Choice Neighborhood Initiative
Albany, Georgia:
Rapid to Intermediate Health Impact Assessment (HIA)

October 12, 2012

Catherine L. Ross, Ph.D., Harry West Professor
Director of the Center for Quality Growth and Regional Development

Michael Elliott, Ph.D., Associate Director of the Center for Quality Growth and Regional Development

Sarah M. Smith, Research Scientist
Michelle Marcus Rushing, Research Scientist

Anna Harkness, Research Assistant
Alexandra Frackelton, Research Assistant
Arthi Rao, Research Assistant

Center for Quality Growth and Regional Development
Georgia Institute of Technology
College of Architecture: City and Regional Planning
760 Spring Street, Suite 213
Atlanta, GA 30308
P: 404.385.5133
F: 404.385.5127
E: cqgrd@coa.gatech.edu
W: www.cqgrd.gatech.edu

Research Sponsored by
Georgia Department of Public Health
“The Choice Neighborhood Initiative Albany, Georgia - Rapid to Intermediate HIA” was created by the Georgia Institute of Technology’s Center for Quality Growth and Regional Development (CQGRD).

DISCLAIMER: The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Department of Public Health of the State of Georgia. This report does not constitute a standard, specification, or regulation.

Principal Investigator: Catherine L. Ross, Ph.D., Director of CQGRD and Harry West Professor.

Core Research Team: Michael Elliott, Ph.D., Associate Director of CQGRD, Georgia Institute of Technology; Sarah M. Smith, Research Scientist, Georgia Institute of Technology, CQGRD; Michelle Marcus Rushing, Research Scientist, Georgia Institute of Technology, CQGRD; Anna Harkness, Research Assistant, Georgia Institute of Technology, CQGRD; Alexandra Frackelton, Research Assistant, Georgia Institute of Technology, CQGRD; Arthi Rao, Research Assistant, Georgia Institute of Technology, CQGRD.

ACKNOWLEDGEMENTS

The project was completed in partnership with the sponsor:

Jenelle Holder Williams, MBA, Georgia Healthy Communities Initiative, Health Promotion and Disease Prevention Programs; Georgia Department of Public Health

Numerous other people from several organizations have contributed their time and expertise to this research project. Special thanks go to the following individuals for their contributions:

Remy Hutchins RN, BSN, MPH
Health Promotion/Infectious Disease Program Coordinator Albany District 8-2

Jacqueline Jenkins, M.S.P.H, District Epidemiologist, Director, Epidemiology & Surveillance Office, Southwest Georgia Public Health

Dan McCarthy, Executive Director, Albany Housing Authority

Dustin Minchew, GIS Technician, Albany GIS

Dennis Mobley, Mobley & Associates

Grace Perdomo, The Boulevard Group

Barbara Robinson, Director of Administration, Albany Housing Authority

Donna Rountree, Jackson Heights Fitness and Wellness Center

Darrell Sabbs, Legislative Affairs and Community Benefits, Phoebe Putney Memorial Hospital

Danita Wiggins, Asst. Director to Executive Director for Choice, Albany Housing Authority
ACKNOWLEDGEMENTS ................................................................. 2

Table of Contents .................................................................................. 3

List of Figures ....................................................................................... 4

List of Tables ....................................................................................... 4

Executive Summary ............................................................................... 5

