Built Environment Meta-Analysis for Oakland, California

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Prepared for the HOPE Collaborative
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in collaboration with
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Table of Contents

Executive Summary

Oakland planners, public health officials, and a variety of consultants and community-based organizations are increasingly converging on ways to promote public health through urban design and development policy. In recent years, various organizations and City agencies have commissioned studies that include useful analyses for understanding how Oakland's built environment affects the health of neighborhood residents.

Bay Area Economics (BAE), in collaboration with Public Health Law & Policy (PHLP), developed this Built Environment Meta-Analysis to provide members of the HOPE Collaborative with a framework for better understanding how future public policy and community-driven strategies can further promote health. Reports conducted in Oakland over the last five years were analyzed in the following categories related to the built environment: **public safety and crime prevention**, **neighborhood quality parks and open space**, **transportation and transit**, and **youth and families**.

Major findings from the meta-analysis include:

- **Nearly all of the studies involved some degree of community participation.** This indicates that researchers are attempting to reflect community members' concerns regarding the quality of their neighborhoods and desire for change.
- **The presence of crime in many Oakland neighborhoods creates significant barriers to using the built environment for physical activity and plan, and creating a community "sense of place."** A widespread fear of crime keeps people from actively enjoying public spaces, and it deters businesses and Oakland residents from locating in certain neighborhoods.
- **The principles of Crime Prevention Through Environmental Design (CPTED) are popular among both urban designers and crime prevention experts.** Advocating for City financing or requirements for design strategies like CPTED that would make places less appealing to offenders is a promising strategy to help improve public safety and use of parks, open spaces, and neighborhood public spaces.
- **Historic land use designations impose challenges on current efforts to reshape the built environment.** Although mixed-use development has been encouraged in some areas in Oakland, findings from the assessments and interviews show that urban planners and residents desire more integrated neighborhood design throughout Oakland.
- **There is significant potential within Oakland to create additional parks and open spaces in the form of rooftops, remediated brownfields, vacant lots, medians, and other spaces.** Parks and open spaces are viewed as positive amenities that should be more prevalent and well maintained.
- **High quality transit services are an important contribution to health and neighborhood vitality in Oakland**. Barriers to adequate transportation can limit access to health care, nutritious food, and physical activity for residents in low-income communities.
- **Increasing pedestrian and bicycle network connections is a major concern.** Such connections would facilitate social interaction, provide families with opportunities for more physical activity, and could reduce vehicle emissions if residents opt to walk or bike to destinations instead of driving.
- **Planning for new housing must include an examination of the capacity of nearby schools and child care to accommodate the growing number of new students.** Gyms,

athletic fields, playgrounds, equipment, and other assets should be secured to ensure that children are able to participate in physical activity at school.

For a more complete summary of the findings and recommendations explored in this meta-analysis, see Table 4 in Section VII of this report, which includes guidance for further research and action targeted to the built environment. We have compiled these findings to help build the HOPE Collaborative's capacity to promote lasting change that will expand Oakland residents' access to safe places to play and be physically active in their own neighborhoods.

I. Introduction

While the professional fields of "public health" and "urban planning" share a common history in efforts to improve health and living conditions for urban dwellers at the turn of the 1900's, the fields have been largely separated until recently. In Oakland as well as other communities across the country, urban planners and public health experts have come together again to integrate their practice and develop new principles under a broader vision for creating healthy, vibrant communities. Planners, public health officials, and a variety of consultants and community-based organizations are increasingly converging around ideas about how to encourage and embrace urban design and development policy that promotes desirable public health outcomes.

Various organizations and City agencies have commissioned studies in Oakland that either implicitly connect design, development, and health or that include useful analyses for understanding how the City's built environment affects the health of neighborhood residents now and into the future. The purpose of the Built Environment (BE) Meta-Analysis is to provide the HOPE Collaborative with a framework for understanding the results of these studies and examining potential systems change opportunities that can be further developed. The meta-analysis is designed to:

- Provide meaningful information about what is already known about the condition of neighborhood infrastructure that promotes physical activity and offer safe places to play (such as parks, transit, and open spaces)
- Identify where studies provide common recommendations for further action
- Clarify the issues or subjects about which additional analysis may be needed

Through its review of published studies and stakeholder interviews, the Built Environment Meta-Analysis is intended to assist the HOPE Collaborative in moving concepts to action, either through policy or additional study.

Note that the BE Meta-Analysis is one of a series of three papers applying the meta-analysis methodology to topics of interest to the HOPE Collaborative. The other two—a *Local Sustainable Economic Development Meta-Analysis* and a *Food System Meta-Analysis*—complement and reference this paper.

How to read the Built Environment Meta-Analysis
The HOPE Collaborative has asked for a report that summarizes key information types across food system-relevant assessments. These information types include:

- **Indicators, variables or factors** addressed by the assessment;
- **Methodology** used to measure those indicators, variables or factors;
- **Geographic areas** within Oakland covered by the assessment;
- **Findings** of the assessment; and
- **Conclusions and recommendations** resulting from the assessment.

This report is organized to provide a clear, cross-cutting analysis of each of these issues:

Section I. Introduction provides background on the HOPE Collaborative and the goals of the meta-analysis.

Section II. Definition of the Built Environment and Public Health provides context for these two concepts throughout the report.

Section III. Methodology describes how the meta-analysis was conducted and the unique analysis process that was developed to guide it.

Section IV. Overview of Studies Analyzed provides a discussion of cross-cutting issues across all assessments, including **assessment type** and **community participation in assessments**.

Section V. Findings: Themes, Recommendations and Information Gaps provides an overview of built environment themes**,** after which each category is addressed individually.

Section VI: Interview Observations and Recommendations presents themes and observations from a series of interviews from public, private, philanthropic, and nonprofit perspectives on local action around the built environment and health, and promising directions for future efforts.

Section VII: Conclusion and Recommendations summarizes major findings from across the meta-analysis and provides recommendations for next steps.

It is worth noting that the **Appendices** of this report contain a great deal of rich information for further reading. Each assessment, in its analyzed form, is available for review in *Appendix A: Assessment Summaries*. Indicators, summarized across assessments, are presented in *Appendix B: Indicators and Themes***.** A list of interviewees and the interview protocol (*Appendix C*) and a full bibliography (*Appendix D*) is also included.

Relevance to HOPE Collaborative Goals, Planning, and Implementation
The HOPE Collaborative is a major collaborative project with the goal of improving equitable access to local food; improving the safety and attractiveness of the built environment; promoting local, sustainable economic development; and supporting families and youth. The vision of the HOPE Collaborative is to "create fundamental and sustainable environmental changes that will significantly improve the health and wellness of Oakland residents." During the current work phase, the HOPE Collaborative is charged with creating a Community Action Plan to guide its efforts, pending further funding from the W.K. Kellogg Foundation for implementation.

In order to engage its members in creating the Community Action Plan, the HOPE Collaborative has organized action teams focused on four key areas: Food Systems, Local Sustainable

Economic Development, Built Environment, and Families & Youth. While the results of this LSED meta-analysis will provide information relevant to all four action teams, it primarily serves to advance the goals of the Built Environment Action Team.

The goals of the Built Environment Action Team are to identify programs and services that utilize the built environment to enable social interaction and community involvement in physical activities that are easily accessible in all local neighborhoods. Where effective and beneficial efforts are identified, the Built Environment Action Team will determine the feasibility of expanding these efforts in scale and scope. The Action Team has set out the following tasks to accomplish these goals:

- *Conduct assessments to identify availability of safe places for physical activity and play; alternative non-motorized transportation to increase walking and biking, access and availability of parks, community, and school facilities; and community design opportunities that promote increased physical activity and play.*
- *Identify indicators of the potential for increasing access to safe physical (built and natural) environments.*
- *Develop action plans that include environmental and systems change strategies which will provide safe places for physical activity and play and identify methods to track progress in achieving these changes. These may include resources, community design practices, regulations, and zoning.*

The BE Meta-Analysis will help the Built Environment Action Team understand the existing conditions of Oakland's city planning, design, and development efforts as it relates to residents' public health, identify potential indicators to measure change, and recommend potential policy and systems change strategies to expand effective or promising efforts that encourage healthy activities in Oakland's underserved neighborhoods. The results of the BE meta-analysis—along with other surveys, studies, and assessments that the HOPE Collaborative has commissioned—will be included in the Community Action Plan.

