders? Were participants informed enough about the issues and alternatives to provide meaningful and relevant input? Were participants aware of the purpose of their involvement and their ability to influence the development?

According to Public Affairs Management of City of Oakland, a primary goal of the public outreach process is to inform the public about these trade-offs and potentially difficult choices.

Oak to Ninth Development
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for the City’s decision-makers.\textsuperscript{53} This publicly stated purpose does not suggest that the City of Oakland aimed to solicit ideas, recommendations, or alternatives for the Oak to Ninth development project.

According to publicly available information, the public hearings referenced by the developer were in fact ongoing regular meetings of the Planning Commission, the Landmarks and Preservation Board and the Parks and Recreation Board, which typically offer only limited amounts of public input (each person is usually limited to 1-2 minutes, depending upon the number of participants). According to available documentation of past meetings, (See Figure PPA.6: Summary of Public Participation Opportunities) it appears there were really only about 6 opportunities for public engagement at an event dedicated specifically to Oak to Ninth, only three of which were held explicitly for community input (one in the scoping phase and two in the screening phase).

According to comments made by the Planning Commission, the project’s departure from the General Plan appears to be acceptable to the Commission given the urgent needs for economic development and urban revitalization in the area.

“Oakland Harbor Partners is proposing a Plan that expands the allowable land uses, such as residential, and extends the vitality of Oakland’s neighborhoods and downtown along the waterfront. Their Plan includes open space, trails, public gathering places and commercial uses, as described in the EPP, along with more extensive residential development than is currently allowed due to State Lands Commission restrictions. It is the City’s challenge to work with all parties in further refining the Plan so that it meets the objectives of the EPP while still being economically viable, and balances the needs for environmental clean up, provides recreational facilities adjacent to the Estuary, and addresses the strong housing demand in the Bay Area.” \textsuperscript{54}

The Oak to Ninth project may well advance some social and economic objectives; however, the development project also diverges from legislatively approved policy goals without a public process. Furthermore, the development project as proposed did not address the spectrum of planning issues raised for this site including those associate with circulation, open space access, and public education.

\textit{By issuing a development proposal in advance of comprehensive planning and then later suggesting that the development proposal is substantively and procedurally equivalent to a specific plan, both City of Oakland Planning Department Staff and its Planning Commission may be effectively de-legitimizing both the City’s General Plan and well-established urban planning principles.}

\textbf{Question 4. What was the quality of Public Participation in the Oak to Ninth Avenue Development Process?}

\textbf{Typology of Public Participation Opportunities} Figure PPA.6 provides an overview of the community opportunities for engagement related to the Oak to Ninth proposal. In the table below, we categorize


these participation opportunities with the typology of the Ladder of Participation. In the Oak to Ninth Project, the highest level of public involvement occurred via consultation; however, there is no evidence that these consultation opportunities meaningfully have influence on the development project.

<table>
<thead>
<tr>
<th>Types of Participation</th>
<th>Related Oak to Ninth Examples</th>
</tr>
</thead>
</table>
| **Manipulation**       | 1. Developers make public claims that the project creates new parks for the City, borrowing from EPP goals but sidestepping the reduction in park acreage and the EPP inconsistencies.  
                           2. Developers make public claims that the project advances Smart Growth objectives, ignoring a number of Smart Growth criteria not met by the development project. |
| **Therapy**            | - |
| **Informing**          | 1. The project undergoes Environmental Review under CEQA  
                           2. OHP and City officials conduct outreach to over 4000 people and over 100 business, civic and community groups via small group dialogue and ‘open house’ events to inform the public and stakeholders about the project.  
                           3. Staff reports and developer presentations inform the public and decision-makers about the project |
| **Consultation**       | 1. OHP and City officials conduct outreach to over 4000 people and over 100 business, civic and community groups via small group dialogue and ‘open house’ events, provide opportunities for comment, and synthesize the comments into a written report  
                           2. The City of Oakland responds to oral and written comment on the draft EIR.  
                           3. Public comment occurs at formal public hearings |
| **Placation**          | - |
| **Partnership**        | - |
| **Delegated Power**    | - |
| **Citizen Control**    | - |

**Influence of public participation on design** Our analysis of public comment made to the Planning Commission, the Landmarks and Preservation Board, and the Parks and Recreation Board reveals that there are a relatively small number of people who provide public input via multiple venues. For example, there were 95 individual independent speakers or public comments on the DEIR. (See Figure PPA.7: Public Comment on the Environmental Impact Report) One-third of those individuals brought up the Estuary Policy Plan in their public or written comment. Some of the other common statements allege insufficient consideration of the impact upon traffic congestion and access to public transportation, the need for affordable housing for lower-income individuals and families, preservation of open space and the 9th avenue terminal, and lack of opportunities for public engagement.

The repetition of statements and positions in public comments suggests that the community input did not have significant influence on the design and development decisions within this planning process.
Barriers to participation

The chart below listing factors affecting individuals’ ability and interests to participate in a public decision-making process. The responsiveness to some of these factors can be inferred from the data in Figure PPA.6. (See Figure PPA.6: Summary of Public Participation Opportunities) For example, start times varied slightly but publicity information does not provide information on whether translation or childcare was provided. Speaking times varied. The meeting summaries published by the facilitator provided fairly complete narratives of comments, but did not indicate whether or how the comments would translate into design or other project changes.

Common indicators of insufficient or failed public participation include public complaints, about the lack of opportunity to comment, inadequate notice of events, inconvenient meeting times/locations, unavailable materials, and lack of responsiveness from agency; poor attendance at public meetings and low response requests for comment; limited participation of a segment of community or segment of a community. We did not find any data to analyze on these participation indicators collected by the City of Oakland.

<table>
<thead>
<tr>
<th>Factors Affecting Individuals’ Ability and Interest in Public Meetings Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Effectiveness of outreach and announcements including issues related to media, language, explanation of purpose</td>
</tr>
<tr>
<td>▪ Accessibility of the meeting including issues related to time and location, availability of transportation, disability access, and childcare</td>
</tr>
<tr>
<td>▪ Languages spoken</td>
</tr>
<tr>
<td>▪ Translations of expert content to lay audiences</td>
</tr>
<tr>
<td>▪ Understanding of the planning process</td>
</tr>
<tr>
<td>▪ Awareness of ability and capacity to affect change</td>
</tr>
<tr>
<td>▪ Past experiences with public participation including the experience of voice or disenfranchisement</td>
</tr>
<tr>
<td>▪ Trust in the power-holders</td>
</tr>
<tr>
<td>▪ Relationship between issue at hand and more immediate issues</td>
</tr>
<tr>
<td>▪ Fear of retaliation</td>
</tr>
</tbody>
</table>

Question 5: What was the role of interest groups in influencing this project outside the public process?

Several non-profit interest organizations working independently and in broad coalitions engaged in development process for Oak to Ninth Avenue. Below, we summarize the positions of these organizations and coalitions based on public positions and written documents.

- **Waterfront Action** is an Oakland non-profit whose mission is to promote public access to the Oakland-Alameda Estuary and Lake Merritt through using public awareness, education, and direct action. Waterfront Action seeks improvements in the project to improve public access to the waterfront, provide sweeping views of the natural spaces, preserve a greater share of the 9th avenue terminal and advance the phasing of the public open space elements of the project. Waterfront Action also advocates for supporting the Estuary Policy Plan or returning to a transparent public process for its revision.

- **The Oak to Ninth Community Benefits Coalition** includes a number of resident membership organizations and has been negotiating a Community Benefits Agreement (CBA) with the
developer of the 60 acre site on the Oakland Waterfront known as Oak to Ninth. Community Benefits Agreements are legally binding agreements between a developer and community groups in which the developer agrees to provide certain benefits and mitigations determined by the community representatives. The coalition made demands for affordable housing, the inclusion of opportunities for local businesses, and local hiring job standards. If a CBA is successfully negotiated, the Oak to Ninth Coalition is prepared to support (or at least to not oppose) the developer's requests for entitlements and subsidies from public bodies overseeing the development process.

- **The Alameda County League of Women Voters (LWV)**, authors of the *Waterfront: It touches the World. How does it touch Oakland*, support development if done in accordance with the Estuary Policy Plan and if parks and bay trail elements are developed in early phases. The LWV also advocate for adequate pedestrian and vehicle access, vistas of the waterfront, historic preservation, affordable housing, a neighborhood school, and mitigation of air quality, pedestrian safety, and noise concerns.

- **The East Bay Bicycle Coalition** is focused on public access to the Oakland Estuary and Bay Trail. EBBC has raised three areas of concern: access and safety to the Oakland Estuary from the upland side of the rail and freeway; access and safety along Embarcadero, an on-street portion of the Bay Trail; and the need to complete the Bay Trail shoreline path through the project area.

- **The Oakland Heritage Alliance** opposed AB 1622. OHA advocates for preservation and reuse of historic structures unless there exists a compelling reason for their demolition. OHA believe the Ninth Avenue Terminal would be eligible for the National Registry of Historic Places and that a transparent and complete alternatives analysis of creative reuse of the historic has not yet occurred. OHA also advocates for a public discussion of changes to the Estuary Policy Plan, either through a specific plan or an equivalent public process to identify public priorities for the area.

- **The Measure DD Community Coalition** is a body of 150 concerned citizens, organizations, and dedicated staff sanctioned by the City Council to monitor parks, open space, and waterways developments authorized under the Measure DD bond referendum. The DD Coalition is interested in the project’s potential impact on open space, Estuary access, visibility, and questions of level of development appropriate to the largest undeveloped waterfront area remaining in the city. The Measure DD Coalition strongly urges close adherence to primary EPP objectives by any development plan being considered for adoption, including assuring maximum physical and visual access for the public to the Estuary and the surrounding parks from the Embarcadero and from interior streets.

There exists no straightforward way to judge the influence of these diverse advocacy positions held by the above stakeholders and coalitions of stakeholders. All of these stakeholders participated in City sponsored outreach, all provided written or verbal comment and all appeared to have lobbied power-holders. Some stakeholders attempted to negotiate with OHP directly and anecdotal reports suggest that some may have achieved their demands, in part, through private negotiation. Other groups either
supporting or silent on the project also may have successfully achieved their interests through private negotiations with OHP.

On one hand, in the public record, the OHP proposal did not change substantially between the time it was first proposed to the City and when the planning commission gave its approval on March 15th, 2006. This suggests that stakeholders have collectively had a lack of substantive influence. On the other hand, questions raised by City Council members to the Planning Director at the Council Workshop of March 28th, 2005 echoed many of the frequently mentioned positions of the organizations with the largest constituencies, most notably, the issues of park adequacy and access and of affordable housing and its finance. The significant questioning of the project and request for evaluation of design and planning changes by City Council members two weeks after a near unanimous and unquestioning approval by the Oakland Planning is notable. However, the results of this questioning on the project are yet to be verified.

As discussed above, concerns about violations of the Estuary Policy Plan were frequent in public testimony, but resulted in little rhetoric or questioning of the legitimacy of the planning process on the part of power-holders. Perhaps, an explanation lies in the implications of questioning the planning process. If the process of diverging from the EPP was fundamentally wrong or flawed, then the results, the current development proposal may also be flawed, requiring a return to a community planning process to revise the EPP, as suggested by some stakeholders. This may have been seen as an unacceptable result by some power-holders.

A final observation relates to the relationship between the development proposal, the Oak to Ninth Community Benefits Coalition, and interests advocating faithfulness to the EPP. The OHP proposed replacing the EPP’s open space priority with a vision of a new residential neighborhood bordered by a public waterfront. While they were open to negotiate, the open space, waterfront, environmental, and historic preservation interests generally lined up behind the goals of the original plan. However, the Oak to Ninth Community Benefits Coalition’s goal of a Community Benefits Agreement is contingent on the substantive achievement of the developer’s residential vision. This conflict between the Community Benefits Agreement and the Estuary Policy Plan appears to have prevented a strategic alliance among the Community Benefits Coalition and Estuary Policy Plan advocates. An alliance and consensus of interests among affordable housing, labor, social justice, environmental, open space, and historic preservation may have had a more potent and earlier influence on the development process.

**F. Recommendations for Oak to Ninth Planning**

Meaningful public involvement and successful consensus building requires developers, city staff, and all stakeholders to sit at the same table. It requires making information publicly available and creating the opportunities for all affected people to understand what is at stake and to speak to their needs and concerns. Most importantly, successful planning must include the promise that the public’s contribution will influence the decision.
A number of new deliberative approaches to environmental decision-making demonstrate effective ways to involve non-experts in policy analysis.\textsuperscript{55, 56, 57} For example, in the Danish Board of Technology's Consensus Conference, a lay panel deliberates on a public issue and provides a consensus report of their findings to the legislature.\textsuperscript{58} Experts contribute testimony and analysis but only in response to questions posed by the lay panel. Success at the difficult task of gaining consensus among traditional opponents has been illustrated in many areas, including habitat conservation planning, where landowners, environmentalists, and regulators are brought together to develop compromise solutions regarding endangered species protections.\textsuperscript{59}

While acknowledging the time and expense involved with a successful public process, we believe the costs of poor decisions, whether measured in public dissatisfaction, loss of trust in public agencies, or human and environmental costs outweighs these short term expenses. As discussed above, successful public involvement has many direct and indirect social benefits. The following are three recommendations for the Oak to Ninth Development as it stands in May 2006:

1. The City of Oakland should specifically document whether and how the project has been responsive to public concerns and to constructive design change recommendations raised in the numerous public meetings and hearings.

2. Regardless of the history of the process, the City of Oakland should convene an independently facilitated multi-stakeholder consensus process to address unresolved controversies associated with the Oak to Ninth Development and to address and resolve inconsistencies between the project and established General Plan goals and policy.

3. The findings from both the documentation of public concerns and the multi-stakeholder consensus process should be made publicly available, at a minimum via the City of Oakland website.