1. Introduction .................................................................................... 8

   1.1 Health and the Built Environment .............................................. 8

   1.2 Report Objectives and Methodologies ....................................... 8

   1.3 HIA Project Selection ............................................................... 9

   1.4 Report Organization ............................................................... 9

2. Screening ........................................................................................ 10

   2.1 Community Context ............................................................... 10

   2.2 HIA Selection Process ............................................................ 11

3. Scoping .......................................................................................... 14

   3.1 Study Area – Geographic Extents ............................................. 14

   3.2 Affected Populations and Stakeholders .................................... 16

4. Appraisal ......................................................................................... 19

   4.1 Existing Conditions ............................................................... 19

   4.2 Stakeholder Input ....................................................................... 25

   4.3 Major Issues and Evidence Review ......................................... 28

5. Recommendations .......................................................................... 53

   5.1 Vulnerable Populations .......................................................... 53

   5.2 Redevelopment Strategies ..................................................... 55

   5.3 Community Facilities ............................................................ 56

   5.4 Transportation ........................................................................ 60

   5.5 Specific Design Strategies ..................................................... 63

6. Conclusions .................................................................................... 78

   6.1 Dissemination, Monitoring, and Evaluation ............................ 78

REFERENCES ..................................................................................... 79

Additional Resources ............................................................................ 94
List of Figures

Figure 1: The Health Impact Assessment (HIA) process ................................................................ 8
Figure 2: Albany Housing Authority's McIntosh Homes public housing development. ................. 12
Figure 3: Albany Choice Neighborhood Initiative boundaries determined by HUD HOPE VI planning grant. ............................................................................................................................... 15
Figure 4: Overlay of HIA study area and CN neighborhood boundary in Albany ............................. 16
Figure 5: Census tracts for which health data was collected and analyzed .................................................. 24
Figure 6: Conceptual model of multi-stressor exposure at the individual & neighborhood scales 29
Figure 7: CPTED conceptual model (Cozens, Saville & Hillier, 2005) ................................................. 48
Figure 8: Traffic counts on Monroe Street over time ......................................................................... 60
Figure 9: Traffic counts on Madison Street over time ........................................................................ 61
Figure 10: Locations where traffic counts were collected on Madison and Monroe Streets ............. 62
Figure 11: Parks, recreation areas, and playgrounds within two miles of Albany CN ....................... 65
Figure 12: Parks, recreation areas, and playground within the Albany CN HIA study area ............... 66
Figure 13: Inventory of existing substandard and vacant parcels .......................................................... 68
Figure 14: Acreage of contiguous vacant and substandard parcels ...................................................... 70
Figure 15: Traffic patterns surrounding potential new park locations .................................................. 71
Figure 16: Finalized site recommendations for new parks in Choice Neighborhood ......................... 73
Figure 17: Overview of Riverwalk Trail in relationship to the Choice Neighborhood ......................... 75

List of Tables

Table 1: 2012 County Health Rankings, Dougherty County, Georgia ................................................ 10
Table 2: Initiative Screening Matrix Applied to Choice Neighborhood Project .................................. 13
Table 3: Health Risk Factors ............................................................................................................. 17
Table 4: Comparisons of relative risk by community and individual resources ..................................... 17
Table 5: Age and Gender Characteristics ......................................................................................... 19
Table 6: Racial Characteristics ......................................................................................................... 20
Table 7: Housing Characteristics ...................................................................................................... 21
Table 8: Educational Attainment ..................................................................................................... 21
Table 9: Household Income and Employment Characteristics .............................................................. 22
Table 10: Health Indicators for HIA study area for the years 2005-2010 ............................................. 23
Table 11: Low Birth Weight Counts for the years 2005-2010 ............................................................. 23
Table 12: HIA stakeholder engagement activities, April - May, 2012 .................................................. 25
Table 13: Types of joint use programs and facilities/grounds .............................................................. 59
Table 14: Park Level of Service (LOS) provided by selected cities in Georgia ...................................... 64
Table 15: Park LOS in the Albany CN HIA study area ....................................................................... 67
Table 16: Principles of Crime Prevention Through Environmental Design ........................................ 77
Executive Summary

In the 1980s, the World Health Organization, defined health as not merely the absence of illness, but complete physical, mental, and social well-being. Recent research in the public health and urban planning fields have indicated that certain aspects of the physical and social environment (including transportation, land use, urban design and economic development) have the potential to influence community health.