Meta-Analysis Study Area

The goals and actions of the Hope Collaborative focus on areas in the City of Oakland suffering the greatest impacts of health disparities. These neighborhoods, often described as "the flatlands," are located west of Interstate 580 along the entire length of Oakland, from Berkeley in the north to San Leandro in the south. They are home to about 266,000 multi-racial and multi-ethnic people, mostly low-income, who suffer disproportionate health impacts stemming from a variety of built environment, social, economic, and institutional factors.[1] The BE Meta-Analysis has selected assessments and studies that are geographically focused on these neighborhoods or that include analysis of direct relevance them.

[1] HOPE Collaborative. *HOPE Meta-Analysis Request for Proposals.* February 14, 2008. (Summary)

II. Definition of the Built Environment and Public Health

The National Institutes of Health (NIH) definition of the *built environment* is used for the purposes of this meta-analysis. The NIH defines the built environment as:

> … [E]ncompassing all buildings, spaces and products that are created, or modified, by people. It includes homes, schools, workplaces, parks/recreation areas, greenways, business areas and transportation systems. It extends overhead in the form of electric transmission lines, underground in the form of waste disposal sites and subway trains, and across the country in the form of highways. It includes land-use planning and policies that impact our communities in urban, rural and suburban areas.[2]

The United Nations World Health Organization (WHO) definition of *public health* is used for the purposes of this meta-analysis. The WHO defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."[3]

[2] More information is available at: http://grants.nih.gov/grants/guide/rfa-files/rfa-es-04-003.html.
[3] More information is available at: http://en.wikipedia.org/wiki/Public_health.

III. Methodology

Issues of public health and the built environment encompass a broad scope of concerns, from clean air and a healthy environment, access to food and parks, and pedestrian and bicycle safety to crime prevention and alcohol and drug abuse. In addition, the cross-sector interests of the Built Environment Action Team (including public safety, neighborhood planning, and transit and transportation) necessitated a broad search for relevant studies.

Assessment Review

To capture the extent to which studies focus on both the built environment and public health, this meta-analysis includes a wide range of studies that draw from a multitude of indicators. The following five categories of studies are included:

1. Public Safety and Crime Prevention
2. Neighborhood Quality
3. Parks and Open Space
4. Transportation and Transit
5. Youth and Families

Within each category, we inventoried the indicators, variables, factors, findings, and recommendations of each study. Each study uses a unique methodology and seeks to achieve a distinct set of goals. The meta-analysis compares studies within their given category and when relevant draws on common and distinct themes across categories. While each study has its own message to deliver, none of the information contained within them is in explicit disagreement with each other – in fact, they often reached similar conclusions and recommendations.

One goal of the meta-analysis is to identify information "gaps" with respect to built environment issues and opportunities for improved public health in Oakland's low-income communities. These "gaps" are discussed following the comparison of studies under each category.

Appendix D contains a complete bibliography of studies. *Appendix A* contains a unique analysis of each study. *Appendix B* includes a matrix inventory of indicators, with each indicator corresponding to the study or studies from which they were identified.

Key Stakeholder Interviews

In addition to analyzing studies, BAE staff conducted five interviews with people representing the public, private, and nonprofit sectors, each with a unique perspective in terms of how their work relates to the Oakland's built environment and public health.

Relevant findings from the interviews are reflected in Section VI. Interview Observations and Recommendations. *Appendix C* contains a complete list of interviewees the interview protocol.

IV. Overview of the Studies Analyzed

The studies listed in the following table addressed one or more areas of public health and the built environment, were geographically relevant to Oakland, and were the most recent or up-to-date examples of studies of their kind. Detailed analysis of each study, including key findings, methodologies, and recommendations, may be found in *Appendix A*. A complete bibliography of all studies and assessments identified, including those not analyzed here, can be found in *Appendix D*.

Table 1. Assessment List

Public Safety and Crime Prevention		
Study 1	*Mac Arthur BART Transit Village Health Impact Assessment: Chapter 10 Community Violence (DRAFT)*	2007
Study 2	*The Good, the Bad, and the Ugly: A Report and Recommendations Regarding a Report Card on Oakland's Liquor Stores*	2004
Neighborhood Quality		
Study 3	*Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4 Retail Services (DRAFT)*	2007
Study 4	*Neighborhood Knowledge for Change, the West Oakland Environmental Indicators Project*	2002
Study 5	*23rd Avenue Community Action Plan*	2005
Parks and Open Space		
Study 6	*Tapping the Potential of Urban Rooftops: Rooftop Resources Neighborhood Assessment*	2007
Study 7	*Groundwork Oakland Feasibility Study and Strategic Plan (Draft)*	2006
Study 8	*Oak to Ninth Avenue Health Impact Assessment Chapter 3: Parks and Natural Spaces (Draft)*	2006
Study 9	*The East Bay Greenway Health Impact Assessment*	2007
Transportation and Transit		
Study 10	*Mac Arthur BART Transit Village Health Impact Assessment: Chapter 3 Transportation (DRAFT)*	2007
Study 11	*West Oakland Community-Based Transportation Plan*	2006
Study 12	*Central and East Oakland Community-Based Transportation*	2002
Study 13	*Plan Roadblocks to Health: Transportation Barriers to Healthy Communities.*	2007
Youth and Families		
Study 14	*Mac Arthur BART Transit Village Health Impact Assessment: Chapter 11 Social Cohesion and Social Exclusion (DRAFT)*	2007
Study 15	*Mac Arthur BART Transit Village Health Impact Assessment: Chapter 5 Schools and Child Care (DRAFT)*	2007

Categorizing Assessments

To better understand the goals, methods, and focus of each assessment, a general category was assigned to each. The following table indicates which of the 16 assessments identified in Table 1 fit into each category, explains the intent or design of each type, and describes the focus of the conclusions.

Table 2. Assessment Types

Assessment Type	*Intent / Design*	*Conclusions / Recommendations*
Health Impact Assessment (HIA) (***Studies #1, #3, #8, #9, #10, #14, #15***)	▪ Follows a standard HIA methodology for each area of concern. ▪ Primarily uses secondary data and anecdotal information to build understanding of issue area and indicators of concern. ▪ Assesses indicators of concern as they relate to proposed project area.	Identifies health impacts of proposed project. Recommends ways to secure positive health impacts and mitigate negative ones.
Community-Based Plan (***Studies #5, #11, #12***)	▪ Identifies stakeholders whose input will affect implementation of the plan (e.g. community members, city and regional agencies, etc.) ▪ Relies on community meetings and survey results to articulate plan.	Identification of neighborhood planning needs.
City Staff Report (***Study #2***)	▪ Report to City Council regarding current conditions of liquor store-related crime.	"Report Card" ratings on liquor stores. Enforce existing ordinance and regulations to mitigate liquor store-related crime.
Feasibility Assessment (***Studies #6, #7***)	▪ Evaluation of opportunity for increased open space and roof top greening.	Provides example programs/prototypes.
Neighborhood Conditions Inventory (***Studies #4, #13***)	▪ Community identification of neighborhood indicators; designed to measure impacts on neighborhood. ▪ Identification of transportation barriers and impacts on community health.	Identification of neighborhood planning needs.

It is important to consider the intent and methodology of each assessment when drawing conclusions about general findings and recommendations. Many of the assessments analyzed had a relatively narrow scope and intent; their findings reflect this. Some had no recommendations; this is likely more a reflection of the studies' intent (perhaps only to provide data or information) than an inherent deficit in the study itself. Additional discussion of common recommendations and conclusions can be found in Section VII of this report.