**Figure PPA.1: Pathways to Empowerment**

Pathways to Empowerment - World Health Organization/ Wallerstein, 2006

**Processes (strategies):**
- **Personal skills:** planning/ actions, access to information
- **Supportive environments:** supportive groups, dialogical approach, based on indigenous knowledge
- **Community action/participation:** meaningful decision-making, use of lay leaders, leadership/ advocacy, organization capacity
- **Healthy public policy:** collective actions, effective organization structures, transfer power, promote transparency
- **Reorienting health care:** involve constituents

**Outcomes:**
- **Intrapersonal change:**
  - political efficacy
  - collective efficacy
  - belief in group action
  - motivation to act
  - perceived control
- **Critical consciousness of society:**
  - community identity
  - bonding social capital
  - trust
  - reciprocity
- **Sense of community:**
  - community identity
  - bonding social capital
  - trust
  - reciprocity
- **Well-functioning services:**
  - publicly accountable
  - equitably distributed
  - efficient
  - integrated
  - culturally appropriate
  - maintained overtime
- **Organizational effectiveness and capacity:**
  - sustainability
  - constituency building
  - produce outcomes
  - effective leadership
  - empowering to members
  - bridging social capital
- **Effective inter-organizational networks/partnerships:**
- **Transformed socio-economic, environmental conditions and policies:**
  - increased civil liberties
  - Anti-discrim. policies
- **Healthy public policy:**
  - increased micro-enterprises
  - increased material assets
  - enabling economic policies
- **Good governance:**
  - decreased corruption
  - increased transparency
  - accountability
- **Human rights:**
  - Increased civil liberties
  - Anti-discrim. policies
- **Community/Political:**
  - promote transparency
- **Emotion and behavior:**
  - increased micro-enterprises
  - increased material assets
  - enabling economic policies
  - increased micro-enterprises
  - increased material assets
  - enabling economic policies
  - increased micro-enterprises
  - increased material assets
  - enabling economic policies

**Psychological:**
- **Empowerment:**
  - cultural appropriate
  - maintained overtime
  - culturally appropriate
  - maintained overtime
  - culturally appropriate
  - maintained overtime
**FIGURE PPA.2: CEQA PROCESS FLOW CHART**

**CEQA Process Flow Chart**

1. **Project**
   - Public Agency determines whether the activity is a "project"?
     - Not a project
       - Project is ministerial
         - No possible significant effect
         - Statutory exemption
         - Categorical exemption
     - Public Agency determines if the project is exempt
       - Not Exempt
         - Public agency evaluates project to determine if there is a possibility that the project may have a significant effect on environment
           - Possible significant effect
             - Determination of lead agency where more than one public agency is involved
               - Notice of Exemption may be filed
               - No further action required under CEQA

2. **RESPONSIBLE AGENCY**
   - Respond to informal consultation
     - Consultation
     - Consultation

3. **LEAD AGENCY**
   - Lead agency prepares initial study
     - Lead agency decision to prepare EIR or Negative Declaration
     - Lead agency sends Notice of Preparation to responsible agency
     - Lead agency prepares draft EIR
     - Lead agency files Notice of Completion and gives public notice of availability of draft EIR
     - Lead agency prepares final EIR including responses to comments on draft EIR
     - Consideration and approval of final EIR by decision-making body
     - Findings on feasibility of reducing or avoiding significant environmental effects
       - Decision on project
       - File Notice of Determination with Office of Planning & Research
         - State Agencies
         - Local Agencies
       - File Notice of Determination with Office of Planning Research
         - State Agencies
         - Local Agencies
       - File Notice of Determination with County Clerk
         - State Agencies
         - Local Agencies
       - File Notice of Determination with County Clerk
     - Consideration and approval of Negative Declaration by decision-making body
     - Negative Declaration
       - Public Review Period
       - Lead Agency gives public notice of availability of Negative Declaration

4. **Decision on permit**
   - File Notice of Determination with Office of Planning & Research
     - State Agencies
     - Local Agencies
   - File Notice of Determination with Office of Planning Research
     - State Agencies
     - Local Agencies
   - File Notice of Determination with County Clerk
     - State Agencies
     - Local Agencies
   - File Notice of Determination with County Clerk
Suggested Local General Plan Process in California

1. **Work Program**
   - Early policy guidance, scope of work, adoption deadlines

2. **Formulate Goals**
   - Visioning, articulate principles, identify issues and assumptions

3. **Collect & Analyze Data**
   - Examine current conditions and trends

4. **Refine Goals**
   - Refine goals and formulate objectives

5. **Alternatives Analysis**
   - Develop and evaluate alternative plans

6. **Plan Adoption**
   - Select and adopt preferred plan

7. **Implementation**
   - Plan implementation, monitoring, and maintenance

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**PUBLIC PARTICIPATION AND INTERGOVERNMENTAL REVIEW**

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**CALIFORNIA ENVIRONMENTAL QUALITY ACT**
### Figure PPA.5: Achieving Consistency between General Plan and Zoning Regulations

(From Guidelines for Determining Project Conformity with the General Plan and Zoning Regulations)

#### Project Consistency with General Plan and Zoning/Subdivision Regulations

(Zoning/Subdivision Regulations prevail unless there is an express conflict)

<table>
<thead>
<tr>
<th>Zoning/Subdivision Regulations</th>
<th>Permitted</th>
<th>Conditionally Permitted</th>
<th>Not Permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearly Conforms</td>
<td>Permitted</td>
<td>Conditional Use Permit</td>
<td>Allowed with interim Conditional Use Permit or Rezoning to &quot;Best Fit&quot; Zone¹</td>
</tr>
<tr>
<td></td>
<td>Outright</td>
<td>(normal process)</td>
<td></td>
</tr>
<tr>
<td>General Plan is Silent or Not Clear on Conformity</td>
<td>Permitted</td>
<td>Conditional Use Permit</td>
<td>Not Allowed</td>
</tr>
<tr>
<td></td>
<td>Outright</td>
<td>(normal process)</td>
<td></td>
</tr>
<tr>
<td>Clearly Does Not Conform</td>
<td>Not Allowed</td>
<td>Options²: Modify project to conform to Zoning or Rezone to &quot;Best Fit&quot; Zone¹ or Variance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Options²: Modify project to conform to General Plan or Apply for General Plan Amendment and Rezoning to &quot;Best Fit&quot; Zone¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Allowed</td>
<td>Apply for General Plan Amendment or Request a General Plan conformity determination from the City Planning Director (an interim CUP is required)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Allowed</td>
<td>Apply for General Plan Amendment or Request a General Plan conformity determination from the City Planning Director (In all cases, a CUP is still required under Zoning)</td>
<td></td>
</tr>
</tbody>
</table>

¹ Where a rezoning occurs, the regulations of the new zone would apply, including any requirements for a Conditional Use Permit.

² Where none of the options are feasible, the project sponsor should be directed to the Business Retention and Attraction section for assistance in locating an appropriate alternate site.
## Figure PPA.6: Summary of Public Participation Opportunities

<table>
<thead>
<tr>
<th>Date of Event</th>
<th>Type of Event</th>
<th>Open to Public?</th>
<th>Title</th>
<th>Location</th>
<th>Day of Week</th>
<th>Start Time of Mtg</th>
<th>Amt of Time to Speak</th>
<th>Wheelchair Access</th>
<th>ASL svcs provi</th>
<th>Translation Provided</th>
<th>Childcare Provided</th>
<th>Access by Public Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>May-June 04</td>
<td>announcement</td>
<td>open to public</td>
<td>Notice of Preparation of Draft EIR</td>
<td>internet</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>not stated</td>
<td>not on web</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>6/9/2004</td>
<td>Comm Mtg</td>
<td>open to public</td>
<td>Comm Mtg/EIR Scoping Session</td>
<td>Jack London Aquatic Center, 115 Embarcadero West</td>
<td>Wed</td>
<td>6:30 PM</td>
<td>not stated</td>
<td>not stated</td>
<td>not stated</td>
<td>not stated</td>
<td>not stated</td>
<td>not stated</td>
</tr>
<tr>
<td>6/14/2004</td>
<td>Reg Mtg</td>
<td>open to public</td>
<td>LPAB Committee Reg Mtg</td>
<td>City Hall</td>
<td>Mon</td>
<td>?</td>
<td>3 min</td>
<td>yes</td>
<td>w/ 3 days advance</td>
<td>not stated</td>
<td>not stated</td>
<td>not stated</td>
</tr>
<tr>
<td>6/16/2004</td>
<td>Reg Mtg</td>
<td>open to public</td>
<td>Planning Commission Reg Mtg</td>
<td>City Hall</td>
<td>Wed</td>
<td>6:30 PM</td>
<td>2 min</td>
<td>yes</td>
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**Figure PPA.7: Public Comment on the Environmental Impact Report**

PCM = Planning Commission Meeting  
LPAB = Landmarks Preservation Board  
PRM = Parks and Recreation Meeting  
pub mtg = attended one of two community meetings  
other letters refer to the code identified in the FEIR

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## FIGURE PPA.8: RFQ SCHEDULE OF PERFORMANCE

**EXHIBIT B**

**SCHEDULE OF PERFORMANCE**

<table>
<thead>
<tr>
<th>Schedule of Performance</th>
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<tr>
<td>Response to RFQ Submitted by Developer</td>
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<tr>
<td>Developer Submits to Port Refined Description of Development Project Description and Scope of Specific Plan</td>
<td>7/7/01</td>
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<td>Board of Port Commissioners Selects Developer</td>
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<tr>
<td>Port and Developer Negotiate ENA Development Project Description and Scope of Work for Specific Plan</td>
<td>10/1/01</td>
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<td>Developer Submits Executed ENA to Port</td>
<td>10/7/01</td>
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<tr>
<td>Port Board Approves ENA and Port Executes ENA</td>
<td>10/15/01</td>
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<tr>
<td>Developer Starts Specific Plan Development Process including Public Meetings</td>
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<tr>
<td>(to be completed within 9 mos.)</td>
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<tr>
<td>Developer Submits Draft Specific Plan and Refined Development Concept to Port</td>
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<tr>
<td>Developer Submits to the Port Deliverables described in Attachment 1 to this Exhibit</td>
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<tr>
<td>Developer Pays Fees, Files Request for Environmental Review and Submits Applications for Specific Plan and Development Project Permits</td>
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<tr>
<td>Developer and Lead Agency Start Environmental Review Process</td>
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<td>Developer Submits to Port an Additional $250,000 Deposit, a Signed Letter of Intent to Execute Master Ground Lease and a Draft Master Ground Lease</td>
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<td>Board of Port Commissioners Approves Master Ground Lease</td>
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<td>Developer Files Applications for All Other Regulatory Permits</td>
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Oak to Ninth Avenue
Health Impact Assessment

Chapter 3
Parks and Natural Spaces
A. Summary

Access to parks and natural spaces confer numerous health benefits. Contact with nature and passive and active recreation are positively associated with physical activity, mental health and a sense of well being, social cohesion, and environmental quality. Specific health outcomes improved by access include depression, obesity, heart disease, cognitive function, and problem solving ability. Significant economic and social costs result from limited and unequal access to parks and natural spaces.

Analysis of the current distribution of city parks in Oakland reveals that large percentages of Oakland residents do not have access to open space resources which can help prevent many of the disease outcomes currently endemic in the city such as diabetes, hypertension, and obesity. Less than half of Oakland residents live within 10 minutes walking distance of a city park. The distribution of access to Regional Parks is also not uniform among Oakland neighborhoods. Most striking is the lack of access to large parks that would be suitable for recreation and getting the recommended amounts of physical activity. In particular, two-thirds of Oakland youth do not live in areas that provide access to adequate park resources. This is an environmental factor contributing to childhood obesity.

The parks and natural spaces that remain in the public domain in the proposed Oak to Ninth development will provide a significant health benefit to the future residents of the development; however, the project, in part due to its design, does not provide a significant new park resource for the City as a whole. Only with modifications to increase the accessibility of these parks to adjacent neighborhoods and other Oakland residents will they help reduce the current park shortage for the city as a whole. With such modifications these parks could result in a significant benefit to the health of Oakland residents.

Project Health Impacts

1. The Oak to Ninth Project will result in a new residential neighborhood rich in park resources; this will have positive health benefits for the residents of this new neighborhood.
2. The Oak to Ninth Project represents a net loss of 15 acres of open space relative to existing planning designations under the Oakland General Plan Estuary Policy Plan; this represent the loss of a significant health resource for Oakland as a whole.
3. Both unmitigated physical and social barriers between the proposed estuary and waterfront resources and upland neighborhoods will limit the potential health benefits of the project to Oakland residents. This represents a missed opportunity to improve the health of Oakland residents.
   - Elements of the Project, particularly the large residential buildings, create potential physical and social barriers to views and public access to public park resources along the Estuary and Waterfront.
   - Physical barriers, including the rail corridor and the I-880 freeway corridor create a significant obstacle to convenient public access from upland and park-poor neighborhoods.
   - The project did not include planning or design for and functional access between upland neighborhoods and proposed public park resources along the estuary and waterfront.
   - Existing preliminary work on estuary access (e.g., 5th Avenue Multi-modal transportation design work) was not reflected in the development proposals to the City.
   - Facility and operations planning for the proposed parks do not reflect input and needs of residents of upland neighborhoods.
The community benefits district proposed for the park risks functional privatization of park resources.

**Recommendations for Design & Mitigations**

1. Create safe, continuous, and functional routes connecting the waterfront to adjacent neighborhoods. At a minimum, an inviting route should exist along the estuary channel and along 5th Avenue.
2. Provide public transit services directly to the waterfront
3. Increase public parking adjacent to waterfront park resources.
4. Ensure the socio-economic integration of project housing
5. Explore design changes to improve visibility of the waterfront
6. Explore re-routing the Embarcadero between the residential uses and the public waterfront.
7. Include residents of upland neighborhoods in park planning
8. Create seats for citywide interests on all oversight bodies for project parks

**B. Health Effects of Parks and Natural Spaces**

Open Spaces (natural spaces) constitute lands set aside for the purpose of either preserving or creating a natural environment. Parks, which may or may not include natural spaces, are public places dedicated for outdoor recreational and leisure activities. Early proponents of urban parks, such as Fredrick Law Olmstead, promoted the inclusion and design of public open space as a critical component of making cities healthier. Much of the recent attention and research on the health benefits of open space have focused on cities where the high densities of people, buildings, roads, and other infrastructure can provide limited access to natural environments.

Parks and natural spaces fill some of human beings’ most basic needs – the need for interaction with other people and nature. They also can be among a City’s most egalitarian places, bringing together ethnically and socio-economically diverse people seeking an escape from everyday stressors. They provide environmental services that benefit the entire community. These functions result in a variety of health benefits, but require safe and inviting environments for their full realization.

Today, considerable evidence exists confirming the significant role of parks and naturals spaces in determining the health status of individuals and communities. The diverse evidence-based relationships between open space and health are illustrated in framework in Table NS.1 below. This framework identifies typical types of public and natural spaces in the urban environment. Associated with these types are their functions with regards to: 1) the direct uses of public and natural spaces by people and 2) the functions of spaces on the physical environment. Health outcomes are associated both with human uses and environmental effects. Features of open space that have been positively linked to health outcomes include providing opportunities to engage in physical activity, have contact with natural environments, community interaction, and improving environmental quality.

The following section outlines some key evidence linking these aspects of open space with health benefits experienced by individuals and communities. The evidence below focuses on the health effects

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of individuals and communities uses of natural spaces and urban parks. Indirect health benefits resulting from improvements in environment quality is beyond the scope of this analysis. A more comprehensive review of the research on parks, natural spaces and health may be found in *Healthy Parks Healthy People: the Health Benefits of Contact with Nature in a Park Context* published in 2002 by Deakin University in Australia.

**Table NS.1:** Framework for understanding the relationship among parks, public spaces, and natural areas and human health.

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<th>Health Outcomes Related to Parks and Natural Spaces</th>
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<td></td>
<td>Via environmental quality:</td>
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<td>• Air quality</td>
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<td></td>
<td>• Views</td>
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</table>

**Physical activity**

Physical inactivity leads to obesity and chronic diseases. Parks facilitate physically active lifestyles by providing relatively low cost choices for recreation. In a 2004 report the Institute of Medicine (IOM) found compelling evidence that the availability of parks and natural spaces “facilitate or constrain physical...”
activity". Multiple studies, including many of those summarized in the IOM report, confirm that parks are desired destinations used for physical activity and that residential proximity to parks was a significant predictor of physical activity levels. A review of studies showed that access to places for physical activity combined with outreach and education can produce a 48% increase in the frequency of physical activity. Physical activity has been linked to numerous health benefits including, reductions in premature mortality, preventing chronic diseases such as diabetes and hypertension, improves psychological well-being and preventing obesity.

**Stress, Depression, and Mental Functioning**

In the environments of modern cities, parks and open spaces provide needed reprieve from the everyday stressors that lead to mental fatigue. These experiences have been shown to improve the health of adults and children by reducing stress and depression and improving the ability to focus, pay attention, be productive, and recover from illness. Evidence shows that spending time in parks can reduce irritability and impulsivity and promote intellectual and physical development in children and teenagers by providing a safe and engaging environment to interact and develop social skills, language and reasoning abilities, as well as muscle strength and coordination. In other words, visiting a park can leave one with increased abilities to cope. Researchers in Chicago have found associations between contact with natural environment and improvements in the functioning children with Attention Deficit and Hyperactivity Disorder (ADHD). Contact with natural environments, such as trees, has also been found to be associated with increases in the psychological resources of individuals living in public housing to make changes that will improve their lives and decreases in “mental fatigue” and finding problems insurmountable.

**Recovery from Illness**

Parks and Natural Spaces also have direct healing effects. A classic study demonstrated that views of trees enhances the recovery of surgical patients and shortens the duration of hospitalizations. More recently, research from the Netherlands demonstrates that people who live in greener environments reduces the number of health complaints.

**Social Support and Social Cohesion**

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Greener parks satisfy needs for interaction by enticing residents into public spaces with trees, lush lawns and playgrounds. Conversely, barren, dirty communal spaces instill a sense of fear and indifference among residents, discouraging interaction among neighbors, which is crucial for building a sense of community. Sociability may alleviate some forms of mental illness and contribute to a sense of belonging and community. Neighborhood workdays for park and/or garden maintenance and improvement efforts foster common purpose and sense of ownership among residents. Perhaps most importantly, parks become a source of community pride and inspiration for further community improvements and revitalization.