A Health Impact Assessment (HIA) is a tool to analyze and evaluate the potential effects that a proposed policy or project may have on human health. The Georgia Institute of Technology, in partnership with the Georgia Department of Public Health (and other partners) conducted a rapid-intermediate HIA to assess the potential health impacts resulting from a proposed redevelopment of McIntosh Homes (Albany, GA) to mixed-income housing through a community transformation planning process funded by the US Department of Housing and Urban Development. The study area population faces a variety of health challenges, such as low socioeconomic status and educational achievement, and high rates of crime and chronic disease. Additionally, the study area includes a substantial number of vacant and poorly-maintained properties, as well as a lack of healthy food sources and greenspace.

Based on an analysis of existing conditions, stakeholder input and evidence from the public health and planning literature, the researchers developed a set of recommendations to be included in the Transformation Plan to improve community health in the study area. Major elements include the conversion of specific underutilized land to greenspace, the establishment of a community garden engaging children, design strategies for pedestrian safety and traffic calming, and improved access to the Riverwalk multi-use trail adjacent to the study area. Additionally, plan implementation should include clear communication to residents about housing changes to reduce stress, careful demolition to minimize impacts to respiratory health, and provision of affordable housing and healthy foods in future redevelopment (through additional mixed-use development within the area).

The process of community transformation can help the West-Central Albany neighborhood capitalize on potentially catalytic projects such as the McIntosh Homes redevelopment and the existing Riverwalk trail. Evidence-based recommendations that span the interactive social and physical environment should be considered to improve health and quality of life. This can help maximize the community health benefits of mixed-income housing redevelopment.

<table>
<thead>
<tr>
<th>Recommendations Summary Table</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Opportunity For Intervention:</strong></td>
</tr>
<tr>
<td><strong>HIGHER RISK AND OCCURRENCE OF DIABETES</strong></td>
</tr>
<tr>
<td><strong>DETERMINANTS</strong></td>
</tr>
<tr>
<td>• Lack of healthy food options</td>
</tr>
<tr>
<td>• Lack of physical activity</td>
</tr>
<tr>
<td><strong>RECOMMENDATIONS</strong></td>
</tr>
<tr>
<td>• Incorporate a neighborhood community garden space in Plan</td>
</tr>
<tr>
<td>• Encourage mixed-use development including grocery stores</td>
</tr>
<tr>
<td>• Development of additional non-profit community health facilities</td>
</tr>
<tr>
<td>• The Transformation Plan should include a mix of land uses to create walkable destinations</td>
</tr>
</tbody>
</table>
Executive Summary

 Choice Neighborhood Initiative Albany, Georgia –
Rapid to Intermediate Health Impact Assessment (HIA)

which will encourage both utilitarian and recreational physical activity for neighborhood residents

- Create greater connectivity to existing trail system through pedestrian facilities and route signage
- Expand available greenspace, encourage pro-social places
- Include active and passive recreation typologies in design of greenspace and pocket parks
- Initiate joint use agreements with existing neighborhood facilities (i.e. schools) to encourage physical activity.

**POTENTIAL OUTCOME**

- Improved access to healthy foods can aid in diabetes prevention and management.
- Increased physical activity can reduce obesity and other conditions associated with diabetes risk

**Existing Opportunity For Intervention:**

**HIGHER RISK AND OCCURRENCE OF ASTHMA**

**DETERMINANTS**

- Low socio-economic status (SES)
- Poor housing conditions

**RECOMMENDATIONS**

- Albany Housing Authority (AHA) should consider a smoke-free policy for their properties and restrict smoking in common areas, such as porches
- Demolition of the older AHA properties, including McIntosh Homes (and potentially the Golden Age development)
- Demolition of substandard housing stock
- Installation of moisture barriers and adequate ventilation
- Reduce the exposure of children and adults to environmental tobacco smoke from neighbors.
- Insulation, sound dampening and natural light in new housing design

**POTENTIAL OUTCOME**

- Decreased asthma rates among residents due to improved building conditions, and removal or avoidance of asthma triggers.
- Reduction of indoor dampness or mold through construction techniques
- Reduction of environmental toxins by avoiding the use of cheap building materials such as low-formaldehyde plywood and vinyl wallpaper
- Multiallergen reduction through pest control to reduce cockroaches and dust mites
- Improvement of building conditions