Community Participation in Assessments

The extent to which youth and community residents participated in assessments varied. To evaluate the degree of community participation involved in each assessment, BAE adapted a concept based on Community-Based Participatory Research (CBPR),[4] which qualifies community participation on a continuum of potential engagement. For this meta-analysis, BAE gauged community participation using four qualities to describe the degree to which research included input from community members:

- *Unilateral*: Researchers set the agenda and hold control over design without input from community members
- *Collaborative*: More than one organization has a consultative role
- *Participatory*: Community members have consultative roles
- *Democratic*: Requires all partners to use a participatory decision-making process and equity in representation

Figure 1. Research for Health: A Relationship Continuum[5]

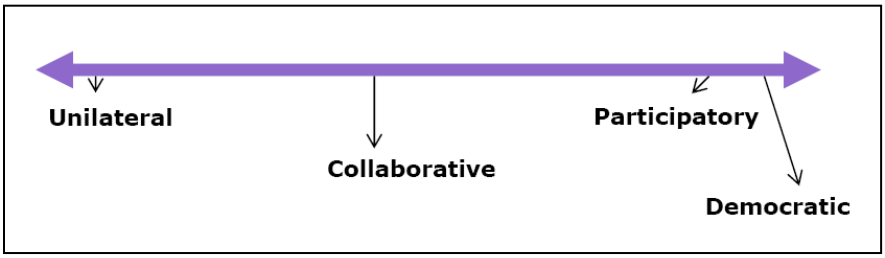

Table 3 below indicates quality of community participation involved in each assessment. (The assessments are grouped into categories according to the theme of their findings.) As shown, most of the assessments involved some degree of community participation.

Table 3. Quality of Community Participation

Public Safety and Crime Prevention	
Mac Arthur BART Transit Village Health Impact Assessment: Chapter 10 Community Violence (DRAFT)	**Unilateral:** The MBTV HIA team interviewed area residents and businesses for certain chapters of the HIA. However, this chapter did not evidence engagement with the community.
The Good, the Bad, and the Ugly: A Report and Recommendations Regarding a Report Card on Oakland's Liquor Stores	**Collaborative and Participatory:** Authors of the study attended over 200 community meetings to gauged concern over this topic based on input from these meetings. In addition, they worked with community members and 100 store owners to implement crime mitigation measures.
Neighborhood Quality	
Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4 Retail Services (DRAFT)	**Participatory:** Researcher surveyed local residents on what kind of community center they would use.

[4] Ritas C. *Speaking Truth, Creating Power: A Guide to Policy Work for Community-Based Participatory Research Practitioners.* July 2003. Available at: http://depts.washington.edu/ccph/pdf_files/ritas.pdf.
[5] *Id.*

Neighborhood Knowledge for Change, the West Oakland Environmental Indicators Project	**Participatory:** This study was designed to support a community-driven process in which a neighborhood task force identified areas for research.
23rd Avenue Community Action Plan	**Participatory:** More than 250 residents and merchants collaborated to articulate this plan through large community workshops and focus groups.
Parks and Open Space	
Tapping the Potential of Urban Rooftops: Rooftop Resources Neighborhood Assessment	**Collaborative:** Authors consulted with experts from neighborhood organizations.
Groundwork Oakland Feasibility Study and Strategic Plan (Draft)	**Collaborative and Participatory:** This study included online survey and interviews with 20 stakeholders, and four exploratory meeting with organizations working on parks and open space.
Oak to Ninth Avenue Health Impact Assessment Chapter 3: Parks and Natural Spaces (Draft)	**Collaborative and Participatory:** HIA researchers conducted interviews with key stakeholders and solicited public comments on a draft of the assessment from the developer of the project
The East Bay Greenway Health Impact Assessment	**Semi-Collaborative:** HIA researches solicited input from local planning experts for scoping of the assessment.
Transportation and Transit	
Mac Arthur BART Transit Village Health Impact Assessment: Chapter 3 Transportation (DRAFT)	**Semi-Participatory:** HIA researchers surveyed residents on preferred mode of transportation.
West Oakland Community-Based Transportation Plan	**Participatory:** Researchers worked with high school students to survey area residents. In addition, researchers held community discussion groups to generate ideas on needs and solutions.
Central and East Oakland Community-Based Transportation Plan	**Collaborative and Participatory:** Researchers worked with community-based organizations, transit agency representatives, and City staff, which provided input on community outreach, project design, and implementation strategies. They surveyed 1,462 Central and East Oakland residents on their transportation needs and potential solutions to address these needs.
Roadblocks to Health: Transportation Barriers to Healthy Communities.	**Collaborative and Participatory:** Researchers developed partnerships with local organizations to conduct 699 community surveys.
Youth and Families	
Mac Arthur BART Transit Village Health Impact Assessment: Chapter 11 Social Cohesion and Social Exclusion (DRAFT)	**Participatory:** Researcher surveyed local residents on what kind of community center they would use.
Mac Arthur BART Transit Village Health Impact Assessment: Chapter 5 Schools and Child Care (DRAFT)	**Unilateral:** The MBTV HIA team interviewed area residents and businesses for certain chapters of the HIA. However, this chapter did not evidence engagement with the community.

V. Findings: Themes, Recommendations, and Information Gaps

Public Safety and Crime Prevention

Themes

Assessments that covered the topic of public safety and crime prevention addressed indicators that reflect both the quality of the physical and built environment and human dynamics such as social capital and incidents of crime. Among many of the assessments and the meta-analysis interviews, there was a general concern about crime. In seven of the 16 studies, crime appeared as an indicator reflecting a barrier to community cohesiveness and activity. Refer to *Appendix A* to see assessments that reference crime indicators. See Section VI. Interview Observations and Recommendations, for specific concerns.

BAE identified two recent studies that primarily address the topics of public safety and the built environment. These include:

- *The Good, the Bad, and the Ugly: A Report and Recommendations Regarding a Report Card on Oakland's Liquor Stores* (2004)
- *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 10, Community Violence (DRAFT)* (2007)

Other assessments that include limited discussion on crime include:

- *23rd Avenue Community Action Plan*
- *The East Bay Greenway Health Impact Assessment* (2007)
- *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4 Retail Services (DRAFT)* (2007)
- *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 11 Social Cohesion and Social Exclusion (DRAFT)* (2007)
- *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 2 Housing (DRAFT)* (2007)

The list below shows the three indicators associated with crime that overlapped more than twice across all of the studies in this meta-analysis.

Safety and Crime Common Indicators
Crime (expressed anecdotally as being present or actual rate)
Perceptions of crime
Graffiti and littering

Overall, major findings from these assessments include the perception that **the presence of crime in many Oakland neighborhoods creates significant barriers to shaping a built environment and community sense of place.** The assessments report that residents' fear of crime is widespread and prevents people from actively enjoying the streets and public spaces. In addition, perceptions of crime along with graffiti and litter deter businesses and Oakland residents from locating in certain neighborhoods.

Among the most frequently used indicator across all assessments in this meta-analysis is the presence or rate of crime. While many assessments anecdotally discuss the presence of crime in a particular neighborhood, only two, the *Mac Arthur BART Transit Village Health Impact*

Assessment: Chapter 10, Community Violence and *The East Bay Greenway Health Impact Assessment,* document the actual rate of crime. The former found that the property crime rate in Oakland was about 5,500 per 100,000 residents. Both assessments found that the violent crime rate was over 1,000 per 100,000, ranking Oakland third in violent crime rates among California cities with populations of 100,000 and above.

The *Report Card on Oakland's Liquor Stores* discusses the rate of crime mostly in the context of state legislation that limits the number of liquor store licenses where there is "undue concentration" of crime. The underlying assumption of this report is that many liquor stores in Oakland have a record of selling drug paraphernalia and liquor to underage minors, thereby contributing to criminal behavior among patrons.

In the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4 Retail Services (DRAFT)* and *23rd Avenue Community Action Plan,* perceptions of crime are noted as a deterrent to successful and vibrant retail corridors for the reasons that new stores are less likely to open and people are less likely to shop in these areas. The former assessment discusses physical design strategies to deter crime. The latter echoes the *Report Card on Oakland's Liquor Stores,* suggesting that a high density of liquor stores is associated with high levels of crime.

Among the two studies that specifically address public safety and crime, a major common theme is the concept of Crime Prevention Through Environmental Design (CPTED). CPTED principles rely on the use of physical design like lighting or placing physical features, public spaces, and influencing human interaction in ways that diminish appeal to potential offenders. The *Report Card on Oakland's Liquor Stores* states that the City Council adopted a resolution which would allow for implementation of a CPTED pilot project in Oakland's Uptown area. The report encourages the use of CPTED principles to provide for higher visibility into liquor stores, since lack of visibility can perpetuate unlawful activities like selling drug paraphernalia and liquor to minors. The *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 10, Community Violence* encourages the use of CPTED principles in their recommendations for the design of the Mac Arthur BART station area.