There is significant evidence that open spaces, particularly those that consist of a significant amount of vegetation, serve a vital role in communities as a location for social interaction. For example, in a study conducted at a large public housing development in Chicago, Illinois, vegetated areas were found to be used by significantly more people and those individuals were more likely to be engaged in social activities than similar areas without vegetation. The authors of this study suggest that the vegetation in this study (mostly trees and grass) helped create “vital neighborhood spaces”. Social interaction and neighborhood spaces have been identified as key facets of healthy communities supporting social networks, social support, and social integration that have been linked to improvements in both physical and mental health.

**Effects on Vulnerable populations**
Significant attention in the literature of the relationships between open space and health is focused on the particular needs of youth and seniors as populations that could benefit greatly from access to open space. Unfortunately, the distribution of parks and open spaces within cities is often inequitable, with the majority situated in affluent areas. Low-income residents are left with few affordable and accessible recreational options. Concern about rapidly increasing rates of childhood obesity has resulted in increased attention on the access of youth to opportunities for recreation and physical activity.

**Effects on Environmental Quality**
Parks and open spaces provide savings on city infrastructure costs by filtering dirty air and water. Vegetation alleviates pressures on storm water management and flood control efforts by slowing and filtering water flow and also decreasing the area of impervious surfaces. Trees and greens space also improve the physical environment by removing air pollution from the air, mitigating the heat island effects.

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produced by concrete and glass, and lowering energy demands and associated emissions during warm periods.\textsuperscript{15} As green spaces become more numerous and well-connected, human powered transit options increase, potentially reducing traffic and vehicle emissions.

\textbf{C. Existing Standards and Public Health Objectives}

Standards and health objectives exist for some of the features included in the framework connecting open space with health benefits. In general, standards include quantitative targets for reducing disease outcomes, recommendations for activities supported by parks and natural spaces, and standards for the amount and distribution of parks and natural spaces in urban environments.

Promoting physical activity, reducing obesity, promoting mental health and well-being, promoting healthy environments (including clean air) are all leading health objectives included in the US Department of Health and Human Services (HHS) report Healthy People 2010.\textsuperscript{12} 2 16 Recommended levels of physical activity include 30 minutes of moderate-intensity activity five or more days per week or vigorous-intensity activity 20 minutes three or more days per week.\textsuperscript{17}

Recommendations included in both the Surgeon General’s report on Preventing Obesity and the IOM report on the connection between the built environment and physical activity emphasize the need to increase access to locations where individuals can engage in physical activity.\textsuperscript{2,3} In general access measures take two common forms: aggregate acreage per capita and distances between residences and parks.

- The Oakland General Plan, Open Space Conservation and Recreation Element (OSCAR) provides the most general standard for open space, and sets forth a goal of 4 acres of parkland for every 1,000 Oakland residents.
- The International City & County Management Association., in the document “Creating a regulatory Blueprint for Healthy Community Design”, suggests that parks be located within a quarter of a mile from every residence, roughly equal to a 10 minute walk from residences.\textsuperscript{3} This distance is supported by research conducted in Georgia that found those individuals who reported they lived within a 10 minute walking distance of a public park were more likely to achieve recommended levels of physical activity.\textsuperscript{4}

\textbf{D. Existing City Park Resources in Oakland}

To assess the current status of open space resources in the city of Oakland, we conducted an investigation of access to city parks using Geographic Information Services (GIS) mapping software. Data on the location of parks was gathered from the City of Oakland Parks and Recreation website and Oakland demographic information was taken from the US Census Bureau. The UC Berkeley Geographic Information Science Center (GISC) provided the neighborhood boundary information. Spatial analyses

\begin{footnotesize}
\begin{enumerate}
\item Parks for People: Why America Needs more City Parks and Open Space. San Francisco: The Trust for Public Land, 2003.
\end{enumerate}
\end{footnotesize}
were performed and maps created using ESRI software, ArcMap 9. This investigation attempted to answer the following questions:

1. What is the current access to city of Oakland parks and describe the distribution of these parks spatially and according to resident demographics?
2. What is the current access to city of Oakland parks that are suitable as sites for physical activity and recreation and describe the distribution of these parks spatially and according to resident demographics?

**Total acreage of Oakland City Parks**

When summed over the entire city of Oakland, there is roughly one acre of city park land for every 1,000 Oakland residents. A closer look reveals that this park land is not equally distributed throughout the city. (Figure NS.1) The neighborhood level analysis reveals that there are large sections of the city that have limited access to open space with between 0 and 1/3 of an acre per 1,000 residents, significantly below the city of Oakland General Plan goal of 4 acres per 1000 residents. Because this analysis was limited to city parks, it does not include the regional parks. The neighborhoods in the eastern parts of the city have access to regional open space that is not included in this analysis.

**City Parks within Walking Distance**

Examining the fraction of Oakland residents that lives within easy walking distance of park is another measure of the degree to which Oakland is providing a healthy environment in relation to open space. (Figure NS.2) Less than half of Oakland residents live within a quarter of a mile of a park. Only 33 percent of Oakland youth living within easy walking distance of a park.

**Parks Suitable for Diverse Recreational Activities**

While physical activity has been identified as a key health promoting activity supported by open space and urban parks, the attributes of parks that contribute to their suitability for health-relevant activities have not been well established. For example, if a person walks at 2 miles an hour then he or she would then have to walk around the circumference of 1 acre park track 10 times to get the recommended level of physical activity. Alternatively, a 5 acre square park would only require walking around a circular track 3 times. Larger acreage might also be conducive to diverse forms of recreation such as team sports. Therefore it follows that larger parks may support physical activity in qualitatively different ways than smaller parks.

Overall, the City of Oakland has remarkable few large parks suitable for recreation and physical activity. Only 14% of all Oakland residents live within a quarter mile of a park that is greater than 5 acres. (Figure NS.3) There is also a pronounced ethnic difference in accessibility to large parks. Hispanics/Latinos (11%) and Native Hawaiian and Pacific Islanders (10%) are much less likely to live within walking distance of a big park. Similarly over 90% of Oakland youth do not live in areas within walking distance of a large park. Examination of the areas within a quarter mile from a large park reveals that in many Oakland neighborhoods there is nobody who lives within easy walking distance to a large park.

**E. Impacts of the Oak to Ninth Development on Open Space and Health**

Generally speaking, research conducted on the relationships between access to green space and health has consisted of analyses that have demonstrated significant differences in health outcomes between those groups with access to open space and those without. Although measurable increases in health
benefiting behaviors and activities have been associated with access to open space, few forecasting models allow quantitative estimates of the amount of health benefit gained by increasing an individual’s access to parks. A few preliminary efforts are promising:

- Research conducted in Georgia found that 15% more individuals were achieving the recommended levels of physical activity when the place they identified to walk was a park within 10 minute walking distance than when the park was located farther than 10 minutes by walking or some other transportation method. Although the trend represented by this finding is significant, the study did not control for other potential covariates and therefore the absolute amount of the increase is likely not that useful for application to other groups.

- A study conducted in Tokyo with 3144 seniors in large urban areas found a significant increase in the longevity of those individuals that lived closer to walkable public green spaces. This research involved a logistic regression model to control for a number of other factors. Therefore, their findings of a 13% increase in the odds of surviving five years when living close to walkable green spaces could be used to predict health effects on other groups of seniors in Japan.

Overall, further research is required to make analytic models of park access and health outcomes context specific and to control for other intervening and confounding. This research will be necessary before planners can make generalized prospective, quantitative predictions for all populations. Nevertheless, the current evidence is strong enough to firmly state that increasing access to open space, particularly in the form of green spaces and parks will qualitatively result in an increase in activities known to have health benefits.

The Oak to Ninth Development proposes construction of approximately 3,100 new units of housing and 21 acres of new parks and open space in Oakland. The impacts of this development on individual and community health can be understood by examining the pathways by which open space has been shown to result in positive health outcomes and evaluating who will have access to these resources. Figure NS.4 outlines the three principle pathways by which the Oak to Ninth development could result in health impacts by altering the amount and access to open space.

**Health Assets for Future Project Residents**

By incorporating open space and parks into the design of the development, the Oak to Ninth project will provide residents of this development close access to a resource for social interaction with their neighbors, recreation, physical activity, and contact with natural environments. The Project EIR predicts that the 28.4 acres of open space to be included in this development will provide approximately 11 acres per 1,000 residents, greatly exceeding the OSCAR goal of 4 acres per 1,000 residents. The majority of the residents will live within easy walk from a park.

**Loss of Citywide Health Resources**

Nevertheless, the Oak to Ninth project represents a loss of open space and parkland for the rest of the city. The proposed design represents a loss of 15 acres of parkland that would have been constructed under the design approved as part of the Oakland General Plan Estuary Policy Plan. The loss of these acres of open space effectively reduces net opportunities for residents of Oakland to have contact with natural landscapes, and for social interaction, physical activity, and recreation. In particular, the failure to implement the Estuary Policy Plan represents the effective loss of potential large parks that could support physical activity and recreation needed to combat chronic diseases such as obesity, hypertension and diabetes that are endemic in Oakland.
Social and Physical Barriers to Waterfront Access for Upland Residents

In addition to the loss of absolute acres of open space, the current planning for the Oak to Ninth Development has not addressed several barriers likely to limit the accessibility of the new parks to residents of the surrounding areas.

- Significant existing physical barriers include automobile oriented streets, industrially zoned land, a multi-lane interstate highway, highway off ramps, a busy rail corridor. Officially sanctioned planning to address these barriers has not occurred. (Figure NS.5)
- The placement of the buildings is likely to block views of the waterfront and new parks from adjacent areas, reducing the attraction of these areas as a destination by residents of adjacent neighborhoods.
- The provision of the design that establishes the maintenance of these parks by residents rather than the city of Oakland blurs the line between public and private space. The ability of local residents to control the types of activities to be permitted in the parks included in the Oak to Ninth development represents a potential barrier that could prevent the utilization of these areas by residents of other Oakland neighborhoods.

Impacts on Park Equity of the Oak to Ninth Project

Evaluation of the distribution of city parks in Oakland found that nearly two-thirds of Oakland youth (under the age of 18) did not live within the recommended distance of any parks and 90% did not live within recommended distance of a large park. Sedentary patterns of behavior in youth have been linked with lack of physical activity in adults and the development of obesity and related diseases such as diabetes, hypertension, and premature mortality. None of the residents of the adjacent neighborhoods, Chinatown and Rancho San Antonio were found to currently live within the recommended quarter mile of a large park (one that is greater than 5 acres). While future residents of the proposed neighborhood will have access to levels of open space that greatly exceed that of adjacent neighborhoods and the city as a whole by up to 10 times, the proposed development does not address reasonably expected access barriers for upland residents. The project thus represents an action that is likely to increase health disparities for future residents of Oakland.

F. Recommendations for Design and Mitigations

The Oak to Ninth Project decreases the overall amount of open space in Oakland and provides a disproportionate share of new open space resources to future residents of this project. These negative and distributional impacts of the Oak to Ninth project might be mitigated by making changes to the design of the project that increase the accessibility and functionality of proposed new parks and open space resources from the perspective of all Oakland residents.

Modifications to the phasing of the development to accelerate the construction of the park and open space within the project as well as some limitations on the heights of buildings located along the waterfront have been incorporated into more latter versions of the Oak to Ninth project design. The proposal by the city of Oakland to construct a bike and pedestrian trail along the Lake Merritt channel has been considered as a means to improve the accessibility and connectivity of the site to surrounding communities and transportation options; however, no commitments have been made by the developer nor mandates by the planning commission. Similarly, concern over pedestrian safety and safe routes to and from the development has largely been unaddressed.
Specific requirements for the development that address the potential physical and social barriers to utilization of the parks by residents of adjacent neighborhoods and other Oakland residents might mitigate some of the above adverse health impacts of the development. Providing safe and convenient access to the new parks for residents of adjacent neighborhoods alone would give roughly 18,070 Oakland residents access to the health benefits of large parks. More specifically 3,730 Oakland youth and 2,660 seniors would have access to an important resource for protecting their health and preventing disease. *(Figure NS.6)* Increasing the accessibility of the Oak to Ninth open space components can be achieved in numerous ways.

- Making improvements for the safety of current intersections, railroad crossings for pedestrian travel could increase the ability and likelihood of residents of neighboring communities to access the open space resources of the development.
- The construction of a greenway along the Estuary Channel, with walking and bike trails connecting neighboring communities to the waterfront on a continuous trail might greatly increase the accessibility of the site. A channel trail should be linked to the Lake Merritt BART station with appropriate signage.
- Fifth Avenue provides an existing at-grade vehicle-oriented access between the Eastlake area and the waterfront. Redesign of this route with attention to bicycle and pedestrian modes of transport and public transportation routes would help connect several park-poor neighborhoods with the new park resources.
- Lastly, provisions for adequate parking and public transportation must be included to provide a means for those Oakland residents living in distant and park poor neighborhoods to experience the health benefits of the Oak to Ninth open space.
- Increasing the visibility of the waterfront and the open space might make more individuals aware and conscious of this public resource, and make use of the resource; altering the footprint or spatial orientation of the buildings could provide more sightlines to the open space and waterfront.
- Re-aligning the Embarcadero to pass between proposed park and waterfront the open space and proposed residential uses would increase both visibility as well as access via vehicle transport. Measures which increase the socioeconomic integration of the new community through the inclusion of affordable housing on site and close to the proposed locations for new parks would help reduce economic disparities in the project’s benefits.
- Conduct more comprehensive open space audit, to identify and describe the need for new parks in the city. Assess this and other development on the degree to which they meet the open space needs identified in the audit.

Although the potential social barriers to accessibility of the Oak to Ninth project are more difficult to predict, in the planning phases consideration of these impacts is necessary to avoid the creation of exclusionary spaces. Efforts to include residents of surrounding communities in the design and oversight of the parks and open space could greatly reduce the potential for the creation of open spaces that are not accessible to residents outside of the Oak to Ninth Development. In addition, follow-up by a public entity should be considered as a means to verify that the Oak to Ninth open space is continuing to functions as public space and not a private or restricted use resource for local residents.
DISTRIBUTION OF THE ACREAGE OF CITY PARKS ACCORDING TO NEIGHBORHOOD IN OAKLAND, CA

Legend

Acres of Park/1000 residents

- NONE
- LOW [<.35]
- MEDIUM [.35-.72]
- HIGH [.72-1.8]

DATA SOURCES:
* City of Oakland Parks and Recreation
* US Census Bureau
* UC Berkeley GISC (neighborhood boundaries)
Access to City Parks in Oakland, CA

Legend
- Green: Area that is a quarter of a mile from an Oakland City Park
- Grey: Oakland City Limits

Percent Living Within a Quarter Mile of a City Park

Oakland Residents: 35.00%
Oakland Seniors (Black or African American): 28.00%
Oakland Youth (Asian): 25.00%
Oakland Youth (Native Hawaiian and Other Pacific Islander): 22.00%
Oakland Youth (Hispanic or Latino origin): 20.00%
Oakland Youth (American Indian and Alaska Native persons): 18.00%
Oakland Youth (White): 15.00%

DATA SOURCES:
* City of Oakland Parks and Recreation
* US Census Bureau
* UC Berkeley GISC (neighborhood boundaries)
**Figure 4:** Pathways by which Oak to Ninth Development project could impact open space and health

- **Open space created as part of development**
- **Barriers (physical and social) to access open space**
- **Potential open space lost as a result of housing development in place of estuary plan**
- **People who could utilize the open space**
- **Physical activity**
- **Recreation**
- **Contact with “nature”**
- **Community Spaces**
- **Community Interaction**

**Reduction in disease outcomes:**
- Premature Mortality
- Obesity
- Mortality
- Cardiovascular disease
- Diabetes
- Depression
- ADHD

**Health Promotion:**
- Happiness and well-being
- Focus and attention
- “effectiveness”- problem solving
- Recovery from illness
- Productivity
- Stress reduction
- “Restorative”
High density waterfront-adjacent neighborhoods Eastlake, Lower San Antonio, Fruitvale access are underserved by direct access to waterfront.

Closest at-grade crossing is 5th Ave for 3/4 mile, next access to the east is grade separated, less than ideal for pedestrians as designed.