**Existing Opportunity For Intervention:**

**TRAFFIC RELATED INJURIES**

**DETERMINANTS**

- Speeding vehicles
- Lack of cohesive system of pedestrian facilities

**RECOMMENDATIONS**

- Consider one-way to two-way street conversion
- Consider implementation of traffic calming measures
- Encourage improvement of pedestrian facilities
- Bicycle and pedestrian infrastructure

**POTENTIAL OUTCOME**

- Traffic calming
- Pedestrian facilities
- Increased opportunities for physical activity
### Existing Opportunity For Intervention:

<table>
<thead>
<tr>
<th>LOW SOCIOECONOMIC STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH CRIME RATES IN NEIGHBORHOOD</td>
</tr>
<tr>
<td>DECREASED MENTAL HEALTH FOR POPULATION DUE TO NEIGHBORHOOD CHANGE</td>
</tr>
</tbody>
</table>

#### DETERMINANTS
- Low educational attainment
- Unemployment
- Poor access to goods and services
- Poor access to healthcare
- Poor social support

#### RECOMMENDATIONS
- Include a provision in the Transformation Plan for as many of the jobs created by the new land uses and services (as feasible) to be filled by neighborhood residents
- The resident population should be encouraged and supported in efforts to seek/complete higher levels of education
- Regular maintenance of neighborhood conditions to avoid symbols of neglect and abandonment
- Incorporate urban design elements to reduce crime (lighting, neighborhood maintenance, etc.)
- Monitoring of displacement to mitigate gentrification impacts.
- Clear communication to existing residents describing potential housing changes
- Support programs for displaced populations
- Community participatory models for health intervention are particularly effective because they help to customize scientific knowledge to local cultural requirements, increasing their credibility and acceptability
- Development of additional non-profit community health facilities

#### POTENTIAL OUTCOME
- Higher socioeconomic status population, higher educational attainment
- Reduced rates of health conditions associated with lower socioeconomic status such as poor maternal health and birth outcomes
- Reduced disease burden
- Reduced environmental stressors, mitigate risky behaviors that have negative health impacts
- Reduced crime victimization
- Reduced signs of disinvestment and perception of crime or danger
- Reduced negative mental health and stress due to neighborhood change
- Increased or maintained social capital and mental health benefits
1. Introduction

1.1 Health and the Built Environment

Research over the past decade has suggested that external factors, such as social and economic policies and the built environment, can affect an individual’s ability to be healthy. Although causality is not conclusively proven by the literature, there is sufficient evidence linking these larger contextual elements and health to necessitate inclusion of health considerations in project and policy decisions.

A Health Impact Assessment (HIA) is a methodology that has been used internationally, and increasingly in the United States, to understand how changes in the built environment might affect public health. An HIA is often defined as “a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential positive or negative effects on the health of a population, and the distribution of those effects within the population” (WHO, Gothenburg Consensus, 1999).

1.2 Report Objectives and Methodologies

The research methodology used for this HIA is consistent with the standards as defined by the National Academy of Sciences in the document, *Improving Health in the United States: The Role of Health Impact Assessment* (National Research Council, 2011). Therefore this HIA utilizes the internationally recognized standard process for conducting an HIA. The following Figure 1 illustrates the methodology utilized by this report.

![Figure 1: The Health Impact Assessment (HIA) process](image-url)
1.3 HIA Project Selection

The project team reviewed multiple projects located in Georgia to identify planning or policy actions that were likely to impact health, located in Public Health Districts that faced disproportionate health challenges within the State of Georgia. Through the HIA screening process described in detail in the following section, the Transformation Plan currently under development by the Albany Housing Authority (AHA) under the Choice Neighborhood Initiative program sponsored by the U.S. Department of Housing and Urban Development (HUD), emerged as the best candidate for an HIA and is therefore the subject of this report.