While the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 10, Community Violenc*e focuses on design strategies to prevent crime, it also discusses how fear of crime can inhibit social activity. It is the only assessment to point out that crime is associated with low levels of social capital. This is important because social cohesion is oftentimes a necessary and underlying element to reshaping the built environment and building community sense of place.

Recommendations and Conclusions

Among the two studies that directly address the topics of public safety and the built environment, there is only one overlapping recommendation: **both studies encourage the use of CPTED principles**. All recommendations in the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 10, Community Violenc*e suggest that developers incorporate CPTED principles into design of the Mac Arthur station area project. The author of the *Report Card on Oakland's Liquor Stores* recommends that City planning staff and the City attorney research the possibility of stepping up the regulation of windows to provide visibility inside liquor stores. The assessment reports that while state law regulates that no more than 33 percent of a liquor store's window area may be covered with signs or advertising, the law does not prevent store owners from blocking window visibility with other barriers, such as refrigerators or shelves.

Other recommendations in the *Report Card on Oakland's Liquor Stores* are geared toward public policy actions directly related to preventing owners of liquor stores from conducting major

violations of the law (selling drug paraphernalia and alcohol to minors) and minor violations (allowing excessive litter and graffiti).

HOPE might consider conducting an informal study to identify ways in which other cities have used regulations or leveraged redevelopment monies to implement CPTED into new development and improvements.

The HOPE Collaborative could build more capacity in improving members' knowledge of various efforts to reduce crime in Oakland. HOPE should consider inviting a representative from the Neighborhood Law Corp (NLC) to the join the Collaborative. Their perspective is valuable because they work directly with community members, business, police, and City law-makers to identify and prioritize problems and concerns. NLC attorneys are familiar with the neighborhoods, conduct town hall meetings, and attend "livingroom gatherings" to share information and implement problem-solving strategies.

Information Gaps

1. **Identify how neighborhood residents and youth can be engaged in crime prevention strategies focused on improving the built environment.**

The studies included in this meta-analysis offer a good starting point for developing the crime strategies that use the built environment as a tool for crime prevention. Vibrant commercial corridors and CPTED strategies can deter criminal activities by providing "defensible space" (an area that residents feel they control), "natural surveillance" (the ability to see what's happening around an area) and "sense of order" (places that are well tended and lack visible signs of deterioration).. However, none of the studies discuss way in which members of the neighborhood, and particularly at-risk youth, can contribute to the prevention of crime. For example, many people believe that vandalism often occurs because people do not feel a sense of respect for blighted buildings and underutilized spaces in a neighborhood. To encourage this, some neighborhoods have invited at-risk youth to create art or murals in public spaces or on private property. Other ideas that focus strategies at the neighborhood level involve developing active after-school and weekend youth centers, community gardens, and volunteer programs that encourage youth to take part in shaping the physical environment in their own communities.

2. **Ensure implementation of CPTED strategies in future development.**

None of the studies in this meta-analysis discuss ways in which the City can finance CPTED strategies or develop a regulatory structure that would ensure that these principles are integrated into all new development and upgrades of existing infrastructure. For example, CPTED principles could be integrated into design standards, required for upgrades to streetscaping, required in redevelopment projects, or integrated into development agreements for large projects.

Neighborhood Quality

Themes

The assessments categorized under "Neighborhood Quality" use indicators to describe various essential elements that characterize quality of life in a neighborhood. While the three assessments in this category are markedly different in their form of analysis, together they provide a snapshot of some of the most basic neighborhood necessities that support a high quality of life. Such necessities include clean air and a healthy environment, access to food and other goods, and access to services. Access to transit, parks, and open space are also basic neighborhood necessities. Due to the number of assessments identified in these categories, these topics are covered in more detail in separate sections of this report. The assessments in the Neighborhood Quality category include:

- *23rd Avenue Community Action Plan* (2005)
- *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4, Retail Services (DRAFT)* (2007)
- *Neighborhood Knowledge for Change, the West Oakland Environmental Indicators Project* (2002)

The list below shows the seven indicators that overlapped at least twice among these four assessments.

Neighborhood Quality Common Indicators
Land Use Indicators
Access to goods and services
Residential (housing type) diversity
Density
Liquor store concentration
Crime Indicators
Crime rates
Transportation Indicators
Transit Access/service availability
Socio-Economic Indicators
Community economic investment

Land use patterns and zoning are important markers of neighborhood quality and community health in that they tell us what kinds of uses are legally allowed and where in the built environment they are permitted. All of the assessments listed above found that historic land use designations impose challenges on current efforts to reshape the built environment. These barriers include the fact that zoning designations have allowed convenience/liquor stores to exist throughout many Oakland neighborhoods and that the lack of integrated land use patterns does not allow for a mix of uses with housing in proximity to goods and services.

Crime is evaluated as an indicator in the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4, Retail Services*, and in the *23rd Avenue Community Action Plan*. These assessments indicate that crime presents inherent challenges to efforts in developing vibrant mixed-use commercial corridors. At the same time, the assessments suggest that such development would have the potential to deter crime.

Transit accessibility is an important indicator in all of the assessments in this category. Transit service affects residents' ability to access food and other shopping needs, jobs, schools, and recreational spaces. The *23rd Avenue Community Action Plan* found that not all bus lines are reliable in the study area and that bus stops along these routes to and from the study area are unsheltered, lack adequate seating and provide no bus route or schedule information. *Neighborhood Knowledge for Change* evaluated this indicator by looking at the percentage of West Oakland residents that live near a bus stop and found that in 1999, 83 percent lived within one-eight mile from a stop. However, it also found that in from 1995 to 1999, West Oakland lost 15 percent of its monthly average weekday AC Transit bus service miles.

In addition to land use regulations, socioeconomic indicators also reveal how well a community is served by a diversity of goods and services. Many socioeconomic indicators appear in the assessments in this category, but community economic investment is the only one that overlaps. In the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4, Retail Services*, the author concludes that the development of mixed-use commercial corridors can serve to draw additional community economic investment to a neighborhood.

In *Neighborhood Knowledge for Change*, community economic investment is evaluated in two ways. The first evaluates "community instability," defined as the rate that parcels are bought and sold over a 30-month period in West Oakland. The assessment found that community instability was slightly higher in West Oakland than the City as a whole. The second way in which the assessment evaluates community economic investment is by looking at the number of new businesses formed in a neighborhood over a certain amount of time. The assessment found that in the late 1990s, West Oakland experienced an increase in businesses such as computer software, consulting, architecture, and business services. The neighborhood also experienced increased investment in retail and in firms involved in arts and entertainment.

Environmental quality is another indicator of neighborhood health. Although not addressed in other assessments in this category, indicators of environmental quality are a primary focus in *Neighborhood Knowledge for Change* and warrant discussion. This assessment involved a community outreach approach in which residents of West Oakland participated in a workshop to identify and prioritize a set of indicators that reflected issues of greatest concern. Of almost 20 indicators selected, environmental indicators represented the majority. For the West Oakland community, a neighborhood geographically bounded by freeways and industrial uses, air quality and exposure to toxins is a major health concern and is credited for a variety of health disparities experienced by residents.

With the exception of an analysis on asthma rates and air pollution (health risks discussed in *Neighborhood Knowledge for Change*) the only other assessment in this category that addresses health indicators is the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4, Retail* Services. This assessment found that the development of a vibrant, mixed-use commercial corridor can result in many potentially beneficial health outcomes. These include improved nutritional health as a consequence of access to affordable, quality food and increased physical activity as a consequence of integrating retail and residential uses.

Recommendations and Conclusions

Neighborhood Knowledge for Change did not provide policy or programmatic recommendations, but rather offered extensive information on how local residents can learn more about the findings presented and what they can do to get involved to address issues of concern. As this information is broadly focused and lengthy, it is not included in this report.

The recommendations of the other two assessments are centered on attracting a diversity of goods and services that reflect the desires and needs of local residents. The *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 4, Retail Services* provides recommendations ranging from pursuing design strategies, further studies and surveys, and regulations on locations of liquor retailers to creating development impact fees and community benefits agreements. The *23rd Avenue Community Action Plan* articulates five recommendations as in the form of design, policy, and development strategies that reflect the Plan's community visioning outcomes.