Contrast that with the ease of connectivity west of 5th Av where there are an abundance of at-grade crossings near Jack London Square.
Increasing Access to Parks in Neighborhoods Adjacent to Planned Oak to Ninth Development

**The Oakland neighborhoods of Chinatown and Rancho San Antonio are both located within one mile of the planned development.**

**Neither of these neighborhoods include a large park (one greater than 5 acres).**

**Increasing the ability of residents of these neighborhoods of the parks to be developed as part of the Oak to Ninth Development would give approximately 3,730 Youth and 2,660 Seniors access to an important resource for maintaining their health.**

DATA SOURCES:
* City of Oakland Parks and Recreation
* US Census Bureau
* UC Berkeley GISC (neighborhood boundaries)
Oak to Ninth Avenue
Health Impact Assessment

Chapter 4
Pedestrian Safety
A. Summary

According to Oakland’s Pedestrian Master Plan, Oakland residents suffer approximately 85.5 vehicle injuries to pedestrians per 100,000 every year including 3 pedestrian fatalities per 100,000 per year. The rate of pedestrian injuries is about 4 times the USDHHS standard; the rate of fatal injuries in Oakland is three times the USDHHS standard. A significant number of Oakland pedestrian injuries occur in the neighborhoods and streets (e.g., Downtown, Jack London Square, Chinatown, Lakeshore, East Lake, Lower San Antonio, International Blvd) surrounding the proposed project. Health impact forecasting shows that the project will contribute to an increase in pedestrian injury rates due to a significant increase in project related vehicle trips on roadways surrounding the project. Furthermore, safe walking or biking routes between the project and upland neighborhoods, schools, community facilities, and regional transit stops do not exist. The project’s adverse health impacts warrant investments in feasible pedestrian safety mitigations at intersections and in pedestrian routes between the project and typical destinations.

Project Health Impacts

1. Quantitative forecasting of changes to Oakland’s pedestrian injury rate based on project related changes in traffic flows and a baseline injury rate of 100 injuries/year in the area of influence estimates that the project’s traffic alone will contribute about 5.4 additional injuries per year or 268 pedestrian injuries in the years 2025-2075. The cumulative impact of increased traffic in the area by 2025 forecasts 20 additional injuries per year with a total of 1000 growth related additional injuries in the years 2025-2075.

2. No safe pedestrian routes currently exist between the project and upland neighborhoods; residents traveling to schools, community facilities, and transit stops via walking are at risk of pedestrian injury.

Recommendations for Design and Mitigations

1. Implement a traffic calming program in adjacent residential neighborhoods to include vehicle lane narrowing, raised crosswalks, raised intersections and traffic circles;
2. Provide countdown pedestrian signal heads, bulb outs, and center median refuge islands at high-volume multi-lane intersections where cumulative traffic volume increases exceed 5%;
3. Provide pedestrian warning signs or lights at all crossings or cross walks without traffic signal lights
4. Divert through-traffic around mixed use neighborhoods;
5. Study one-way to two way conversions and lane reductions for the Chinatown District;
6. Institute speed limit reductions to less than 20mph in mixed-use residential areas adjacent to the project;
7. Plan and implement bicycle and pedestrian trails between the waterfront, adjacent neighborhoods and transit stations east of I-880; one class I bike should be provided (e.g., along the estuary channel pathway and the existing at-grade 5th avenue roadway should undergo redesign as a multi-modal corridor between the Eastlake District and the waterfront.
8. Widen sidewalks or provide buffers between sidewalks and vehicle lanes on busy roadways with significant pedestrian traffic.
Oak to Ninth Avenue Health Impact Assessment  
Chapter 4. Pedestrian Safety

B. Background

Prior to the 1970s, the United States was a world leader in traffic safety. However, over the past three decades, measured by the number of traffic deaths per million vehicles, the United States has slipped to 13th place, and is still sinking.\(^1\) Nationally, for people aged one to 40, traffic injuries are the single greatest cause of disability and death. Over 42,000 people have died on US roads since 2002. Pedestrians account for 11% of all motor vehicle deaths, and in cities with populations exceeding 1 million, they account for about 35%. Each year, 80,000 to 120,000 pedestrians are injured and 4,600 to 4,900 die in motor vehicle crashes. Children aged 5 to 9 years have the highest population-based injury rate, and people older than 80 years have the highest population-based fatality rate. Pedestrians older than 65 years are more likely than younger pedestrians to be struck at intersections.

**Preventable Causes of Pedestrian Injuries**

The rate of pedestrian injuries in an area is dependent on several environmental factors such as vehicle volume, vehicle type (truck vs. car), vehicle speed, pedestrian volume, roadway width, vehicle speed, pedestrian facilities (sidewalk width, driveway conflicts, buffers), intersection design (crossing distance, signal phasing and timing, corner radii, cross walk treatments, median islands, curb extensions), lighting, and weather.\(^2\)\(^3\)\(^4\)\(^5\)\(^6\)

Vehicle speeds are the most important predictor of the severity of pedestrian injuries. Below 20mph the probability of serious injury or fatal injury is generally less than 20%; this proportion rapidly increases with increasing speed and above 35mph, most injuries are fatal or incapacitating.\(^7\) With regards to sensitive populations, the elderly and the very young populations are more vulnerable to vehicle injuries while walking because of slower walking speeds or slower reaction times.

Public health and transportation safety research consistently demonstrates that vehicle volumes are an independent environmental predictor of pedestrian injuries.\(^8\)\(^9\)\(^10\)\(^11\) In other words, all things being equal, when the number of vehicle trips increases, the number of vehicle injuries to pedestrians will also increase. A national study of pedestrian injuries and crosswalks that included data from Oakland also

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\(^1\) Evans, L. A New Traffic Safety Vision for the United States. AJPH Sept 2003, Vol 93, No. 9 (1384-1386)


\(^4\) Morrison DS, Petticrew M, Thomson H. What are the most effective ways of improving population health through transport interventions? Evidence from systematic reviews. Journal of Epidemiology and Community Health 2003;57:327-333.

\(^5\) Evidence shows that pedestrian and bicycle injuries vary with the 0.4 power of the proportion of trips made by walking or bicycle. Jacobsen PL. Safety in numbers: more walkers and bicyclists, safer walking and bicycling. Injury Prevention. 2003: 9: 205-209.


found that higher average daily traffic and multi-lane roads were significant and independent environmental risk factors for vehicle-pedestrian crashes in multi-variate analysis.\textsuperscript{12} The City of Oakland Pedestrian Master Plan also highlights the negative effect of high volumes on safety.\textsuperscript{13} The magnitude of effect of vehicle volume on injuries is significant. For example, a study of nine intersections in Boston’s Chinatown, researchers calculated an increase in 3-5 injuries per year for each increase in 1000 vehicles.\textsuperscript{14}

**Economic Costs of Pedestrian Injuries**

Vehicle injuries to pedestrians have significant economic costs beyond their physical toll on victims. A recent analysis of California data concludes that in 1999 economic costs resulting from 5634 fatal and non-fatal vehicle injuries to pedestrians resulted in over $3.9 billion in direct and indirect costs ($692,000 per injury). California Highway Patrol estimates of economic costs of vehicle injuries to pedestrians disaggregated by injury severity are provided in the table below.

<table>
<thead>
<tr>
<th>Pedestrian Injury Severity</th>
<th>Economic Cost per Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal Injury</td>
<td>$2,709,000</td>
</tr>
<tr>
<td>Severe Injury</td>
<td>$180,000</td>
</tr>
<tr>
<td>Visible Injury</td>
<td>$38,000</td>
</tr>
<tr>
<td>Complaint of Pain</td>
<td>$20,000</td>
</tr>
</tbody>
</table>

**C. Established Standards and Health Objectives**

The US Department of Health and Human Services (USDHHS) establishes National objectives for the rate of pedestrian injuries.\textsuperscript{15} The Federal Department of Health and Human Services defines the pedestrian injury rate as the number of injuries per unit time in a population of a standard size (e.g. injuries per year per 100,000 people).

- A rate of non-fatal vehicle injuries to pedestrians no greater than 19 injuries per year per 100,000 people.
- A rate of fatal vehicle injuries to pedestrians no greater than 1 injury per year per 100,000 people.

Significance criteria for pedestrian safety currently in the Project’s environmental review include only: (1) the introduction of an incompatible use or (2) the introduction of a design feature that does not comply with Caltrans design standards and that results in increased traffic hazard to pedestrians. (DEIR page IV.B-12) Based on the evidence above, the criteria in the EIR are inadequate with regards to the identification, analysis, and mitigation of significant impacts on the environment.

**D. Pedestrian Injuries in Oakland**

\textsuperscript{12} Zegeer CV, Steward RJ, Huang HH, Lagerwey PA. Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines. Federal Highway Administration, 2002.

\textsuperscript{13} City of Oakland. Pedestrian Master Plan. Page 18.


\textsuperscript{15} U.S. Department of Health and Human Services. Healthy People 2010 Objectives.
According to Oakland’s Pedestrian Master Plan, Oakland residents suffer approximately 85.5 vehicle injuries to pedestrians per 100,000 every year including 3 pedestrian fatalities per 100,000 per year. This rate of injuries is about 4 times the USDHHS standards. The published rate of fatal injuries in Oakland is 3 times the USDHHS standard.

A significant number of Oakland pedestrian injuries occur in the neighborhoods and streets (e.g., Downtown, Jack London Square, Chinatown, Lakeshore, East Lake, Lower San Antonio, International Blvd) surrounding the proposed project. Based on population and the intensity of pedestrian injuries, this impact analysis estimates a baseline injury rate of at least 100 pedestrian injuries per year in the area affected by the Oak to Ninth Project. Furthermore, the neighborhoods surrounding this project contain sensitive populations more vulnerable to impacts on pedestrian safety, including children, the elderly, walking-dependent, and the low-income transit-dependent.

E. Impact Analysis

The DEIR also acknowledges that the project will result in increases in significant project generated vehicle trips and changes in roadway vehicle volume. The Final EIR acknowledges that development of the Oak-to-Ninth Avenue Project, which includes 3100 residential units and 3500 parking spaces, will result in an additional 27,110 daily vehicle trips external to the project. (FEIR Table IV.B-4)

As described in the detailed intersection level traffic analysis in the DEIR, these trips will increase traffic volume on local streets in the downtown, Chinatown, and Jack London Square, and other neighborhoods. Five percent or greater cumulative increases in traffic volume would occur at several intersections. Figure Ped.5 documents the changes in traffic volumes in areas affected by this project.

Intuitively, when the number of vehicle trips increases, the number of vehicle injuries to pedestrians will also increase because the frequency of vehicle—pedestrian conflicts will increase. The Project's EIR analyzes intersection level vehicle travel delay secondary to changes in vehicle volumes but fails to further analyze the effects of vehicle volume on pedestrian injury.

The EIR acknowledges that the increase of pedestrian activity and vehicle volume will result in greater pedestrian—vehicular conflicts. Traffic impact models based on empirical research are available to estimate the effects of vehicle volume on pedestrian injury rates. Formally, the relationship between vehicle volume and injury rates or counts is called the road safety function. A common parametric form of the injury-vehicle volume relationship (the road safety function) is a power function with the following form:

\[ \text{Injuries} = \alpha X \text{(Average Annual Daily Trips)}^\beta; \text{typically where } \beta < 1 \]

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17 The author of this analysis has requested a map of counts of pedestrian injuries from the City of Oakland. A more precise estimate of pedestrian injuries in the area of influence of the Oak to Ninth project is pending this data.
Based on a power function with $\beta < 1$, the rate of pedestrian injuries will increase consistently as vehicle volume increases even though the increase in the rate will be attenuated at higher vehicle volumes. Empirical evidence suggests that 0.5 is a reasonable parameter for $\beta$ in the equation above; in other words, pedestrian injuries rate on a roadway are proportional to the square root of vehicle volume.\textsuperscript{19} The change in the number of pedestrian injuries after the project can be estimated simply as:

$$\% \text{ Change in Injuries} = \left(\frac{\text{Future AADT}}{\text{Baseline AADT}}\right)^{1/2} - 1 \times 100$$

The figure above graphically illustrates the relationship between change in vehicle volume and the change in the number of injuries. The middle line represents the annual change in the number of injuries base on a power function with Beta set to equal 0.5. Based on this function, a 10% increase in traffic volume on a street or at an intersection should be expected to produce an approximately 5% increase in the number of pedestrian injuries. A 50% increase in traffic volume would translate into an approximately 22% increase in the number of pedestrian injuries. The upper and lower lines provide a reasonable upper and lower bound on this volume—injury relationship with Beta set at 0.4 and 0.75 respectively.

According to traffic analysis in the DEIR, the increase in vehicle volumes at intersections in the neighborhoods around the project will varies considerably, ranging from about 2% to 127%. The average project-related increase in vehicle volume in the surrounding neighborhoods at the studied intersections is

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about 11% after project completion. The average cumulative increase in vehicle volume by 2025 at these intersections is 45%.

Assuming the current annual rate of pedestrian injuries in affected neighborhoods is 100 per year, the model described above estimates an increase in 5.4 injuries per year or 268 injuries between 2025 and 2075. 20

Based on the cumulative increase in average daily trips of 45% in 2025, the impact is 20 injuries per year or 1000 injuries between 2025 and 2075.

An analysis might estimate changes in pedestrian injuries based on vehicle flow on all segments on all roadways; nevertheless, this estimate shows that the Oak to Ninth Project will result in a significant environmental impact on pedestrian injuries in an area where the rate of pedestrian injuries already exceeds the national standard.

F. Recommendations for Design and Mitigations

The project’s adverse impacts on the pedestrian injury rate require a comprehensive countermeasure plan in the adjacent neighborhoods and planning and implementation of safe routes between the project and upland neighborhoods. A countermeasure plan should be based on further analysis of pedestrian safety hazards and mitigations on specific streets and intersections with significant increases in traffic volume.

The risk of pedestrian injuries must be considered alongside the many health benefits associated with walking. Increased walking provides exercise and has the potential to reduce rates of childhood obesity and overweight, as well as increase mobility and access among older adults. Walking also provides a transportation alternative to the automobile, reducing traffic congestion and related environmental hazards such as noise and air pollution. Hence, mitigations to reduce pedestrian injuries should not come at the expense of limiting, or discouraging pedestrian access and activity.

Existing planning efforts have already developed comprehensive countermeasure plans at for some neighborhoods. For example, the Revive Chinatown Plan lays out an approach to pedestrian safety for the Chinatown District. The Oak to Ninth Project could provide funding for the implementation of that plan proportional to it’s the project related share of traffic volume in this District.

In 2005, the non-profit organization, Urban Ecology conducted a preliminary planning study to assess issues of upland access to the waterfront at the estuary. As part of that effort, the planning study identified land uses and described circulation. (See Figure Ped.2) The study suggested pedestrian specific safety improvements for the 5th Avenue and 7th Street intersection. (See Figure Ped.3) The study also provided a preliminary concept plan illustrating a multi-modal corridor along 5th Avenue from Eastlake District to the Oakland Waterfront(See Figure Ped.4).

Appropriate and effective pedestrian safety mitigations would include the following:

20 Estimates of pedestrian injuries in the project’s area of influence are based on review of available injury data. This estimate will be updated based on the most recent pedestrian injury data when available.
1. Implement a traffic calming program in adjacent residential neighborhoods to include vehicle lane narrowing, raised crosswalks, raised intersections and traffic circles;
2. Provide countdown pedestrian signal heads, bulb outs, and center median refuge islands at high-volume multi-lane intersections where cumulative traffic volume increases exceed 5%;
3. Provide pedestrian warning signs or lights at all crossings or cross walks without traffic signal lights
4. Divert through-traffic around mixed use neighborhoods;
5. Study one-way to two way conversions and lane reductions for the Chinatown District;
6. Institute speed limit reductions to less than 20mph in mixed-use residential areas adjacent to the project;
7. Plan and implement bicycle and pedestrian trails between the waterfront, adjacent neighborhoods and transit stations east of I-880; one class I bike should be provided (e.g., along the estuary channel pathway and the existing at-grade 5th avenue roadway should undergo redesign as a multi-modal corridor between the Eastlake District and the waterfront.
8. Widen sidewalks or provide buffers between sidewalks and vehicle lanes on busy roadways with significant pedestrian traffic.
Figure PED-1:

Oakland's Motor Vehicle Collisions with Pedestrians 2000-2005

Pedestrian Impact

- **Fatal**
- **Severe**
- **Other Visible**
- **Complaint**

Source: The Statewide Integrated Traffic Records System (SWITRS)
Not all pedestrian injuries are shown
Legend
- 5th Avenue Corridor
- Commercial Activity
- School/Institution
- Recreational Activity
- Recreational Pathway
- Sidewalk Discontinuity
- Ped-unfriendly intersection
- Pedestrian Flow
- Bicycle Flow
- Auto Flow

Neighborhood Disconnection from Waterfront
Eastlake & Lower San Antonio residents are not accessing the waterfront due to perceived barriers, lack of pedestrian scale amenities and limited destinations along the 5th Avenue corridor.