1.4 Report Organization

The report is organized as follows. Section 2 describes the screening process, including the factors that led to the selection of the Choice Neighborhood Transformation Plan as a desirable candidate for an HIA. A brief overview of the health challenges and existing conditions found within the Southwest Georgia Public Health District, Dougherty County, and the City of Albany are included in this section. This description provides a necessary understanding of the context within which the neighborhood exists and is a critical component of the HIA screening process. Section 3 describes the geographic boundaries that will be the focus of the HIA as well as the populations that will be most directly and indirectly affected by the Transformation Plan and are therefore included in the HIA. Section 4 established existing baseline conditions, describes the results of the stakeholder input process, and includes an analysis of this data. Major issues drawn from the analysis that could have a positive or negative impact on health are identified. The literature review includes evidence relevant to the critical issues that have been identified through the HIA process.

Recommendations were drawn from this process and are shown in Section 5. The final product of this HIA is a set of evidence-based recommendations which are provided to inform decision-makers and the general public about the health-related issues associated with the Transformation Plan and the surrounding area. The implementation options provided in the recommendations section seek to magnify positive health impacts, and remove or minimize negative impacts of the Plan.
2. Screening

2.1 Community Context

Located in Dougherty County in southwest Georgia, in the Southwest Public Health District, the Albany metropolitan area has a population of about 158,000 people.

Dougherty County has an obesity rate of 35% and a physical inactivity rate of 28% (County Health Rankings 2012). Below, Table 1 summarizes the state of health indicators for Dougherty County in 2012, as compared to other Georgia counties, the state overall, and the nation.

<table>
<thead>
<tr>
<th>Table 1: 2012 County Health Rankings, Dougherty County, Georgia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dougherty County</td>
</tr>
<tr>
<td>Health Outcomes</td>
</tr>
<tr>
<td>Mortality</td>
</tr>
<tr>
<td>Premature death</td>
</tr>
<tr>
<td>Morbidity</td>
</tr>
<tr>
<td>Poor or fair health</td>
</tr>
<tr>
<td>Poor physical health days</td>
</tr>
<tr>
<td>Poor mental health days</td>
</tr>
<tr>
<td>Low birth weight</td>
</tr>
<tr>
<td>Health Factors</td>
</tr>
<tr>
<td>Health Behaviors</td>
</tr>
<tr>
<td>Adult smoking</td>
</tr>
<tr>
<td>Adult obesity</td>
</tr>
<tr>
<td>Physical inactivity</td>
</tr>
<tr>
<td>Excessive drinking</td>
</tr>
<tr>
<td>Motor vehicle crash death rate</td>
</tr>
</tbody>
</table>
### Section 2  
**Screening**

#### Table: Health Indicators Comparison

<table>
<thead>
<tr>
<th>Health Indicator</th>
<th>Dougherty County</th>
<th>Error Margin</th>
<th>National Benchmark*</th>
<th>Georgia Rank (of 156)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexually transmitted infections</td>
<td>796</td>
<td>84</td>
<td>411</td>
<td></td>
</tr>
<tr>
<td>Teen birth rate</td>
<td>75</td>
<td>22</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Clinical Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uninsured</td>
<td>21%</td>
<td>19-23%</td>
<td>11%</td>
<td>21%</td>
</tr>
<tr>
<td>Primary care physicians</td>
<td>662:1</td>
<td>631:1</td>
<td>1,024:1</td>
<td></td>
</tr>
<tr>
<td>Preventable hospital stays</td>
<td>58</td>
<td>49</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Diabetic screening</td>
<td>83%</td>
<td>89%</td>
<td>83%</td>
<td></td>
</tr>
<tr>
<td>Mammography screening</td>
<td>73%</td>
<td>74%</td>
<td>66%</td>
<td></td>
</tr>
<tr>
<td>Social &amp; Economic Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school graduation</td>
<td>78%</td>
<td>81%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>58%</td>
<td>54-62%</td>
<td>68%</td>
<td>58%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>12.0%</td>
<td>5.4%</td>
<td>10.2%</td>
<td></td>
</tr>
<tr>
<td>Children in poverty</td>
<td>49%</td>
<td>42-56%</td>
<td>13%</td>
<td>25%</td>
</tr>
<tr>
<td>Inadequate social support</td>
<td>26%</td>
<td>14%</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Children in single-parent households</td>
<td>61%</td>
<td>20%</td>
<td>36%</td>
<td></td>
</tr>
<tr>
<td>Violent crime rate</td>
<td>888</td>
<td>73</td>
<td>470</td>
<td></td>
</tr>
<tr>
<td>Physical Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air pollution-particulate matter days</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Air pollution-ozone days</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Access to recreational facilities</td>
<td>7</td>
<td>16</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Limited access to healthy foods</td>
<td>26%</td>
<td>0%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Fast food restaurants</td>
<td>57%</td>
<td>25%</td>
<td>50%</td>
<td></td>
</tr>
</tbody>
</table>