In considering the recommendations that have emerged from previous assessments, the HOPE Collaborative also might consider advocating for policies that encourage or require developers to design projects in ways that explicitly promote public health. For example, some cities reward developers for achieving "green building" standards by expediting the permit process or reducing fees. One new tool is the Leadership in Energy and Environmental Design (LEED) Neighborhood Development (ND) standards, which measure the environmental impact of neighborhood design features for new projects (including some elements that have a human health impact). The City could evaluate major projects based on their LEED ND rating to reward developers for achieving design features that positively impact residents' health.

Information Gaps

1. **The impact of limiting unhealthy food in Oakland neighborhoods has not been measured.**

The above assessment include significant discussion regarding access to goods and services (including healthy food retail) either by means of improved transit access or encouraging mixed-use development. However, none provide a discussion on ways to discourage or regulate the amount of unhealthy foods, such as fast food and convenience junk food available in neighborhoods where there are limited choices for purchasing healthy foods. Several communities across the country (including a handful in the Bay Area) have used zoning regulations to limit or ban "formula retail" (chain stores), drive-throughs, and fast food in neighborhoods. Most recently, Los Angeles imposed a temporary moratorium on new fast food restaurants in South Los Angeles, a neighborhood that is oversaturated with unhealthy food and provides limited healthy options. One important consideration for most low-income communities battling the health impacts of unhealthy food retail environments is how zoning controls can be shaped to target unhealthy food while encouraging healthier food retailers to locate in underserved neighborhoods.

2. **There is no comprehensive assessment of how Oakland's existing zoning codes and land use control measures support or undermine health in low-income communities**.

Many of the assessments in this and other categories discuss ways in which the built environment is a barrier to active living (e.g., limited access to healthy foods and parks/open space, lack of diverse retail options, perception of crime discouraging walking and use of parks). However, none of the assessments provide a comprehensive audit of Oakland's current building codes, zoning code, design guidelines, or development processes with the specific goal of assessing public health outcomes of the City's regulations and practices. While Oakland has encouraged mixed-use and transit-oriented development within some of its neighborhoods, the assessments in this meta-analysis do not make it clear whether the City's zoning codes and land use control measures consistently and effectively enhance overall health and livability in each neighborhood.

Parks and Open Space

Themes

Parks and open spaces are elements of the built environment that play a significant role in determining public health outcomes. Access to parks has been shown to improve residents' physical fitness, mental health, sense of well-being, and cognitive function as well as the social cohesion and environmental quality within a neighborhood. Parks are also associated with reduced instances of depression, diabetes, obesity, and heart disease.

As the HOPE Collaborative works toward a built environment in Oakland that facilitates social interaction and provides safe, accessible places for physical activity for all residents, it is necessary to evaluate the status of existing parks and open spaces in the city. Four of the built environment assessments we reviewed addressed parks and open spaces as their primary theme:

- *Oak to Ninth Avenue Health Impact Assessment Chapter 3: Parks and Natural Spaces* (2006)
- *Tapping the Potential of Urban Rooftops: Rooftop Resources Neighborhood Assessment*
- *Groundwork Oakland Feasibility Study and Strategic Plan (DRAFT)* (2007)
- *The East Bay Greenway Health Impact Assessment* (2007)

As shown in *Appendix B*, 44 indicators overlapped at least twice in this category. Of these, the 13 that overlapped at least three times among the assessments are shown below.

Parks and Open Space Common Indicators
Environmental Quality Indicators
Water Quality
Parks and Open Space Indicators
Greening of landscape
Opportunities for new parks and open spaces*
Number of existing parks or open spaces
Community maintenance of parks and open space
Physical activity amenities
Underutilized parks or open space
Unequal access to and distribution of parks and open space
Cost of creating and maintaining parks and open space
Urban Design Indicators
Streetscape enhancement/ambiance/medians
Parks
Underutilized properties
Social Indicators
Quality of Life (based on proximity to parks)*

The majority of the indicators measured fall into the categories of *parks and open spaces* and *health.* Many indicators within the studies also deal with *urban design, land use*, *environmental quality*, and *social issues*. Overall, these findings suggest that **parks and open spaces in Oakland are currently viewed as positive neighborhood amenities that should be more prevalent and well maintained**.

The *Oak to Ninth Avenue Health Impact Assessment Chapter 3: Parks and Natural Spaces* is a chapter within a larger document analyzing the health impacts of the proposed Oak to Ninth development in Oakland. This chapter in the Health Impact Assessment (HIA) addresses a wide variety of health issues relating to parks and open spaces, ranging from inequities in access to parks, to pedestrian hazards, to frequency of various lifestyle diseases. In an interview, one of the authors of the HIA commented that while an HIA provides a thorough health analysis of a proposed policy or development, the ultimate goal is not to require an HIA for every new development but rather to incorporate the values of the HIA into the standard planning process.

The *Groundwork Oakland Feasibility Study and Strategic Plan (Draft)* focuses on the lack of adequate maintenance in Oakland's parks and absence of parks in certain neighborhoods within the city. This study is important because it identifies potential partnership opportunities for organizations dedicated to improving Oakland's parks and open spaces.

Tapping the Potential of Urban Rooftops: Rooftop Resources Neighborhood Assessment focuses on the East Lake neighborhood in Oakland and evaluates the potential for the neighborhood's rooftops to support green roofs, solar panels, and water catchment technologies. Although this study was conducted in a relatively small area of Oakland, a citywide version could reveal opportunities for a significant increase in green spaces within the City.

Finally, *The East Bay Greenway Health Impact Assessment* analyzes the health impacts of a proposed greenway project to be located beneath the elevated BART tracks between Oakland and Hayward. This greenway would provide twelve miles of walking and bike paths to nearby communities, which have a majority of low-income and minority residents and currently suffer from high rates of chronic diseases.

Recommendations and Conclusions

All four of the studies acknowledge the importance of parks and open spaces as amenities that support public and or environmental health within the Oakland community. The *Oak to Ninth Avenue Health Impact Assessment*, *Groundwork Oakland Feasibility Study and Strategic Plan*, and the *East Bay Greenway Health Impact Assessment* all emphasize the lack of sufficient park and open space resources in Oakland as well as disparities in access to these valuable amenities. Each of the studies also points out that **there is significant unmet potential within Oakland to create additional parks and open spaces in the form of rooftops, remediated brownfields, vacant lots, medians, and other spaces**. To increase the amount of green space within Oakland as well as access to these spaces, the studies recommend:

- Conducting a comprehensive survey of all potential parks and open spaces in the city
- Actively involving residents in park planning, including a survey of their needs and expectations for local parks
- Increasing walking and bike trails connecting residential neighborhoods to parks
- Increasing public transit services to existing parks
- Using universal design principles within parks and on greenway trails to allow access for all

The *Groundwork Oakland Feasibility Study and Strategic Plan* in particular concludes that Oakland parks are not adequately maintained due to a lack of park staff, resources, maintenance standards, and community involvement. Recommendations across the studies to improve park maintenance, encourage restoration efforts, and increase community participation in these projects include:

- Designing parks to minimize the need for maintenance (for example, by using native plants)
- Designing a maintenance plan to ensure an adequate budget for park maintenance
- Establishing and maintaining a database of parks and open spaces to record and monitor maintenance
- Encouraging community stewardship of parks and open spaces, especially in neighborhoods where there are few community volunteer efforts
- Providing educational opportunities for youth and adults in order to foster a deeper appreciation of Oakland's parks and natural areas
- Providing job training for youth in gardening, greens-keeping, restoration, and other fields to enhance the work of park maintenance crews, offset maintenance costs, and provide participants with job skills

The studies also point out a number of challenges and barriers to creating and improving parks and open spaces in Oakland that could be overcome with appropriate policies and government support. To address these obstacles, the studies suggest:

- Securing municipal funding for:
    - Conversion of underutilized spaces into parks and green areas, particularly in underserved neighborhoods
    - Restoration and maintenance of existing parks and open spaces
    - Development of community park stewardship programs
- Providing incentives for the creation of green roofs on existing buildings as well as new developments
- Amending the zoning code to encourage the creation of social spaces (such as coffee shops and outdoor restaurants) adjacent to urban parks and trails to encourage social interaction and deter crime

The East Bay Greenway Health Impact Assessment notes that residents view safety concerns as the primary barrier to using the proposed greenway in Oakland. Although this is the only study to point to safety as a major social barrier to the use of parks and open spaces for physical activity, real and perceived danger can be a major deterrent for residents, particularly in neighborhoods with high crime rates. Recommendations to promote safety in parks include:

- Ensuring that parks, green spaces, and natural areas in Oakland are welcoming and well monitored by park rangers
- Increasing police presence in and near parks
- Creating a community safety patrol
- Ensuring adequate lighting on bike and walking trails
- Designing bike and walking trails with proper sight lines to promote "eyes on the street"
- Installing call boxes and cameras in appropriate locations

Information Gaps

1. A better understanding of crime and safety issues in Oakland parks is needed.

Despite its significant implications for the use of parks in Oakland, the issue of crime and safety in parks is only discussed in one of the parks and open space studies. Further research on this topic would provide a more comprehensive understanding of actual crime rates, perceptions of safety, and methods for deterring crime in Oakland's parks and open spaces.