7th/E8th St Intersection Barrier
There were no pedestrians moving south of 7th/E.8th. The intersection is intimidating, it is overly wide and the cross traffic is fast moving. There are few safety amenities or attractive destinations to reach.

Railroad Crossing Barrier
There was only one pedestrian observed crossing the tracks over the hour. The sidewalks are discontinued north of the crossing, there are no amenities to make this a welcoming environment.

5th Avenue Waterfront Access
Circulation and Local Activity Centers
7th and E8th St Intersection PLAN

This intersection is a barrier for N-S pedestrian travel and limits recreational bicycling activity due to its lack of amenities and perceived danger due to its dominance by the automobile.

Existing Problems

Wide N-S crossing over several traffic lanes on 5th Av west
No suitable median refuge for pedestrians
High Speed Turning Traffic
History of bicycle crashes, no bicycling amenities

Proposed Solutions

1. Increase time for pedestrians to cross
2. Pedestrian activated signal head
3. Extend medians to crosswalk and widen to 4 to 10 feet for refuge capacity
4. Curb bulbout at north-west corner to reduce vehicle turning speed
5. Advance Stop Limit Line
6. Bicycle box, bicycle detection at signal

Examples:

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5th Avenue Waterfront Access Potential Streetscape Improvements
5th Avenue Right-of-Way
7th Street to Embarcadero SECTION

Section A

Existing Problems
- Uninteresting streetscape
- Irregular landscaping/poor vegetation
- Auto-dominated environment w/Limited/no pedestrian/bike amenites

Proposed Solutions
- Enhance street grain with retail spill-out, community facilities street furniture, signage consistent w/E.12th St design
- Tree planting at 15-20 ft intervals
- Provide bike lanes or multi-use recreational path, and narrowed travel lanes to encourage corridor activity

Option 1: Class 2 Bike Lanes

Option 2: Class I Multi-Use Trail

5th Avenue Waterfront Access
Potential Streetscape Improvements
## Table: Changes in Traffic Volume at Project Area Intersections due to the Oak to Ninth Avenue Project

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Oak to Ninth Avenue
Health Impact Assessment

Chapter 5
Healthy Housing
A. Summary

Encompassing shelter, home, and neighborhood, housing affects health in diverse ways—positively and negatively. Healthy housing is affordable, physically safe, stable, spacious, and located in a setting that provides access to jobs, goods, services, transportation and nature, supporting meaningful social participation. Land use policies such as zoning and redevelopment can either facilitate or hinder the achievement of adequate housing needs in a city. Research demonstrates that residents of low-income economically segregated communities in Oakland live about six fewer years and experience a much greater burden of chronic disease than those in non-poverty neighborhoods. These reductions in life expectancy are caused by many place-based factors including air pollution, violence, traffic hazards, poor schools, the absence of parks, and limited economic opportunity and mobility. In contrast, mixed-income neighborhoods are assured the health benefits of access to healthier foods, better schools, better public transit, safer neighborhoods, park access and cleaner environments. The Oak to Ninth Development, as proposed, increases the supply of future market-rate housing but does not respond to the need for moderate and low-income housing. The project also creates a largely upper-income class-stratified community. As such, it is potentially a lost opportunity for improving health and wellbeing, growth of community ties, and enhancement of social cohesion in Oakland.

Health Impacts

1. The Oak to Ninth Project increases the future supply of housing in Oakland for those able to afford market-rate housing.
2. The project does not equitably advance Regional Housing Needs Determination (RHND) objectives for all income strata. Oakland has only met 18%, 57%, and 8% of its current RHND obligations for very-low, low and moderate income households, while exceeding RHND requirements for market rate housing. The project would result in an additional 121% of the 1999-2006 production targets for market-rate housing, while producing only 8%, 29%, and 0% of very-low, low and moderate production goals.
3. The project does not provide adequate and attractive housing choices for families with school aged children.
4. The project, in its current design, will foster the development of a socio-economically homogeneous community, exacerbating existing tensions between individual, neighborhood, and commercial interests.
5. The project may contribute to a greater concentration of below-market housing in low-income neighborhoods.
6. The project may contribute to regional air pollution and traffic congestion, resulting from demographic changes and shifts in the local jobs/housing balance.

Recommendations for Design and Mitigations

1. Ensure distribution of housing costs reflects the current household income distribution of Oakland so that:
   a. At least 25% of housing is affordable to low-income and very low-income households,
   b. At least 25% of housing is affordable to households earning the area’s median income;
2. Incorporate mixed-income dwellings as opposed to building market rate and below market rate housing in segregated areas.
3. Include as part of the development project site and implementation plans for a neighborhood elementary school.
4. Creating crossing points and common paths of access where residents must come in contact with one another.
5. Include a common courtyard with benches, plants and fountains in order to create common spaces through which dwellers pass and mingle.

B. Housing and Human Health

Adequate shelter, as described in the 1996 Istanbul Declaration on Shelter, “means more than a roof over one’s head. It also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such as water-supply, sanitation and waste-management facilities; suitable environmental quality and health-related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost. Adequacy should be determined together with the people concerned, bearing in mind the prospect for gradual development. Adequacy often varies from country to country, since it depends on specific cultural, social, environmental and economic factors. Gender-specific and age-specific factors, such as the exposure of children and women to toxic substances, should be considered in this context…”

“Healthy housing’ covers the provision of functional and adequate physical, social and mental conditions for health, safety, hygiene, comfort and privacy. A healthy home therefore is not a specially designed house; it is more a residential setting for a household that is including all standards and ‘best practice knowledge that has been gained over centuries of dwelling construction and immediate environment design.”

--World Health Organization

Housing is much more than the individual dwelling unit providing shelter. WHO’s Fourth Ministerial Conference on Environmental Health Review of Evidence on Housing and Health defines housing as “the conjunction of the dwelling, the home, the immediate environment and the community.” Shelter, home and neighborhood interaction of the home unit affect the individual’s quality of life and his or her health. Healthy housing is affordable, physically safe, stable, spacious, and located in a setting with access to jobs, goods, services, transportation and nature and supports meaningful social participation. The table below illustrates the multiple factors that link housing to health and well-being.

When thinking of housing and health it is particularly important to consider the population that is at highest risk. Children are particularly susceptible to environmental exposure and other social and environmental hazards. Children’s sensitivity arises from an underdeveloped immune system combined with many neuro-developmental processes that are occurring throughout the various stages of growth, and exacerbated by their instinctual desire to explore the world.

### Dimensions of Housing Relevant to Human Health

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<thead>
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<th>Material and Physical</th>
<th>Immaterial and Social</th>
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<td><strong>Individual and Household</strong></td>
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<td>Secure shelter</td>
<td>Affordability</td>
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<td>Light, Air, Heating and Cooling</td>
<td>Tenure</td>
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<td>Facilities for cooking and bathing</td>
<td>Degree of autonomy and control</td>
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<td>Occupancy and Crowding</td>
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<td>Physical Hazards (e.g., lead paint, pests, allergens, trip and fall hazards)</td>
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<tr>
<td><strong>Neighborhood and Community</strong></td>
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<td>Access to employment</td>
<td>Wealth</td>
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<td>Access to schools, transportation, public services, and retail goods</td>
<td>Crime and Violence</td>
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<td>Air, Soil, Water quality</td>
<td>Social cohesion and support</td>
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<td>Community Noise</td>
<td>Community efficacy and political power</td>
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<tr>
<td>Parks and Natural Spaces</td>
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**Lack of Secure Shelter (Homelessness)** Lack of housing and the overcrowding found in temporary housing for the homeless has been found to contribute to morbidity. For example, crowded conditions can increase the transmission of respiratory infections. Substandard housing, such as that used by the homeless population, often lacks safe drinking water and hot water for washing, and often have ineffective waste disposal, intrusion by disease vectors (e.g., insects and rats).³ Additionally, substandard housing negatively affects health: a 1994 study of children living in homeless shelters in the Los Angeles found that the vast majority (78%) of homeless children interviewed suffered from depression, a behavioral problem, or severe academic delay.⁴ Among sheltered homeless men and women, age adjusted death rates are several fold higher than in the general population.⁵

**Light, Air, Sound, Heating, and Cooling** The design of a home can have an important impact on the health of individuals. Poor natural lighting degrades mental health and promotes accidents.⁶ Ventilation is important for healthy airflow, moisture reduction and adequate temperature control. In addition to negative respiratory health effects mentioned below, poor ventilation is also associated with negative

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³ US Conference of Mayors
Oak to Ninth Avenue Health Impact Assessment
Chapter 5. Healthy Housing

effects on the psychological wellbeing of inhabitants, increasing stress levels and anxiety. The associations between temperature variability and health are numerous and include direct increases in cardiovascular disease, arthritis and poor sleep. Indirect effects include changes in air moisture and mold growth, which affect pulmonary wellness. Adverse health effects from noise pollution are mostly related to annoyance. In most residential places, levels do not threaten hearing impairment, but are loud enough for marked annoyance, decreased quality of sleep, decreased ability to concentrate and learn, increased anxiety, increased stress levels and increased risk of hypertension and ischemic heart disease.

**Overcrowding** Some individuals and households double up in response to reductions in supply or increases in the cost or demand for housing. While this prevents homelessness, overcrowding can increase the risk for respiratory infections such as tuberculosis in adults and ear infection in children. Overcrowding also increases the risk for poor sanitation, exposure to environmental noise, and residential fires. Crowded or substandard housing contribute to poor child development and school performance. For example, overcrowding can limit the space and quiet necessary for children to do homework. A recent study found that crowding combined with noise significantly increases chronic stress hormones in low-income children.

**Physical Hazards in Homes** A number of environmental conditions in older and poorly maintained housing affect health. Older housing stock often lacks adequate ventilation. Inadequate heating or ventilation leads to dampness and mold growth. Warm humid conditions also contribute to dust mites, a respiratory allergen implicated in the development and recurrence of asthma.

Hazardous physical conditions in the home also produce a significant burden of injury. In the US, there are approximately 13.5 million annual non-fatal injuries in or around the home. Most of this results from substandard housing conditions that vary in severity: from corroded windows that are difficult to open and close, unprotected heaters, unprotected windows, slippery surfaces, and sharp deteriorated edges, to damaged or flimsy stair rails and exposed electrical socket wires.

Corridor and door width is of particular importance to elders and handicapped individuals. Hallways that are too narrow or doors that are not wide enough to allow for wheelchair access, use of a walker, and ease of maneuvering can impair movement and accessibility throughout the home. This can lead to risky

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14Cooper, M. op cit.
maneuvers that could easily lead to injury of both the individual in need and the person that may be facilitating his or her activity. For example, bathrooms that are difficult to access can put individuals at an increased risk for falling and injuries, and restricted movement around the house can decrease a person’s independence, moreover decreasing their quality of life.

Homes also contain hazards attributable to toxic building materials. This is especially dangerous to infants and toddlers who are at a sensory exploratory age with tendencies to bite window sills when they are at mouth level.\(^\text{18}\) This practice increases the risk of lead exposure in buildings with lead-based paint.

Physical hazards are also affected by housing market affordability. For example, code enforcement agents often find that tenants are reluctant to initiate enforcement actions because of fears of landlord reprisal or eviction in an unaffordable housing market.

**Social Cohesion and Support** Social cohesion is a broad concept that operates at many levels such as family, neighborhood, identity group, locality, society, etc. Dimensions of social cohesion relevant for human health include *supportive social networks* (which provide access to material and emotional support in times of need), *social participation* (meaning participation in relationships providing friendship and company and participation in the workforce), *community engagement* (including participation in organizations that work for the benefit of members and others), and *political engagement* (involvement in the democratic process to advance needs or interests.)

Strong social relationships and community cohesion are protective of health in multiple ways. Neighbors, friends, and family provide material as well as emotional support. Support, perceived or provided, can buffer stressful situations, prevents damaging feelings of isolation, and contributes to a sense of self-esteem and value.\(^\text{19}\) Strong relationships exist among supportive social networks and illness rates, recovery from illness, and mortality (see above discussion of residential displacement). Social isolation can both cause and aggravate mental illness. Health benefits of community participation result from actions of community organizations to meet survival needs (food pantries) and improve neighborhood conditions (neighborhood clean-up days). Political engagement influences public spending on programs that provide health, education, job training, and public transit.

The magnitude of the effect of social support on health is substantial and has been illustrated by several prospective long term studies in the United States. For example, even after accounting for income, race, smoking, obesity, and exercise, the Alameda County Study found that individuals with fewer social contacts (e.g. marriage, family, friends, and group membership) had twice the risk of early death.\(^\text{20}\) In a more recent study, living in high-density Mexican-American Neighborhoods reduced the risk of stroke, cancer, and hip fracture by two-thirds for older Mexican immigrants.\(^\text{21}\)

One of the most significant effects of eviction and displacement may be the loss of community cohesion


created by long-term residents. Measures of social cohesion such as the degree of trust among neighbors are strongly associated with health, education, and neighborhood safety. Displacement can result in the reduction of long-term residents who are most likely to invest in their communities. In areas where residents feel less invested because of the continual threat of displacement, one can find dilapidated environmental conditions, such as broken windows on buildings, loitering and illegal disposing of hazardous substances. Furthermore, neighborhoods where residents have little incentive to invest are shown to have higher high school drop out rates and crime rates.

**Neighborhood Schools** Community schools are key elements of healthy and sustainable neighborhoods, and housing choice for families depends on neighborhood school access and quality. Community schools provide a sense of safety, build connections between the school and neighborhood, instill a sense or community among students, engage students in learning, encourage parental involvement, facilitate physical activity, and promote environmental quality. Research on educational practices has demonstrated that well designed and operated community based schools support the goal of high quality education. Parental involvement is crucial to the child’s academic success, yet the farther a child lives from school, the less likely parents will be involved in the institution and attending PTA meetings, sports matches, concerts and plays.

According to the 2001 National Household Travel Survey, less than 15% of children aged 5 to 15 walk to school. In contrast, in 1969, almost half of students walked or biked to school. According to the CDC, long distances to school are a primary barrier to walking and danger from traffic was the second most important barrier. Research on travel mode choice also shows that when schools are located closer to home, more children walk and/or bicycle to school and vehicle pollution emissions fall. A simulation done for Gainesville, Florida demonstrated that neighborhood schools and sidewalk completeness resulted in a doubling of the number of children walking and a 15% reduction in vehicle emissions.

**Housing Affordability** Housing in the United States is typically obtained through the private market for goods; this means that cost and affordability is directly related to access and quality. When the demand for affordable housing is greater than its supply, households have a limited number of choices. Individuals must either pay more than they can afford for housing, resort to lower quality housing, accept overcrowding, or move away to where costs are lower in order to stay within their economic means.

Inadequate availability of affordable housing “is amongst the most prevalent community health

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24 Blash, Lisel; Shafer, Holley; Nakagawa, Monique; Jarret, September; Getting Behind Families Leaving San Francisco; San Francisco State University; Public Research Institute; September 2005
25 Schools for Successful Communities: An Element of Smart Growth; The School Building Association including Council of Educational Facility Planners International and United States Environmental Protection Agency; September 2004
This shortcoming in housing creates a number of concerns. The most obvious is homelessness (discussed above). However, it also results in displacement of residents further away from their employment, community, friends and basic services such as supermarkets.