* 90th percentile, i.e., only 10% are better

Note: Blank values reflect unreliable or missing data

#### 2.2 HIA Selection Process

As is clear from the previously described challenges faced by the Southwest Public Health District and Dougherty County (the county is ranked 117 out of 156 in regards to health outcomes), this area faces significant health challenges and was therefore selected as a target area for further study. Conducting a Health Impact Assessment on a program, policy, or project in the area provides an opportunity to begin to intervene in the contextual framework of the community to explicitly bring health to the forefront of the decision process. Through the screening phase, a number of alternatives were reviewed as potential options for an HIA to achieve these goals. From these options, it was determined that the most favorable candidate for an HIA was the Albany Housing Authority’s (AHA) Transformation Plan for the Choice Neighborhood Initiative in West Central Albany.

#### Choice Neighborhood Initiative and Transformation Plan

In 2011, the AHA applied and was awarded a Federal planning grant (from HUD) to develop a neighborhood transformation plan for West Central Albany. This planning grant is part of the HOPE VI program to redevelop public housing projects and replace them with mixed-income communities. The grant does not include funding for plan implementation, but it is possible to apply for an implementation grant or acquire funding from other governmental sources. The neighborhood includes a deteriorated public housing development and high poverty and crime...
rates. The Plan focuses on one particular AHA development, McIntosh Homes. At present (or prior to the slated redevelopment effort) McIntosh Homes is 97% occupied. The eventual demolition of McIntosh Homes will result in the displacement of several hundred residents. The neighborhood is generally lacking in commercial and civic amenities, although it does include a high school and elementary school. Additionally, the neighborhood is adjacent to a hospital (Phoebe Putney Memorial Hospital), which is a major community partner for the neighborhood transformation planning process. According to a site visit presentation (2011), the initiative is in the “physical planning” and “resident planning” phases.

The team is currently halfway through the planning process, which is scheduled to be completed by Fall 2012. AHA has contracted with consultants to assist in the planning work. The planning team has collected baseline data, conducted a market study of the area, conducted stakeholder meetings and established community partnerships. In the coming months, the team will collect more baseline data (including a neighborhood-wide survey conducted by a local church) and continue to strengthen relationships with community partners. The team has begun developing ideas for potential construction, including housing types and commercial development. Although food access is not currently a major aspect of the planning process, the team has discussed commercial opportunities for an abandoned grocery store property. There is currently no grocery store in the neighborhood.

Figure 2: Albany Housing Authority's McIntosh Homes public housing development. (Photograph provided by Grace Perdomo, consultant for AHA.)
The planning team has expressed interest in being involved in a pilot Health Impact Assessment. Although HUD does explicitly include health as a required consideration in the Transformation Plan, this HIA will serve to provide additional resources, evidence, data analysis, and recommendations to the planning team to enhance the consideration of health and health impacts into the ongoing development if the Transformation Plan.

The screening matrix shown below in Table 2 illustrates the screening process that was completed prior to the selection of the AHA’s Choice Neighborhood Initiative Transformation Plan as a favorable subject for an HIA.