2. **Oakland's potential to expand its parks and open spaces has not been thoroughly assessed.**

All of these studies suggest that there are opportunities within Oakland to create new parks and open spaces, yet a comprehensive survey of these spaces has not been conducted. The *Rooftop Resources Neighborhood Assessment* does a thorough analysis of the potential to utilize the rooftops within one neighborhood. A similar assessment on a citywide scale along with a survey of other possible green spaces on the ground would provide a comprehensive understanding of Oakland's true potential to expand its parks and open spaces.

3. **Studies have not fully explored ways to encourage the development of community and rooftop gardens.**

None of the assessments in this meta-analysis discuss opportunities for open space or underutilized private and public lots to be used for food production (with the exception of *Tapping the Potential of Urban Rooftops*, which does include a discussion of rooftop food production). This issue is important because community gardens can provide residents a means for physical activity, stress reduction, and healthy foods. Assessments analyzed in the accompanying Food System Meta-Analysis recommend conducting an inventory of land (public and private) available for urban and rooftop gardening and strengthening land use policies and creating new policies (such as zoning ordinances) that support urban gardening.

4. **Opportunities to improve community access to open space through "joint use agreements" need to be explored further.**

See the section on Youth and Families in this report for a detailed discussion on developing joint use agreements between public schools and the City, which would allow greater community access to school property such as sports fields and swimming pools.

Transportation and Transit

Themes

Transportation and transit are two areas of urban planning to which planners, nonprofit advocacy organizations, and community groups in Oakland pay significant attention. The ways in which these topics relate to public health and the built environment are reflected in residents' mobility (e.g., access to goods and services, schools, jobs, health care, and recreational spaces) as well as in residents' health (e.g., auto emissions and air quality, bicycle and pedestrian access, and stress due to either car traffic or transit availability). Assessments in this category therefore reflect a wide range of indicators to describe how these issues effect quality of life in Oakland.

BAE identified four recent assessments that address transportation and transit issues as they relate to public health in Oakland:

- *Central and East Oakland Community-Based Transportation Plan* (2002)
- *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 3, Transportation (DRAFT)* (2007)
- *Roadblocks to Health: Transportation Barriers to Healthy Communities* (2007)
- *West Oakland Community-Based Transportation Plan* (2006)

The list below shows the 12 indicators that overlapped at least twice among these four assessments.

Transportation and Transit Common Indicators

Land Use Indicators
- Diversity of land use
- Access to goods and services

Environmental Indicators
- Ambient pollution (toxicity levels)

Crime Indicators
- Perceptions of safety

Transportation Indicators
- Transit access/service availability

Pedestrian and Bicycle Indicators
- Pedestrian and bicycle network connections
- Pedestrian and bicycle hazards
- Pedestrian and bicycle amenities

Health Indicators
- Physical activity
- Circulatory and respiratory disease

Social Indicators
- Racial/ethnic diversity

Socioeconomic Indicators
- Household income

In this category, transit access/service availability is one of the most commonly used indicators, appearing in each of the four assessments. Transit services are an important contribution to the

quality of life in the neighborhoods in which these studies focus because 1) the neighborhoods have high rates of poverty and low rates of car ownership, and 2) many areas in these neighborhoods are isolated from commercial corridors and public services, meaning that residents are required to travel significant distances to shop for goods or access public services like parks and libraries. In fact, all assessments in this category link the issue of "access to goods and services" to "diversity in land use" in their discussion on transit availability. The former indicator suggests that increased transit service would allow for mobility out of the neighborhoods, while the latter suggests that integrated land uses could encourage opportunities for more goods and services to exist in the neighborhoods.

Central to the analysis in *Roadblocks to Health* is an examination of the transportation barriers to health care, physical activity, and nutritious foods for residents in low-income communities (in Alameda, Contra Costa, and Santa Clara Counties). The assessment found that less than a third of low-income residents in Alameda County had transit access to a hospital. Regional parks were found to be largely inaccessible by transit. The assessment also found that less than half of the residents in West Oakland had transit access to grocery stores but showed that nearly three quarters of the residents in Fruitvale and Central East Oakland were near transit services that allow access to grocery stores.

In both the *West Oakland Community-Based Transportation Plan* and the *Central and East Oakland Community-Based Transportation Plan,* results of resident surveys indicated that residents had limited access via public transportation to grocery stores, medical appointments, schools and day care, and jobs. Surveys from both studies revealed that the frequency and cost of public transit are issues for local residents. Surveys from both studies also revealed that public safety at BART stations and bus stops is a major concern.

In addition to providing access to goods and services, the author of the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 3, Transportation* relates the benefits of a good transit system to a variety of positive health outcomes, including reduced exposure to air and water pollution, reductions in noise and injuries, and increased physical activity. A common concern in this study and the *West Oakland Community-Based Transportation Plan* is air pollution. Both point to the need for increasing public transit service to reduce vehicle traffic, thereby cutting the amount of toxic particulate matter released into the air in these neighborhoods. Both also point to air pollution as a factor exacerbating circulatory and respiratory disease, health issues affecting residents in the neighborhoods.

Of particular interest in the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 3, Transportation* and in *Roadblocks to Health* is how transit affect residents' ability to participate in physical activity. A finding cited in the *Mac Arthur BART Transit Village Health Impact Assessment* points out almost one-third of Americans who commute to work via public transit meet their daily requirements for physical activity (30 or more minutes per day) by walking as part of their daily life, including to and from the transit stop. The authors of *Roadblocks to Health* show that in many low-income neighborhoods, the lack of transit service to neighborhood and regional parks makes it difficult for residents to enjoy recreational spaces. This shows that the quality of transit services has the ability to either impede or facilitate physical activity.

The presence of pedestrian and bicycle networks is the other most commonly used indicator among all studies in this category. This indicator also widely overlaps with assessments in the "Neighborhood Quality" and "Parks and Open Space" categories. Both community-based transportation plans found that pedestrian and bicycle connections to transit are lacking in the

respective neighborhoods. The *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 3, Transportation* found that pedestrian and bicycle pathways leading to the BART station would result in reduced car use to access the station.

The *Roadblocks to Health* found a need for more and improved pathways to schools and parks and points to a number of local, state and federal resources geared towards funding these types of improvements. In addition, the *Central and East Oakland Community-Based Transportation Plan* recommends several federal and state resources for improved pathways and connections, including state and federal Safe Routes to School funding. It also points out that the City's Pedestrian Master Plan establishes a pedestrian route network that emphasizes Safe Routes to School and connections to transit, and identifies priority street segments along these routes for targeted improvements over the next 20 years.

Household income is used as an indicator in the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 3, Transportation* and the *Central and East Oakland Community-Based Transportation Plan* to show that low-income residents generally experience greater barriers to mobility than residents with higher incomes.

The *Central and East Oakland Community-Based Transportation Plan* shows that central and east Oakland are primarily multi-ethnic neighborhoods. *Roadblocks to Health* finds that people of color are disproportionately injured and killed on unsafe streets, and specifically in Alameda County. African-American pedestrians are two and half times more likely than white pedestrians to be hit by a car and killed or hospitalized.

Recommendations and Conclusions

Both community action plans include detailed implementation strategies for specific transit improvement projects. Due to the large number of proposed strategies resulting from the studies, both plans created a rating system to evaluate strategies. The *Central and East Oakland Community-Based Transportation Plan* bases the evaluation of proposed projects on **community support**, **actual transportation benefits**, **potential funding sources**, and **duration of implementation** for each project. Each strategy falls under one of seven categories: Multi-Modal Strategies, AC Transit Bus Operation Strategies, Transit Information Strategies, Transit Affordability Strategies, Paratransit for the Elderly; Bicycle Strategies; and Subsidized Car-Sharing.