Most directly, unaffordable housing leads to financial distress that is responsible for a large reduction in monetary allocation for other basic living needs such as food, medication and clothing. Today, many households with incomes several times the full-time minimum wage pay more than half of their incomes for housing. Nationally, those with incomes in the bottom fifth of the income distribution and paying 50% of their incomes for housing have an average of $417 to cover all non-housing monthly expenses. This means that in order to pay for housing, many households may need to sacrifice other essential needs including food, clothing, and health care services. A recent survey of American cities found that low paying jobs and high housing costs are the most frequently cited reasons for hunger. One study showed that children from low-income families on a waiting list for housing subsidies were 8 times more likely to have retarded growth compared with children whose families had obtained the subsidy.

Unaffordable housing cost burdens constitute a potential economic strain for many households. Strain or extra work to meet cost burdens may compromise personal or family relationships. Time-pressed parents may choose either more punitive or low-effort strategies to resolve conflict with children. Studies have shown that economic strains such as being unable to pay the bills cause depression in mothers and harsh parenting styles.

The experience of stress can also result in physiological changes associated with human disease. For example, a randomized study of healthy human volunteers demonstrated that chronic stress doubled the rate at which inoculation with a common cold virus led to a clinical infection. Among pregnant women, stress has also been associated with a greater likelihood for pre-term delivery and low birth weight—both factors that potentially lead to developmental delays and increased infant morbidity and mortality.

**Involuntary Displacement** Involuntary displacement or relocation is a stressful and even traumatic event. If displaced residents are forced to relocate outside of their neighborhood, valuable supportive family and community relationships can be lost both for those leaving and well as for those remaining behind.

Some inferences about the health effects of displacement come from public health studies of residential mobility. Public health research has studied the effects of residential stability on several health outcomes. Residential stability in childhood has positive effects on self-rated health at midlife. On the other hand, in a longitudinal analysis, increased mobility was associated with childhood events such as abuse.

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35 Cohen, Sheldon et al. Types of Stressor that increase susceptibility to the common cold in Healthy Adults. Health Psychology. 1998; 17(3):214-223.
neglect, and household dysfunction and increased the likelihood of smoking and suicide. Another longitudinal study demonstrated that residential instability in childhood predicted the lifetime risk of depression and the timing or onset of depression. Other research from education and social science fields demonstrates frequent family relocation leads to children’s grade repetitions, school suspensions, and emotional and behavioral problems.

Displacement may also contribute to residential segregation and ‘ghettoization’ if available replacement housing for displaced residents is not available in integrated neighborhoods. A study that examined expiring HUD Section 8 agreements with private owners in California, found that, on average, families relocated to relatively more racially-segregated communities.

The San Francisco Department of Public Health conducted focus groups with tenants facing eviction from the Trinity Plaza Apartments due to redevelopment in 2003. Discussing how she felt about an eviction notice, one resident stated: “We are fearful, feelings are hurt, and [we’re having] difficulty speaking about displacement, stressed, sleeplessness, anxiety, and the issue has been constantly going on.”

Displacement can also result in indirect environmental effects. For example, low-income households are more likely not to own a car and depend on public transit trips. Displacement of lower-income workers away from job and transit centers has the potential to increase household vehicle ownership, vehicle trip frequency, and vehicle trip distances. Vehicle travel results in significant environmental and health burdens due to poor air quality, noise pollution, injuries, and physical inactivity.

**Segregation** Racially segregated neighborhoods concentrate conditions of disadvantage in a number of ways. As places these neighborhoods typically have fewer assets and resources such as schools, libraries and public transportation. Segregated low-income neighborhoods host unwanted land uses such as power generation, solid and hazardous waste sites, and bus yards. Freeways and other busy roadways often run through low-income neighborhoods resulting in disproportionately higher exposure to noise and air pollution. Residents are often isolated from economic opportunities and marginalized in political decision-making, limiting their ability to effect change in their circumstances. Segregation has profound and diverse impacts on health. Residents of high-poverty neighborhoods live about

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40 Forbes E. Eroding Neighborhood Integration: The Impact of California’s Expiring Section 8 Rent Subsidy Contracts on Low-Income Family Housing. 2000 The Ralph and Goldy Lewis Center for Regional Policy Studies. UCLA, School of Public Policy and Social Research. Los Angeles, California
41 EPA 2001
43 Litman T. Op Cit.
47 Bullard R D. Dumping in Dixie: Race, class, and environmental quality. Boulder: Westview; 1990
eight fewer years than non-poverty neighborhoods. A good deal of this burden of mortality is due to preventable events like infant mortality, pedestrian injuries, and homicide. Research also demonstrated a relationship between residential segregation and negative health outcomes such as teenage childbearing, tuberculosis, cardiovascular disease, availability of food establishments serving healthy fare and exposure to toxic air pollutants.  

Evidence for the environmental effects of segregated neighborhoods comes from the HUD Moving to Opportunity demonstration program. This program, implemented in five US cities, evaluated the health and social effects of relocating households from public or subsidized housing in high poverty neighborhoods to private rental housing in non-poverty neighborhoods. The program design involved a random assignment of families to an experimental group (vouchers for housing in low poverty neighborhoods and relocation assistance), a section 8 group (geographically unrestricted vouchers), and a control group with a longitudinal follow-up of families over 10 years. The following excerpt from the executive summary of the interim evaluation testifies to the social value of non-poverty area residence:

From the families' perspectives, the principal benefit of the move was a substantial improvement in housing and neighborhood conditions. Families who moved with program vouchers largely achieved the single objective that loomed largest for them at baseline: living in a home and neighborhood where they and their children could feel and be safe from crime and violence. On a list of observable characteristics, their homes and neighborhoods were substantially more desirable than those where control group members lived. These benefits accrued to families in both the experimental group and the Section 8 group, although the improvements tended to be roughly twice as large for experimental group families, who were required to move to low-poverty areas, at least initially.

Perhaps not surprisingly, these improvements in living environment led to significant gains in mental health among adults in the experimental group. The levels of psychological distress and depression were substantially reduced in this group. In addition, adults in both the experimental and Section 8 groups experienced substantial reductions in obesity for reasons we do not yet understand. Among the children in these families, girls appear to have benefited from the move in several ways. They experienced improved psychological well-being, reporting lower rates of psychological distress, depression, and generalized anxiety disorder, and improved perceptions of their likelihood of going to college and getting a well paid, stable job as an adult. These girls’ behaviors changed as well, with a smaller proportion working instead of attending school. They were less likely to engage in risky behavior or to use marijuana. Finally, both these girls and society as a whole benefited from a reduced number of arrests for violent crimes.

C. Established Standards and Health Objectives

Regional Housing Needs Determination The Regional Housing Needs Determination process is a State mandate devised to address the need for and planning of housing across a range of affordability in all communities throughout the State. Each jurisdiction within the Bay Area (101 cities, 9 counties) is given a share of the anticipated regional housing need. The timeframe for the last RHND process is January 1, 1999, through June 30, 2006, (a seven and a half year planning period). According to the State Department of Housing and Community Development, there is a regional need for 230,743 new housing units in the nine Bay Area counties from 1999—2006. Of that amount, at least 58 percent, or 133,164 units, are needed for moderate, low and very low-income households. For Oakland, the table below compares housing units produced (based on permits issued) to the RHND for the 1999 to 2006 time period.

The State of California (Government Code Section 65584) further mandates that each council of governments (COG) distribute the State-identified housing needs allocations to each jurisdiction within the COG's region. HCD provides regional housing numbers or "goal numbers" that specify the regions' share of the state's housing need. It is the responsibility of the Association of Bay Area Governments (ABAG) to determine the fair share of regional housing need for each city and county within the San Francisco Bay Area region. The law further states that "[T]he share of a city or county of the regional housing needs includes the share of the housing need of persons at all income levels within the area significantly affected by a general plan of the city or county."

The state asks local jurisdictions to develop their fair share obligations under regional housing needs determinations. Cites are obligated by the state to develop a Housing Element (a mandatory element of the General Plan) to identify policies and implementation actions to achieve RHND targets. To date, Oakland has more successfully achieved moderate and above-moderate income housing production goals (as established in the Regional Housing Needs Determination) than low and very low income housing. (See table below based on Oakland's Housing Element)

Jobs Housing Balance Local, regional, and, state policies, including California Assembly Bill 857, 53 the Bay Area Regional Air Quality Plan54, and the California General Plan Guidelines, 55 and the 2003 Governor's Environmental Goals and Policy Report56 aim for improving the jobs—housing balance in order to mitigate adverse environmental effects.

National Health Objectives The Federal Government prepares an agenda for health known as Healthy People 2010 which includes a list of health objectives and goal for reducing the burden of illness and injury. The following is a list of goals relevant to housing:

- Goal 8-11: Eliminate elevated blood lead levels in children
- Goal 8-16: Reduce indoor allergen levels
- Goal 8-19: Increase the number of new homes constructed to be radon resistant
- Goal 8-23: Reduce the proportion of occupied housing units that are substandard

D. Housing Needs in Oakland and the Region

53 California Assembly Bill 857. 2002.
54 BAAQMD CEQA Guidelines. 1999.
The project EIR contains an adequate description of demographic and housing market conditions in the project area. This report provides additional information regarding housing demand for the low and moderate income sectors of the housing market.

Based on an analysis done by the Oakland Tenant’s Union in 2004, City of Oakland currently has significant unmet needs for housing for low and moderate income sectors of the housing market. The report found that:

- 58.6% of all Oakland residents rent their homes
- 63% of Oakland renters are currently unable to afford a 2-bedroom apartment in Oakland at the fair market rate of $1,420/month.
- 42% of renters and 33% of owners pay more than 30% of their income for housing. And among renters with incomes of less than $35,000, about 70% of them pay more than 30% of their income towards rent. (2003 DHE)
- Waiting lists for assisted housing for seniors, disabled, and families range from 6 months to 2 years.
- Waiting lists for Section 8 vouchers currently range between 3 and 5 years, with an anticipated increase based upon new federal policies.

Housing production in Oakland in the most recent RHND period (1999-2006) is enumerated in the table below. The table illustrates that the City of Oakland has exceeded production targets for market rate housing for this period. However, production of housing for those with very low, low and moderate incomes is a small fraction of the needed demand.

### Oakland's Housing Production Compared to Regional Housing Needs Determination for 1999-2006

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low (up to 50% AMI)</td>
<td>2,238</td>
<td>289</td>
<td>104</td>
<td>393</td>
</tr>
<tr>
<td>Low (51-80% AMI)</td>
<td>969</td>
<td>419</td>
<td>136</td>
<td>555</td>
</tr>
<tr>
<td>Moderate (81-120% AMI)</td>
<td>1,959</td>
<td>152</td>
<td>3</td>
<td>155</td>
</tr>
<tr>
<td>Above Moderate (&gt;120% AMI)</td>
<td>2,567</td>
<td>3,650</td>
<td>0</td>
<td>4,553</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,733</strong></td>
<td><strong>3,727</strong></td>
<td><strong>746</strong></td>
<td><strong>5,656</strong></td>
</tr>
</tbody>
</table>

E. Impact Analysis


58 National Low Income Housing Coalition, "Out of Reach 2003: America's Housing Wage Climbs".

59 New HUD policies will severely reduce the amount of Section 8 vouchers funded. National Low Income Housing Coalition, April 30, 2004 Advisory.
The Project’s environmental review evaluated the project’s impacts with regards to the following housing-related criteria:

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere, in excess of that contained in the Oakland Housing Element
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere, in excess of that contained in the Oakland Housing Element
- Induce substantial population growth in a manner not contemplated in the General Plan, either directly or indirectly, such that additional infrastructure is required that was not previously analyzed
- Have social and economic effects that result in indirect changes in the physical environment, such as in ripple effects that would lead to physical deterioration and urban decay

The Project EIR described the current supply of employment and housing on the proposed project site, in surrounding areas and did not find any significant impact for the criteria listed above. The lead agency does analyze the direct effect on the supply of affordable housing in Oakland, the indirect effect on housing rents and prices in surrounding neighborhoods, and finally the indirect physical impacts, which require mitigation.

**Effects on Housing Adequacy** Clearly the project increases the future supply of housing in Oakland. However, as of June 2005, Oakland had already exceeded market-rate housing obligations for 1999-2006 by seventy-seven percent based on building permits issued. In contrast, Oakland has only met 18%, 57%, and 8% of its current RHND obligation for very-low, low and moderate income households, respectively.

The project site sits within an Oakland Redevelopment Zone, which requires that 15 percent of housing units developed in the associated redevelopment area be affordable, with 40 percent affordable to “very low income” households. As planned, none of the 3100 units that the Oak to Ninth Project meets the housing needs of very low-income and low-income Oakland households. This project would thus result in requirements to produce affordable housing in the redevelopment area but not necessarily onsite.

New projects that use limited opportunity sites may contribute to this imbalance unless some current market rate units are vacated and prices for those vacated units fall. Even with redevelopment inclusionary requirements, eighty-seven percent of the units produced through the Oak to Ninth Avenue project would be market-rate units. This project would result in an additional 121% of the 1999-2006 production targets for market-rate housing, while producing only 8%, 29%, and 0% of very-low, low and moderate production goals, respectively.

The table below disaggregates the project’s housing production by affordability. The table illustrates that Oakland has only met 18%, 57%, and 8% of its current RHND obligation for very-low, low and moderate income households, while exceeding RHND requirements for market rate housing. The Oak to Ninth Avenue project would result in an additional 121% of the 1999-2006 production targets for market-rate housing, while producing only 8%, 29%, and 0% of very-low, low and moderate production goals.

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Oak to Ninth Project Housing contribution to the Regional Housing Needs Determination

<table>
<thead>
<tr>
<th></th>
<th>Very-low</th>
<th>Low</th>
<th>Moderate</th>
<th>Market</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oakland Share of RHND 1999-2006</td>
<td>2238</td>
<td>969</td>
<td>1969</td>
<td>2567</td>
<td>7743</td>
</tr>
<tr>
<td>Oakland Housing Permits Issued (June-05)</td>
<td>393</td>
<td>555</td>
<td>155</td>
<td>4,553</td>
<td></td>
</tr>
<tr>
<td>Percent Achievement of RHND</td>
<td>18%</td>
<td>57%</td>
<td>8%</td>
<td>177%</td>
<td></td>
</tr>
<tr>
<td>Proposed Units Within the Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Redevelopment Obligation Offsite</td>
<td>186</td>
<td>279</td>
<td></td>
<td>465</td>
<td></td>
</tr>
<tr>
<td>Project Total (Offsite and Onsite)</td>
<td>186</td>
<td>279</td>
<td>0</td>
<td>3100</td>
<td>3565</td>
</tr>
<tr>
<td>Contribution to RHND</td>
<td>8%</td>
<td>29%</td>
<td>0%</td>
<td>121%</td>
<td></td>
</tr>
</tbody>
</table>

The production of affordable housing would utilize the limited housing opportunity sites offsite. If affordable housing requirements can be met onsite, these offsite opportunity sites may still be available for additional mixed-income housing production. Onsite affordable housing also prevents the concentration of low-income households. (See Below)

Utilizing an infill opportunity area and not contributing to housing needs of existing residents, means that the plan contributes to air pollution, noise, greenhouse gases, consumption of natural resources, and traffic injuries as those residents relocate in search of affordable and adequate housing. This project appears to thus incur an opportunity cost to the health of Oakland residents living in substandard, overcrowded housing and those with excessive housing cost burdens.

This analysis only evaluates the relation of the project to housing demand with regards to housing costs. A more detailed quantitative analysis of the relationship should also evaluate adequacy with regards to size, number of bedrooms, and neighborhood infrastructure. Still, this project and the general plan and zoning amendments it requires thus do not appear consistent with the public health and welfare objectives of planning rules and progress towards Oakland’s RHND goals.

**Project Effects on Social Cohesion** The Oak to Ninth project will result in a new residential neighborhood which, because of the high cost of housing, is likely be relatively homogeneous with regards to social class. While social homogeneity with regards to income, education, and age may have some positive effects on social cohesion among project residents, future Oak to Ninth residents may not reflect the economic or ethnic diversity of the community or the city. This may reinforce an inward-focused culture and create polarization between neighborhood interests and broader social concerns.