<table>
<thead>
<tr>
<th>Table 2: Initiative Screening Matrix Applied to Choice Neighborhood Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Is there a decision?</td>
</tr>
<tr>
<td>Is the decision likely to substantially affect health or health determinants?</td>
</tr>
<tr>
<td>Is the timeframe for the decision-making process appropriate?</td>
</tr>
<tr>
<td>Is there enough evidence and data for the analysis?</td>
</tr>
<tr>
<td>Is there potential to disproportionately affect vulnerable populations?</td>
</tr>
<tr>
<td>Does the current decision-making process fail to adequately address health?</td>
</tr>
<tr>
<td>Does the legal framework allow for health to be factored into the decision?</td>
</tr>
<tr>
<td>Are available staff and resources adequate to complete a successful HIA?</td>
</tr>
<tr>
<td>Is there major public controversy about the decision?</td>
</tr>
<tr>
<td>Is an HIA likely to produce new findings or recommendations?</td>
</tr>
<tr>
<td>Is there a risk for major catastrophic health consequences?</td>
</tr>
</tbody>
</table>
3. Scoping

The scoping process of an HIA includes determining the geographic boundaries that will be the focus of the HIA as well as the population that will be affected by the AHA Transformation Plan project and identifying any vulnerable populations affected by the project. Also during the scoping phase, the project team determined any constraints that might be present when collecting data. Some data is only available at the census tract scale of measurement. For example, some health and demographic data will be suppressed at the smaller Choice Neighborhood unit of measurement. This lack of data at certain scales also influenced the scoping boundary for the HIA.

3.1 Study Area – Geographic Extents

For this HIA the geographic boundary includes the Choice Neighborhood (CN) Initiative boundary defined in the grant submitted to HUD, as well as a larger area around the CN boundary which directly corresponds to the Census Tract and Block Group boundaries: Census Tract 8, Block Group 1 and 2 and Census Tract 7, Block Group 1. The Choice Neighborhood boundary is shown in the following Figure 3. This geographic boundary was designated as the subject of the HIA for multiple reasons. The Transformation Plan Choice Neighborhood boundary centers around the McIntosh Homes community, which is currently slated for probable demolition and is the subject of the Transformation Plan. Therefore the Census Block Groups that include the Choice Neighborhood are critical for inclusion. In addition, the HIA study area includes a portion of the neighborhoods directly adjacent to the north of the CN boundary. Initial site visits and stakeholder input alerted the HIA team to the existence of potential disparities and historic tensions between these two populations. Thus the HIA project team included this larger context as the area of study to examine health disparities between adjacent neighborhoods as well as explore how the Transformation Plan could affect the adjacent neighborhood and help overcome historic divisions.
Figure 3: Albany Choice Neighborhood Initiative boundaries determined by HUD HOPE VI planning grant.

(Figure created and provided by the AHA Choice Neighborhood project consultants.)

The geographic scope of the HIA is defined by the larger census tract boundaries to illustrate these adjacent conditions. The following figures demonstrate the geographic HIA area boundaries. The objective of this report is to provide recommendations to influence the outcome of the Transformation Plan which will specifically target the area within this boundary.
Choice Neighborhood Initiative Albany, Georgia – Rapid to Intermediate Health Impact Assessment (HIA)

Section 3

Scoping

Figure 4: Overlay of HIA study area and CN neighborhood boundary in Albany.

3.2 Affected Populations and Stakeholders

Populations that will potentially be affected by the Transformation Plan are included as the subject of this HIA. These groups include: residents of the Choice Neighborhood, students in local schools, owners and employees of local businesses, residents of neighborhoods adjacent to the Transformation Plan target area, and Phoebe Putney Hospital.
Defining Vulnerable Populations

Aday (1994) identified vulnerable populations as those which exhibit one or more risk factors for poor health status based on the personal, socioeconomic, and community characteristics. Since then, numerous researchers have assessed which risk factors should be considered in assessing a population’s vulnerability.