The *West Oakland Community-Based Transportation Plan* evaluates proposed project recommendation on their likelihood to **generate community benefits**, **community support**, and **project feasibility**. The top solutions addressed through the proposed projects include:

- Improved AC Transit Bus Transit and/or new Community Shuttle
- Senior Shuttle Expansion
- Pedestrian facility improvement projects (3 separate projects)
- Truck Services at Oakland Army Base
- Truck Route Enforcement and Education
- Diesel Truck Replacement
- Comprehensive Transportation/Land Use Plan

The most critical recommendation in *Roadblocks to Health* is making transit access in low-income communities a top priority for local and regional transportation funding. Other recommendations focus on making health access a top priority in transportation planning and policy and call for collaboration between transportation and health care professionals. In

addition, the assessment calls for increasing access to healthy food in low-income neighborhoods by providing shopper shuttles to supermarkets and helping corner stores improve food quality. The assessment does not detail any implementation strategies for this recommendation.

The majority of recommendations in the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 3, Transportation* suggest a variety of design upgrades around the BART station area. These recommendations include increasing the housing and retail density around the BART station to reduce the length of trips between homes, transit, and shopping; providing secure bicycle storage; improving bicycle and pedestrian connectivity to the project area; and reducing the number of structured parking spaces for residential uses.

Information Gaps

1. **The effects of transit access on childhood obesity are not clear.**

While some of these studies include recommendations that seek to improve transit access for the elderly, none indicate a need for improving transit access for youth. This is important because many youth are under driving age or can not afford to drive but are old enough to take transit to participate in afterschool sports activities or physical weekend activities away from their homes and neighborhoods. A better understanding of whether youth are faced with barriers to participating in physical activities either due to a lack of access to transit or to the cost of transit would take into account the role that public transit agencies have in reducing child obesity.

Youth and Families

Themes

There are very few assessments in Oakland that address the relationship between the built environment and its effects on the health of youth and families. Schools and child care are an integral part of this relationship in several ways; their proximity to homes depends on whether children are able to walk or bike to school. Street design and traffic impacts the safety of children going to and from school. Schools themselves can be designed in ways that promote physical activity and healthy behavior (e.g., through quality playground space/equipment and school gardens).

The idea of social capital is also integral to the relationship between youth and families and the built environment. Indicators of social capital can reveal a community's cohesiveness and ability to effectively shape the built environment. Such indicators include community participation, trust, reciprocity, and mutual cooperation. Social networks at school, among family members, and neighbors can contribute to a community's ability to effectively shape the environment.

BAE identified two recent assessments that analyze these indicators:

- *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 5, Schools and Child Care (DRAFT)* (2007)
- *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 11, Social Cohesion and Social Exclusion (DRAFT)* (2007)

These assessments share only two indicators, as shown below. Due to the relatively small number of shared indicators, it is difficult to draw comparison between the two assessments without discussing a number of other indicators. Thus, this section of the report discusses other indicators appearing beyond the ones listed below.

Youth and Families Common Indicators
Pedestrian and Bicycle Indicators
Pedestrian and bicycle network connections
Social Indicators
Social/Community interaction

Pedestrian and bicycle network connections is one of two indicators shared by the assessments in this category. The author of the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 11, Social Cohesion and Social Exclusion* addresses this concern by examining how pedestrian and bicycle connections can present an opportunity to encourage social interaction among project and neighborhood residents. The author also suggests that increased public safety measures could encourage people to interact outside of their homes. These potential measures could also encourage children to play outside and engage with each other in the outdoor spaces planned for the residential areas of the project area.

In *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 5, Schools and Child Care,* pedestrian and bicycle connections are less about encouraging social interaction and more about providing children and opportunity to engage in more physical activity. This is especially beneficial when these connections can encourage children to walk or bike to and from schools. This assessment found that even though local schools are within one and a half miles from the

project area, pedestrian hazards surrounding the area (e.g., multi-lane roads, high vehicle volume) and limited safety countermeasures (e.g., advanced crosswalk design, bike paths) create a barrier that would allow for children to safely walk or bike to school. This assessment also considers that sufficient bicycle and pedestrian access to school can reduce the vehicle emissions in a neighborhood, since parents are less likely to drive children to school if it can be accessed by bicycle or foot.

Another key indicator that *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 5, Schools and Child Care* examined is the capacity of nearby schools and child care to accommodate the growing number of new students as new housing development in the project area increases the population and necessity for more classroom space. The assessment found that child care facilities are not equipped to handle the projected amount of need and that elementary and middle schools are near capacity and may not be able to support all new students from the transit village.

Social cohesion is the other indicator evaluated by both assessments. As discussed above, the *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 11, Social Cohesion and Social Exclusion* addresses this issue by looking at how the physical environment can influence the propensity of people to interact. Another issue that the assessment addresses is the likelihood of the project to displace residents via high property values and rents, thereby breaking existing social connections and affecting the social cohesion of the neighborhood.

The *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 5, Schools and Child Care* addresses the importance that social cohesion plays within schools. This assessment credits small class size with improved learning, and credits crowded classrooms with poor academic performance. The assessment found that poor performance can be exacerbated if children fail to form meaningful social bonds with positive adult and peer role models with whom they interact at school or in the community. Thus, opportunities for social interaction, which can be facilitated by community design solutions, are critical for childhood education and development. Equally important in this finding is the need for future planning efforts to coordinate with the school district and child care facilities to ensure that schools are designed to accommodate projected increases in the number of children as a result of new housing development.

Recommendations and Conclusions

The recommendations in the youth and family assessments both include a list of ideas for future project planning rather than long-term policy recommendations. Significant recommendations in *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 11, Social Cohesion and Social Exclusion* include integrating below-market and market rate housing at the project site; creating common walkways and meeting points that encourage interaction; and developing programs to retain low-income residential tenants vulnerable to displacement. Significant recommendations in *Mac Arthur BART Transit Village Health Impact Assessment: Chapter 5, Schools and Child Care* include reassessing the adequacy of school capacity in the neighborhood; ensuring that there is a child care center at the project site with safe indoor and outdoor play space; and expanding bicycle networks and pedestrian improvements to provide safe access to schools.

Information Gaps

1. Further evaluation of the value of public school facility spending is needed.

The assessments discussed above do not address investment (or disinvestment) in Oakland's public school facilities. Investment in upgrades to school facilities is important because it can have a significant impact on children's health. Beyond facilities such as gyms, athletic fields, and

playgrounds, equipment and curriculum for physical education and school gardening can also provide opportunities for children to participate in physical exercise. To fully understand the extent to which public school can improve the health of Oakland's youth, further research is needed beyond this meta-analysis to identify school spending patterns in the Oakland Unified School District with regard to construction of facilities and program implementation.

2. Opportunities to improve community access to open space through joint use agreements need to be explored further.

None of the assessments in this meta-analysis suggest exploring opportunities to take advantage of existing city and school facilities by opening them up to wider community use through joint use agreements. Joint use agreements between cities and schools are a practical way for cities and schools to take advantage of cost and space benefits of sharing facilities, while increasing accessible space for community residents to engage in physical activity. Typically, agreements allow schools to use city facilities (such as parks or gardens) for school activities, or they allow broader use of school facilities (such as indoor gyms and outdoor schoolyards) by the city through public programs or general open use. In built-out cities like Oakland, such agreements can significantly extend the amount of space available for community use. This is particularly critical as the population grows, and housing and commercial development take priority over recreational space at parks and schools.

VI. Interview Observations and Recommendations

Informant interviews yielded valuable insights and observations about the outcomes and impact of some of the studies and assessments, as well as providing professional opinions on how to address public health issues as they relate to the built environment. Many interviewees also shared their broader perspectives on what type of policy and systems change can lead to healthier communities. The interview protocol included a set of questions used for each of the five interviews. A full list of informants interviewed and the interview protocol can be found in *Appendix C*.

The findings from these conversations are organized into key themes that emerged across interviews, although not all interviewees had the same perspective on each of the themes highlighted.