Research on “gated communities” in the United States suggests that these structures may diminish social contact across ethnic and class lines, and members can form powerful voting blocks against public sector interests. For example, if fewer families with children live in the project, it may make it less likely that residents support school funding. Conversely, greater interaction with children from the neighborhood may increase support for children’s needs. Other research on urban dynamics suggests the migration of

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populations with relatively higher socio-economic class into low-income or distressed urban neighborhoods might result in the demolition of low-income housing and reductions in support for public health and social services.  

**Effects on housing choice for families** The Oak to Ninth Avenue project anticipates 3100 residential units and 5000-6000 residents. While a new residential neighborhood of this magnitude should expect a significant population of children, the development proposal does not include any planning for a neighborhood school. The proposal also has not included planning for safe pedestrian access to nearby area public schools. Both public schools closest to the project site, La Esquelita and Lincoln Elementary Schools are already serving children at their capacity.

A family’s housing choice decisions depend on access to and the quality of area schools for all of the reasons discussed above. The absence of adequate neighborhood public school with safe access at the Oak to Ninth Avenue site will likely discourage many families with school aged children and those anticipating children from considering living within the proposed neighborhood. The project will thus not provide housing opportunities of adequate quality for a large sector of the population. Furthermore, by discouraging residence of families with children, the project will limit the future demographic diversity of the community living at the site and will increase avoidable project generated vehicle trips.

**Project Effects on Segregation** The Oak to Ninth project triggers State Redevelopment Law requirements for the City of Oakland to produce low income housing. Redevelopment Law requires the agency to produce new affordable housing units equivalent to 15% percent of new dwelling units developed by private entities. Forty percent of the affordable units need to be affordable to very-low income households. From the perspective of integration, affordable housing should be included within the context of a mixed-income project. If this low-income housing is not integrated into the project, it may more likely be produced where housing costs are already low, potentially increasing residential segregation by household income.

**Environmental Effects Related to Jobs-Housing Balance** Along with job location and housing availability, housing price, housing quality, and school quality are important variables on housing choice. Qualitatively, the jobs-housing balance depends on available housing being adequate in size and affordable in cost to an area’s employees. In the Bay Area, housing supply has not kept pace with the growth of jobs. Because of this, Oakland faces a severe shortage in the supply of housing particularly for low and middle income households.

Expected employment growth is likely to exacerbate housing supply-demand imbalance for low and moderate income households. Most of the new jobs projected in the regional economy will be in the service and retail sectors, with incomes insufficient to afford market-value property. Furthermore, the gap between the minimum wage and the minimum hourly wage required to afford adequate housing has increased over the past decade. Today, thousands of low income renters pay more than 50% of their income in rent. Even individuals earning modest wages, such as public service employees and those in the construction trades cannot afford to live where they work.

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63 California Planning Roundtable 1998

As a result of this imbalance in supply and demand, many households, especially family households with children, are relocating far from regional job centers primarily in order to purchase affordable homes. Findings from one analysis of Bay Area jobs-housing balance trends found that job-rich cities have relatively high housing prices and workers were less likely to live locally when housing was expensive. At the same time, higher paid workers from other Bay Area cities and non-workers are taking up residence in cities in the urban core like Oakland.

Inadequate housing for households of different economic means in Oakland combined with the loss of low and middle income households will have significant social, economic, and environmental costs. The growth in external commuting means greater air pollution, transportation infrastructure expenditures, and loss of natural habitats fragmentation. Total vehicle miles of travel (VMT) have doubled in the U.S. since 1970. The MTC expects VMT to continue to grow in the Bay Area Region despite significant transportation investments.

Based on this context and trends, this project is likely to contribute to the following effects on demographics in the City of Oakland:

1. This project will provide higher-income households greater opportunities for home ownership in Oakland; some higher income worker households residing elsewhere in the region may relocate to Oakland; and a greater proportion of new higher-income employees moving into the region will reside in Oakland.
2. High income “empty nesters” and second-home owners constitute a significant share of the market for market rate condominium development in the area. This project is likely to result in a greater proportion of higher income non-worker households residing in Oakland.
3. Moderate-income and low-income worker households currently renting will not have sufficient opportunities for home ownership in the project. The project is thus likely to result in a smaller proportion of moderate-income and low-income households employed and residing in Oakland.
4. Few households employed in new jobs will have opportunities to live in this project. This means that a smaller share of those employed in lower wage jobs in Oakland are likely to be residing near their jobs.

The effect of these demographic changes associated caused by a jobs-housing imbalance will have effects on regional transportation demand and commute patterns. Some of these effects are likely to include:

1. Higher income households have high rates of vehicle ownership and automobile use. Retaining higher income households in Oakland may result in fewer miles driven relative to a situation where they reside outside the city, at least for commute trips.
2. Low-income and moderate-income households will have more and longer vehicle trips. People in lower income households take fewer vehicle trips and more transit trips than people in higher income households. Relocation of lower-income workers further from job and transit centers

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66 EPA 2001

HH-16
would be likely to increase household vehicle ownership, vehicle trip frequency, and vehicle trip distances relative to a scenario where lower-income people can reside closer to job centers.

3. Increased proportion of total Oakland employees residing outside of the City will increase vehicle trips and distances. New housing would not meet the needs, with regards to costs, for most new employees expected to be working in Oakland.

F. Recommendations for Design and Mitigations

To the extent feasible, the Oak to Ninth project should model healthy housing and ethnic and economic integration. At present, the project represents an unrealized opportunity for the project to meet housing needs for all sectors of Oakland’s population. The project proposed varieties of design and size but not a variety of affordability. Given the pathways between housing and health described above, the project should provide an amount of affordable housing that not only meets demand, but also addresses the human health consequence of economic and social segregation and integrates the social community within the project with the surrounding neighborhoods. The following actions would have positive contributions to the long-term health and well-being of the Oakland population, particularly low-income, immigrant, and minority families:

1. Ensure distribution of housing costs reflects the current household income distribution of Oakland so that:
   a. At least 25% of housing is affordable to low-income and very low-income households,
   b. At least 25% of housing is affordable to households earning the area’s median income;
2. Incorporate mixed-income dwellings as opposed to building market rate and below market rate housing in segregated areas.
3. Include as part of the development project site and implementation plans for a neighborhood elementary school.
4. Creating crossing points and common paths of access where residents must come in contact with one another.
5. Include a common courtyard with benches, plants and fountains in order to create common spaces through which dwellers pass and mingle.
Oak to Ninth Avenue
Health Impact Assessment

Chapter 6
Air Quality
A. Summary

Vehicle emissions associated with the I-880 freeway, including particulate matter and diesel particulate matter have the potential to result in significant and adverse impacts on the health of residents of the Oak to Ninth Project. Without mitigations, future residents of the Oak to Ninth Avenue living within 500 feet of the I-880 freeway are likely to experience higher rates of respiratory illnesses and higher morbidity from asthma. The project also indirectly increases exposure to roadway particulate matter emissions in neighborhoods surrounding the project.

Health Impacts

1. Future Oak to Ninth residents are at risk of chronic and acute respiratory disease due to freeway related vehicle emissions;
2. Freeway diesel emissions result in a small increase cancer risk for project residents.
3. Project related traffic will increase cumulative air pollution exposure to residents of neighborhoods adjacent to the project, including children and the elderly.

Recommendations for Design Mitigations

1. Evaluating modifications to the project footprint to reduce the number residential dwellings within 500 of interstate I-880
2. Notifying all potential buyers that the property they are occupying has air quality risks and educate them in the proper use of any installed air filtration.
3. Requiring, as an additional condition of development, prospective monitoring of particulate matter hot spots both on the Oak to Ninth site and in neighborhoods to the east, northeast, and southeast.
4. Developing requirements for air quality mitigation measures and/or traffic demand management measures that would be triggered by local particulate matter levels that exceed California standards.
5. For residential units within 500ft of I-880:
   a. Providing residential units with individual HVAC systems in order to allow adequate ventilation with windows closed
   b. Locating air intake systems for heating, ventilation, and air conditioning (HVAC) systems as far away from existing air pollution sources as possible;
   c. Using HEPA air filters in the HVAC system and developing a maintenance plan to ensure the filtering system is properly maintained;
   d. Utilizing only fixed windows next to any existing sources of pollution.
6. Providing 110 and 220 outlets at project loading docks so that trucks can connect with these outlets to power their auxiliary equipment;
7. Utilizing only electric forklifts and landscaping equipment in the project operations and the operations of tenants
8. Requiring the transit shuttle to run at least every 30 minutes in the off-peak and every 15 minutes during peak travel times with hours that match BART’s schedule;
9. Unbundling the cost of parking from residential rents to encourage residents to reduce their car ownership rates;
10. Implementing a project-wide car share program;
11. Subsidizing transit passes to employees and residents at the project site (e.g. AC Transit's Eco-Pass program).
12. Requiring secured bicycle parking for both employees and residents;
13. Requiring commercial tenants to provide a parking cash-out program to their employees to reduce the likelihood of driving alone;
14. Providing a safe route for children living at the project to safely get to and from school by walking and bicycling.
15. Providing a safe route for walking and bicycling to area BART stations.
16. Consider reductions in regional and area wide air pollution emissions via modifications to the number and type of units below market rate.

B. Health Effects Associated with Air Quality

Numerous studies establish an association between poorer air quality and adverse health outcomes. Nationally, the motor vehicle air quality impacts result in 50 to 70 million days with restricted levels of activity, 20,000 to 46,000 cases of chronic respiratory illness, and 40,000 premature deaths.

Health related air pollutants include fine particulate matter, related to premature mortality, cardiovascular disease, and asthma, and tropospheric ozone, a respiratory irritant associated with an increase in emergency room visits for asthma and impaired development of the lungs. Motor vehicles emissions contain both diverse particulates as well as ozone precursor compounds such as nitrogen oxides ($NO_x$) and volatile organic compounds (VOC). Tropospheric ozone is formed in the atmosphere from chemical transformation of nitrogen oxides ($NO_x$) in the presence of sunlight.

The California Air Resources Board (ARB) has identified diesel engine particulate matter as a toxic air contaminant and known carcinogen. Diesel emissions have also been shown to cause coughs, headaches, lightheadedness, and nausea. Acrolein, an air pollutant found in diesel exhaust, has been shown to cause irritation to the eyes, nose, throat and lungs, thereby exacerbating asthma symptoms. Diesel particulate matter could therefore have acute short-term impacts and a disproportionate effect on sensitive receptors (such as the elderly, children, people with illnesses, or others who are especially sensitive to the effects of air pollutants).

Air pollution monitoring research has confirmed that exposure to particulate matter, nitrogen dioxide, and soot is much higher within 200 meters of freeways and other busy urban roadways. Epidemiologic studies have found consistent associations between living in proximity to a busy roadway and respiratory disease symptoms and lung function measures. The research supporting this finding includes:

- Reduced lung function in children associated with traffic density, especially trucks, within 1,000 feet and the association was strongest within 300 feet
- Increased asthma hospitalizations associated with living within 650 feet of heavy traffic and heavy truck volume.


• Increased asthma symptoms with proximity to roadways with the greatest risk within 300 feet.  
• Asthma and bronchitis symptoms in children associated with high traffic in a San Francisco Bay Area community with good overall regional air quality.  
• Increased medical visits in children living within 550 feet of heavy traffic in San Diego.

C. Existing Air Quality

Refer to the Project EIR for a discussion of the existing air quality measures in the project area.

D. Established Standards and Health Objectives

National, State, and Regional Air quality regulations and standards are described in the Project EIR.

The California Air Resource Board, *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) recommends not locating sensitive land uses, including residential developments, within 500 feet of a highway with more than 100,000 vehicles per day.

While these guidelines, do not have the authority of environmental regulations they are based on findings from extensive health research, demonstrating that proximity to high traffic density or flow results in reduced lung function and increased asthma hospitalizations, asthma symptoms, bronchitis symptoms, and medical visits. The handbook can be downloaded from ARB’s website: [http://www.arb.ca.gov/ch/landuse.htm](http://www.arb.ca.gov/ch/landuse.htm).

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8 California Environmental Protection Agency Air Resources Board Air Quality and Land Use Handbook: A Community Health Perspective May 2005.
E. Health Impact Analysis

The Oak to Ninth EIR includes an air quality analyses that addresses impact on criteria air pollution at the regional level. The EIR also includes exposure and risk analysis for diesel particulate exposure and cancer. The EIR analysis finds that that the project will have less than a significant impact on cancer risk. As discussed below, this finding is not consistent with significance thresholds provided by the Bay Area Air Quality Management District.

The environmental review for the project also did not analyze non-cancer chronic and acute health effects due to cars and trucks on I-880. Furthermore, the project did not analyze health effects from vehicle emissions on residents of Jack London Square, Chinatown, Downtown, Lower San Antonio, and around Lake Merritt.

Freeway Particulate Matter Emissions and Respiratory Disease

The CARB land use and air quality handbook bases its land use guidelines both on the long term lung cancer risks as well as short term health effects, including reduced lung function\(^9\), bronchitis, asthma, and cardiovascular mortality.\(^{10}\) These non-cancer health effects are not related exclusively to diesel exhaust particulates but also to non-diesel particulates from gasoline fueled cars and trucks.

According to the Bay Area Air Quality Management District, the highest levels of traffic related air pollutants occur during the winter.\(^{11}\) Based on a 20 year analysis of wind at Lake Merritt, wintertime winds often blow from the southeast and northwest and winds are calm over 40% of the year.\(^{12}\) Given that the I-880 freeway runs from the northwest to the southeast, one can expect that freeway related vehicle emissions will often be entrained directly over the project resulting in particulate matter and nitrogen dioxide exposures to Oak to Ninth residents.

The environmental review of the Oak to Ninth Project did not include particulate matter measurements on the parcels with planned residential development. Given that average daily traffic on I-880 is in excess of a quarter of a million vehicles with over 18,000 vehicles during the peak hour, we expect particulate matter levels injurious to health in locations proximate to this roadway.

Given limited time and resources this HIA could not conduct adequate field measures of air pollutants on the project site or quantify health effects. **Nevertheless, based on evidence in the CARB guidelines, residents living within 500 feet of I-880, should be expected to experience adverse health on lung function, increased asthma and bronchitis symptoms, medical visits, and asthma hospitalizations. The project results in these increased health risks for residents of the 1400 future dwellings proposed for parcels A, F, G, K, and M.**

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\(^{10}\) Peters, A , et al, “Increased particulate air pollution and the triggering of myocardial infarction.” Circulation, 103:2820-2815 (2001)


Roadway emissions and health effects in adjacent neighborhoods
The development of the Oak-to-Ninth Avenue Project, which includes 3100 residential units and 3500 parking spaces, will result in an additional 27,110 daily vehicle trips external to the project. The project will thus have cumulative air quality impacts from project operations and air quality impacts on adjacent neighborhoods as well. The EIR found that the project had significant impacts on criteria air pollutants at the regional level. The environmental analysis did not evaluate vehicle-related particulate matter effects on residents of Jack London Square, Chinatown, Downtown, Lower San Antonio, and around Lake Merritt. Traffic volume increases of 11% in surrounding neighborhoods will also increase exposure to particulate matter for residents and workers in these areas. Sensitive receptors (for air quality impacts) reside in these areas including, the elderly, young children, and people with pre-existing illnesses, and people performing strenuous work outdoors. Given limited resources, this analysis could not measure or estimate current or expected air pollutant levels in neighborhoods adjacent to the project.

Freeway Emissions and Cancer Risks
The Oak to Ninth DEIR states on page IV.C-24 that the incremental cancer risk from exposure to freeway emissions would range from 15 to 30 in a million people. It goes on to state on page IV.C-25 that the total cumulative risk from diesel particulate matter could range from 315 to 330 in a million when background emissions and freeway emissions are combined. The DEIR states on page IV.C-25 that “there are no specific recommendations on acceptable cancer risks from operations not related to on a land use.” The District does have thresholds of significance for toxic air contaminants, of which diesel PM is one, in the BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans (1999). These guidelines state that a project would result in a significant impact if the “probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million.” It appears that this project could result in potential risk that exceeds the District’s significance thresholds and could result in a significant impact.