1. Oakland faces significant public health disparities.
Several people cited poverty as the largest barrier to improvements in public health and the built environment. Issues such as access to transit, access to goods and services, and improved neighborhood infrastructure like parks and schools are largely driven by the amount of wealth within a neighborhood. Retailers and other commercial services are less likely to operate in neighborhoods where the market is perceived to be weak. Transit depends on service within densely populated areas to be cost-effective, so transit agencies tend to run bus lines in heavily populated neighborhoods where goods and services already exist while sparsely covering less-populated neighborhoods or corridors that suffer from commercial disinvestment.

Many people also cited a lack of public safety as a significant issue inhibiting people's ability to enjoy outdoor spaces, noting that this is not being addressed successfully in Oakland.

2. Political leadership must be built on health and built environment issues in Oakland.
Almost everyone interviewed felt that a lack of good political leadership is among the most significant barriers to change in Oakland. Several mentioned that it has had ripple effects throughout Oakland's bureaucracy, and that staff do not feel empowered or motivated to address issues systemically.

One interviewee commented that although public health and planning are beginning to share research methods and tools for building healthier communities, the network between these fields and others is too fragmented. Addressing the issue of leadership, this individual commented that implementing change would mean taking risks to work differently, and many people are hesitant to do this, as they work within an already bureaucratic system with their own mandates. Tools such as health impact assessments, which are multidisciplinary by design, attempt to break down these barriers by giving decision-makers the information they need to validate ideas that might not fit within existing mandates or processes.

3. Benefits from community investment in infrastructure must be captured by existing community residents.
One interviewee suggested that displacement of residents, sometimes called *gentrification*, is major barrier to systems change. As areas experience revitalization with upgraded transit services, new retail and commercial services, and improved public infrastructure—the types of neighborhood assets that encourage good health—low-income residents are often displaced. Neighborhood revitalization groups such as Unity Council often encourage integration of mixed-

income housing as a means for attracting retail, services, and improved infrastructure. However, as one individual suggested, if policies are not in place to preserve affordable housing and local jobs, low-income residents who suffered without these benefits prior to the area's revitalization could be priced out of their neighborhood.

4. Strategies must be prioritized.

Many interviewees suggested that further efforts toward improving the built environment and public health outcomes in Oakland should be strategically focused. People suggested that the HOPE Collaborative prioritize no more than five of what they think are the most pressing issues facing the City. One person suggested that HOPE should decide on one issue that the Collaborative would want a mayoral candidate to address, and engage with that candidate to include the issue in his or her political platform.

VII. Conclusions and Recommendations for Future Action

It is clear that a number of advocacy organizations, planning consultants, and academic researchers share concern for the effects that Oakland's built environment has on residents' health broadly. While this meta-analysis compares only 15 assessments that directly address this issue, the bibliography in *Appendix D* shows that more than a dozen other assessments and plans include at least a limited discussion on the topic.

While many groups in Oakland share a vision for healthier neighborhoods and residents, there is often divergence on what specific policies and systems need to be targeted in order to realize this vision. Several individuals interviewed for this meta-analysis felt that rather than pursuing a mixed bag of issues, the HOPE Collaborative should focus future efforts strategically. Taking into account resident priorities, HOPE Collaborative members' capacity, Oakland's political landscape, and other information gleaned from the Collaborative's planning phase will be critical in helping to identify a set of priority research and advocacy strategies.

An obvious concern among the Oakland community is crime, and the concept of Crime Prevention Through Environmental Design (CPTED) is emerging as a way of shaping the built environment to reduce criminal behavior. The principles of CPTED have not yet been fully incorporated into planning and development practice in Oakland, but could be integrated into design standards, required for upgrades to streetscaping, required in redevelopment projects, or included in development agreements for large projects. Other development and design standards that consider the affects of the built environment on health should also be considered, such as the Leadership in Energy and Environmental Design (LEED) Neighborhood Development (ND) criteria.

The HOPE Collaborative might also consider pursuing preliminary research on Oakland's zoning codes and development processes to determine the need for future code reform. Advocacy for reform should be pursued only after establishing a thorough understanding of the degree to which Oakland's zoning codes and development processes inhibit active and healthy living. In addition, the HOPE Collaborative might benefit from conducting an inventory of communities that have recently reformed their zoning codes to gather proven examples of codes that encourage healthy community design.

In recent years, Oakland has seen a number of health impact assessments (HIAs) focused on proposed developments. While HIAs have a history in Europe and other parts of the world, they are a still fairly new concept in the United States. The series of HIAs analyzed in this meta-analysis are still in draft form and primarily products of a UC Berkeley graduate student class project. While the HIAs point to important issues to consider in assessing the health impact of the built environment, it is expected that these studies will have further refinements before final drafts are complete. The HOPE Collaborative might consider a more thorough review of these and other HIAs to determine whether they are effective tool that can bring attention to the health impacts of development that might otherwise go ignored.

Undoubtedly, the connection between improving the quality of life of youth and families in Oakland's underserved neighborhoods is closely tied to improving the landscape in which families and youth live, work, and play. The Center for Cities and Schools (CCS), a nonprofit think-tank at UC Berkeley's Institute for Urban and Regional Development, recently reported that "researchers and advocates in the education, smart growth, regional equity, and public health fields are increasingly finding **overlapping agendas related to educational improvements,**

sustainable transportation, social inclusion, child health and efficient and environmentally responsible land use and development."[6] It is exactly this nexus at which the HOPE Collaborative is attempting to operate; the Collaborative itself can serve as a forum for creating the kind of interdisciplinary and inclusive partnerships and conversations that are required to create systemic change.

The studies analyzed for this meta-analysis offer a starting point upon which further strategies for action and research can build. The following table (Table 4) includes the information gaps identified in the meta-analysis. These recommendations point out areas of concern for which the HOPE Collaborative may want to advocate for further assessment and action.

[6] Vincent J and Filardo M. *Linking Scholl Construction to Equity, Smart Growth, and Healthy Communities*. UC Berkeley, IURD. 2008. (Emphasis added.)

Table 4. Information Gaps for Further Study and Action	
Information Gaps	**Targeted Strategies**
1. Identify how neighborhood residents and youth can be engaged in crime prevention strategies focused on improving the built environment.	▪ Assess ways to improve youth and neighborhood-level involvement in crime prevention programs focused on improving the built environment, such as mural creation, development of community gardens, and other programs and projects..
2. Ensure implementation of CPTED strategies in future development.	▪ Investigate ways to integrate CPTED principles into design standards, upgrades to streetscaping, in redevelopment projects, or development agreements for large projects.
5. The impact of limiting unhealthy food in Oakland neighborhoods has not been measured.	▪ Investigate ways to discourage or regulate the amount of unhealthy foods, such as fast food and convenience junk food available in neighborhoods where there are limited choices for purchasing healthy foods.
6. There is no comprehensive assessment of how Oakland's existing zoning codes and land use control measures support or undermine health in low-income communities.	▪ Consider a comprehensive audit of Oakland's current building codes, zoning code, design guidelines, or development processes with the specific goal of assessing public health outcomes of the City's regulations and practices.
3. A better understanding of crime and safety issues in Oakland parks is needed.	▪ Consider further research to gain comprehensive understanding of actual crime rates, perceptions of safety, and methods for deterring crime in Oakland's parks and open spaces.
4. Oakland's potential to expand its parks and open spaces has not been thoroughly assessed.	▪ Consider a citywide analysis of the potential to utilize rooftops, medians, brownfields, and other underutilized lands within underserved neighborhoods.
5. Studies have not fully explored ways to encourage the development of community and rooftop gardens.	▪ Consider a thorough assessment of opportunities for open space or underutilized private and public lots to be used for food production.
6. The effects of transit access on childhood obesity are not clear.	▪ Develop an understanding of whether youth are faced with barriers to participating in physical activities due to a lack of transit access or to the cost of transit services. Investigate the role that public transit agencies have or could have in reducing child obesity.
7. Further evaluation of the value of public school facility spending is needed.	▪ Consider further research to identify school spending patterns in the Oakland Unified School District with regard to construction of facilities and program implementation that can improve the health of Oakland's youth.
8. Opportunities to improve community access to open space through joint use agreements need to be explored further.	▪ Consider exploring opportunities to take advantage of existing city and school facilities by opening them up to wider community use through joint use agreements.

Appendices (see attached)

Appendix A: Meta-Analysis of Assessments

Appendix B: Meta-Analysis Indicators Matrix

Appendix C: Interview List and Protocol

Appendix D: Bibliography