F. Recommendations for Design and Mitigations
Developing residential uses on infill sites is challenging; still it is necessary to choose sites in the Bay Area that do not pose an elevated risk to human health for future residents. Based on a full analysis of air quality health effects on current and future area residents the project should plan, engineer, design, and build the new development in such a manner that mitigates air quality and noise exposures. Essential air quality mitigation measures appropriate for this project include

1. Evaluating modifications to the project footprint to reduce the number residential dwellings within 500 feet of interstate I-880
2. Notifying all potential buyers that the property they are occupying has air quality risks and educate them in the proper use of any installed air filtration.
3. Requiring, as an additional condition of development, prospective monitoring of particulate matter hot spots both on the Oak to Ninth site and in neighborhoods to the east, northeast, and southeast.
4. Developing requirements for air quality mitigation measures and / or traffic demand management measures that would be triggered by local particulate matter levels that exceed California standards.
If development proceeds within 500 feet, Residential uses should incorporate all feasible mitigation measures to reduce the health impacts to new project residents. These measures to reduce pollutant emissions for residents in proximity to I-880 should include:

1. Providing residential units with individual HVAC systems in order to allow adequate ventilation with windows closed
2. Locating air intake systems for heating, ventilation, and air conditioning (HVAC) systems as far away from existing air pollution sources as possible;
3. Using HEPA air filters in the HVAC system and developing a maintenance plan to ensure the filtering system is properly maintained;
4. Utilizing only fixed windows next to any existing sources of pollution.

The project could employ a number of potentially feasible additional design changes to reduce air pollution emissions to residents of surrounding neighborhoods and the region. Additional measures to further reduce the project’s significant air quality impacts include:

1. Providing 110 and 220 outlets at project loading docks so that trucks can connect with these outlets to power their auxiliary equipment;
2. Utilizing only electric forklifts and landscaping equipment in the project operations and the operations of tenants;
3. Requiring the transit shuttle to run at least every 30 minutes in the off-peak and every 15 minutes during peak travel times with hours that match BART’s schedule;
4. Unbundling the cost of parking from residential rents to encourage residents to reduce their car ownership rates;
5. Implementing a carshare program;
6. Subsidizing transit passes to employees and residents at the project site (e.g. AC Transit’s EcoPass program).
7. Requiring secured bicycle parking for both employees and residents;
8. Requiring commercial tenants to provide a parking cash-out program to their employees to reduce the likelihood of driving alone;
9. Providing a safe route for children living at the project can safely get to and from school by walking and bicycling;
10. Providing a safe route for walking and bicycling to area BART stations.

G. Mitigation of Adverse Air Quality Impacts through Housing Diversity

An additional approach to reducing regional and area wide air pollution emissions from this project is via modifications to the number and type of units below market rate. The relationship between housing affordability and vehicle trips is mediated through relationships among household income, vehicle ownership, and vehicle driving. Abundant evidence in the transportation and planning research literature has documented this relationship. Specific to the Bay Area, the MTC quantified the relationship between household income, travel behavior, and vehicle trips based on results from their Bay Area Travel Survey. In the Bay Area, there is a very strong relationship between household income and vehicle trip generation. Households in the highest income quartile generate almost 4 more vehicle trips per day (160 percent increase) than those in the lowest quartile.
The relationship between household income and vehicle trips suggests that variants of project design with greater affordability would be a mechanism by which the project could generate fewer vehicle trips and consequently fewer environmental impacts indirectly related to vehicle trips. The table below provides an illustration of this relationship based on three scenarios:

- Project as currently proposed with housing affordable only to those making greater than the median income;
- Project meeting minimum redevelopment area requirements for housing affordability with 15% of units affordable to those making less than the median income;
- Project with housing affordability in balance with the regional distribution of household income.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Housing Affordable to Each Household Income Quartile</th>
<th>Weekday Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
</tr>
<tr>
<td>Market Rate (Current Project)</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Min Affordability Requirements</td>
<td>6.0%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Regionally Balanced</td>
<td>16.0%</td>
<td>30.6%</td>
</tr>
</tbody>
</table>

Based on MTC data, relative to the project as proposed, a modified design with minimum Redevelopment Area affordability requirements would generate 1113 fewer weekday vehicle trips. A design which balances affordability relative to regional household incomes would produce 3426 fewer vehicle trips.

The California Air Resources Board (CARB) developed the "Urban Emissions Model" (URBEMIS) to assist local public agencies with estimating air quality impacts from land use projects when preparing a CEQA environmental analysis. The model is situated in a user-friendly computer program that estimates construction, area source, and operational air pollution emissions from a wide variety of land use development projects in California. The model further estimates emission reductions associated with specific mitigation measures including transportation demand reduction measures and affordable housing.

This analysis applied the URBEMIS model to the Oak to Ninth project and found that the emission estimates were mitigated by increasing the proportion of below market rate (BMR) housing (See table below). We used the following land use inputs: (1) 3100 condo/townhouse high rise, (2) 170,000 sq. feet regional retail, (3) 30,000 sq. feet supermarket; (4) 28.4 acres city park. Operational emission sources

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13 Median Household income is defined as $60,000 in order to be consistent with the quartiles of income used in the MTC Bay Area Travel Survey.
were set at default with temperature site specific and target year 2025. We varied the proportion of BMR units between 0 and 50%.

**OPERATIONAL (VEHICLE) EMISSION ESTIMATES (lbs/day)**

<table>
<thead>
<tr>
<th></th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>PM10</th>
</tr>
</thead>
<tbody>
<tr>
<td>unmitigated</td>
<td>64.80</td>
<td>46.97</td>
<td>539.25</td>
<td>1.29</td>
<td>194.36</td>
</tr>
<tr>
<td>BMR 15%</td>
<td>64.42</td>
<td>46.57</td>
<td>534.53</td>
<td>1.27</td>
<td>192.62</td>
</tr>
<tr>
<td>BMR 25%</td>
<td>64.16</td>
<td>46.30</td>
<td>531.37</td>
<td>1.27</td>
<td>191.47</td>
</tr>
<tr>
<td>BMR 50%</td>
<td>63.51</td>
<td>45.63</td>
<td>523.49</td>
<td>1.25</td>
<td>188.58</td>
</tr>
</tbody>
</table>

It is important to note that the URBEMIS model provides very conservative estimates of the effect of greater affordability on reduced air emissions, and we believe the above estimates likely underestimate the beneficial effect of affordability. The URBEMIS model assumes a 4% reduction in vehicle trips for each deed-restricted below market rate housing unit. The 4% reduction parameter is significantly less than the three fold difference in vehicle trip generation between households in the lowest and highest income quartiles in the Bay Area Region based on regional travel survey data. The URBEMIS parameter may reflect differences in the income—vehicle trips relationship between the Bay Area and the rest of the State of California. While this analysis provides sufficient evidence for an effect of affordability on air emissions, modifying this parameter using location specific analysis would provide a more precise estimate of effect.

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Figure AQ-1. California Air Resources Board 500 ft Buffer from I-880 freeway
Oak to Ninth Avenue
Health Impact Assessment

Chapter 7
Community Noise
A. Summary

The Development of the Oak to Ninth Project will result in exposure to future residents of high levels of community noise. Parcels A, F, G, K, and M, closest to the freeway, have background noise levels currently over Ldn 70 dBA, and residential uses at these levels are considered normally unacceptable to clearly unacceptable based upon the Oakland General Plan. In addition they are subjected to numerous short term railroad horn noise exposures at the 5th Street railroad crossing. The USEPA estimates that these unmitigated noise levels will result in community reactions ranging from threats of legal action to vigorous protest and may result in elevated blood pressure, circulatory disease, ulcer, colitis, and sleep deprivation. Implementation and evaluation of a comprehensive set of indoor and outdoor noise mitigations should be required as a condition of development.

Health Impacts

1. Regardless of the feasibility and effectiveness of indoor noise mitigations, some project residents are likely to be exposed to environmental noise to an extent that can create annoyance and adversely affect school and work performance.

2. Without mitigations, we estimate 53% of residents in dwellings adjacent to the railway line will experience sleep disturbance; even with a highly effective noise mitigation program capable of reducing noise by 50dB, 7% of residents would experience sleep disturbance.

3. Existing project area outdoor noise levels of greater than 70 dB will prevent normal voice level communication at unprotected exterior locations.

4. Plans under consideration for development of affordable housing include locating below market rate housing on project area parcels with the highest levels of noise create an adverse environmental justice impact.

Recommendations for Design and Mitigation

1. Reduce the speeds of the traffic on the Embarcadero and project’s residential streets.

2. Notify all potential buyers that the property they are occupying has noise risks.

3. Installation of noise-insulating windows, exterior doors and walls, and individual HVAC system

4. Design units exposed to high noise levels with interior courtyards and patios that open into acoustically protected and shielded areas.

5. Require, as a condition of development, all feasible traffic demand management actions.

6. Integrate below market and market rate units in the same buildings to prevent environmental justice impacts.
B. Background: Noise and Health Impacts

Long term exposure to moderate levels of environmental noise can adversely affect sleep, school and work performance, and cardiovascular disease. The health impacts of environmental noise depend on the intensity of noise, on the duration of exposure, and the context of exposure. For example, the World Health Organization noise exposure thresholds are much lower threshold for levels inside (30 dB) and outside (45 dB) homes than for commercial (70 dB) and other public areas.

Noise affects sleep both by waking people up and reducing the quality of sleep. A 10 dB change is generally perceived by the human ear as a doubling of noise. According to the WHO, reductions of noise by 6-14 dBA result in subjective and objective improvements in sleep. Environmental noise is a risk factor for cardiovascular disease. Chronic road noise can affect cognitive performance of children including difficulty keeping attention, concentrating and remembering, poorer reading ability, and poorer discrimination between sounds. The combination of noise and poor quality housing can have additive effects. In one study, a combination of these factors was associated with higher stress and stress hormone levels.

A comprehensive synthesis of the noise health effects and control is contained in the World Health Organization’s Guidelines for Community Noise.

<table>
<thead>
<tr>
<th>Determinants of Urban Noise</th>
<th>Health Effects</th>
<th>Modifying Factors</th>
<th>Mitigations</th>
</tr>
</thead>
</table>

C. Established Standards and Health Objectives

The Oakland General Plan Noise Element, adopted in 2005, provides guidelines for assessing compatibility between various land uses and ambient levels of noise. With regards to residential uses, Oakland General Plan Noise Element’s Land Use Compatibility Chart considers residential uses “normally acceptable” if the Ldn is less than 60 dB. Residential uses are conditionally acceptable if the Ldn is between 60 and 70 dB but development requires noise analysis and mitigation. Residential uses are normally unacceptable at levels over 70dB and the General Plan proscribes residential uses as “clearly unacceptable” where noise levels are greater than 75 dB Ldn, stating that such “development should not be undertaken”.

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4 Available at: [http://www.who.int/docstore/peh/noise/guidelines2.html](http://www.who.int/docstore/peh/noise/guidelines2.html)
Title 24 of the California Code of Regulations provides for noise insulation standards for residential buildings. The code requires an acoustical study whenever a residential building is proposed near an exiting or planned freeway, major roadway, rail line, or industrial noise source and where those noise sources cumulatively produce an outdoor Ldn of 60 dB or higher. Residences must be designed to limit interior noise to no more than a Ldn of 45 dB.

**D. Noise Conditions at the Project**

Standard methods exist to measures environmental noise and to predict changes in noise based on changes in vehicle traffic. The Oak to Ninth Project’s DEIR contained both field measurements of noise and a forecasting analysis predicting the changes in noise due to the project. Table IV.G-3 describes both long and short term measures at 23 locations on the project taken in 2002 by Charles M. Salter Associates measured long term environmental noise levels on parcels A, G, F, K, and M which are situated adjacent to the Embarcadero are very loud, with long term measures generally above 70 dB and above 75 Ldn at many measurement points (DEIR IV.G-11) These high noise levels can be attributed primarily to the parcels’ location in close proximity to I-880 and the adjacent railway corridor. Correspondingly, measured noise levels attenuate with distance from the freeway.

**E. Project Health Impacts**

Land use development may increase the exposure to environmental noise in several ways: (1) creating new uses that produce noise (e.g., factories); (2) construction; (3) increasing vehicle trips; and (4) bringing people in proximity to sources of noise. The project EIR concluded that the project would cause significant environmental impacts by developing a new residential uses in an area with high ambient noise levels.
Effects on overall health and well-being
The USEPA estimates that these unmitigated noise levels will result in community reactions ranging from threats of legal action to vigorous protest.\textsuperscript{5} This level of annoyance is directly related to several health effects associated with noise induced stress response, including: elevated blood pressure, circulatory disease, ulcer, and colitis. Regardless of the ultimate feasibility and effectiveness of indoor noise mitigations, some project residents are likely to be exposed to environmental noise to an extent that can adversely affect subjective well-being and school and work performance.

Effects on sleep disturbance
The DEIR failed to directly evaluate train horn noise and its potential affect upon sleep disturbance. The Federal Railroad Administration has determined the average train horn creates a single event level of 107 SEL at 100 feet.\textsuperscript{6} The Oak to Ninth DEIR states that in excess of 40 trains per day will cross the 5\textsuperscript{th} Avenue railroad crossing resulting in exposures in excess of 103 SEL at parcels K and M. With windows open the exterior to interior building attenuation will be about 10 dBA resulting in an interior noise level of approximately 93 SEL. The U.S. Federal Interagency Committee on Noise has found that the relationship between sleep disturbance and noise is as follows:\textsuperscript{7}

\[
\%\text{Awakening} = (7.079 \times 10^{-6}) \times \text{SEL}^{3.496}
\]

Without noise mitigations, we estimated that approximately 53\% of the exposed population would be awakened. However, if acoustical insulation and HVAC were included in the design sufficient to reduce noise 50 dBA, we estimate a SEL of 53 dBA and a percent awakening of 7 percent.

Effects on speech
Existing project area outdoor noise levels of greater than 70 dB will prevent normal voice level communication at unprotected exterior locations.\textsuperscript{8}

Environmental justice impacts
Project plans under consideration for development of affordable housing include locating below market rate housing on project area parcels with the highest levels of noise. Members of low income households may be more sensitive to the health and developmental impacts of high environmental noise levels. The construction of BMR units on high noise parcels creates adverse environmental justice impacts.

F. Recommendations for Design and Mitigation
California law requires the construction of dwellings include noise mitigation; however, these standards only affect indoor noise exposure. Other measures that might affect ambient noise include (1) Re-engineering, reducing or altering timing of automobile and truck traffic on routes; (2) Requiring noise controls on indoor and outdoor commercial equipment; (3) Re-orienting buildings in ways that create sound buffers for outdoor spaces; (4) Reductions in vehicle speeds. The Project EIR concludes that full

\textsuperscript{6} \texttt{http://www.fra.dot.gov/us/content/1174}
\textsuperscript{7} \texttt{http://www.fican.org/pdf/nai-8-92.pdf}
\textsuperscript{8} \textit{ibid.}, p. 4-4, \texttt{http://www.nonoise.org/library/handbook/handbook.htm}
mitigation, for instance via the construction of sound barrier walls is not possible due to the height of the proposed residential towers. The following are recommended actions to reduce project resident exposure to noise.

- Reduce the speeds of the traffic on the Embarcadero and project’s residential streets through traffic calming measures.
- Require, as a condition of development, all feasible traffic demand management actions, including shuttle service to BART at frequency of no less than every 15 minutes, a pedestrian and bike pathway connecting development to the BART and surrounding neighborhoods, and greater affordable housing.
- Notify all potential buyers that the property they are occupying has significant noise risks.
- Construction standards required to meet Title 24 noise insulation requirements requiring the use of noise-insulating windows, acoustical exterior doors and walls would also be appropriate mitigations.
- Design units exposed to high noise levels with interior courtyards and patios that open into acoustically protected and shielded areas.
- Integrate below market and market rate units in the same buildings to prevent environmental justice impacts.
- Consider modifying the layout of the project in a way that places a multilevel parking structure to serve as an acoustical barrier between the residences and the freeway.