Galea, Tracy, Hoggatt, DiMaggio, and Karpati (2011) conducted a meta-analysis of 47 studies of all-cause mortality that considered social factors as a contributing cause. The researchers determined populations’ relative risk based on education, income, race, and social support factors. They identified the following factors displayed in Table 3 to be linked to increased risk of mortality for adults:

### Table 3: Health Risk Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Definition</th>
<th>Source</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual Level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low education</td>
<td>Adult educated less than high school or equivalent</td>
<td>US Census</td>
<td>Age 25-64: 1.81</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Age 65+: not significant</td>
</tr>
<tr>
<td>Poverty</td>
<td>Household income &lt;$10,000 or below poverty level</td>
<td>US Census</td>
<td>Age 25-64: 1.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Age 65+: 1.40</td>
</tr>
<tr>
<td>Low social support</td>
<td>“Low” score on a social network index</td>
<td>National Health and Nutrition Examination Survey (NHANES)</td>
<td>Age 25-64: 1.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Age 65+: 1.34</td>
</tr>
<tr>
<td><strong>Area Level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area poverty rate</td>
<td>≥ 20% of adult population in poverty</td>
<td>US Census</td>
<td>1.22</td>
</tr>
<tr>
<td>Income inequality</td>
<td>Gini coefficient 1 standard deviation above mean or ≥ 25%</td>
<td>US Census</td>
<td>1.17</td>
</tr>
<tr>
<td>Racial segregation</td>
<td>% of Black population 1 standard deviation above mean or ≥ 25%</td>
<td>US Census</td>
<td>1.59</td>
</tr>
</tbody>
</table>

Source: Galea et al. (2011).

In previous HIAs, CQGRD has defined vulnerable populations based on an analysis of individual and household characteristics. For the Atlanta Regional Plan 2040 HIA, an area’s vulnerable population was determined by the percentage of individuals under 18, over 65, of color or ethnic, unemployed, or less than high school educated, in conjunction with the percentage of households female-headed, in poverty, renting, or carless (CQGRD 2012). The following Table 4 displays an assessment of high and low health risk demographic, social capital, and human capital attributes.

### Table 4: Comparisons of relative risk by community and individual resources

<table>
<thead>
<tr>
<th>Category</th>
<th>Higher Risk</th>
<th>Lower Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>The people: social status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Infants, Children, Adolescents, Elderly</td>
<td>Working-age adults</td>
</tr>
</tbody>
</table>

Choice Neighborhood Initiative Albany, Georgia – Rapid to Intermediate Health Impact Assessment (HIA)
### Vulnerable Populations in the Choice Neighborhood

Since the subject matter and objective of the Transformation Plan addresses the specific needs of the lower income, publically subsidized segment of the population, clearly the population addressed in the Transformation Plan as well as the HIA would include a vulnerable population due to low socio-economic status. Within this economically vulnerable population further groups exist with specific health considerations including children, the elderly, or disabled populations.

### Stakeholders

As previously described, stakeholder involvement informed the establishment of the spatial boundaries for the HIA and provided information that was utilized to identify the potentially affected populations. Stakeholders have provided information utilized by this HIA through direct interaction with the HIA project team, feedback provided at HIA trainings which included local stakeholders, data collected by the AHA consultants from prior stakeholder meetings and surveys, meetings with the local public health district, city government agencies, religious organizations, and hospitals.

---

<table>
<thead>
<tr>
<th>Category</th>
<th>Higher Risk</th>
<th>Lower Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Females</td>
<td>Males</td>
</tr>
<tr>
<td>Race and ethnicity</td>
<td>African Americans</td>
<td>Whites</td>
</tr>
<tr>
<td></td>
<td>Hispanics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Native Americans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asian Americans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The ties between people: social capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family structure</td>
<td>Living alone</td>
<td>Extended families</td>
</tr>
<tr>
<td></td>
<td>Female-headed families</td>
<td>Two-parent families</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>Married/mingles</td>
</tr>
<tr>
<td></td>
<td>Separated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td></td>
</tr>
<tr>
<td>Voluntary organizations</td>
<td>Nonmember</td>
<td>Member</td>
</tr>
<tr>
<td>Social networks</td>
<td>Weak</td>
<td>Strong</td>
</tr>
<tr>
<td>The neighborhood: human capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>Less than high school</td>
<td>High school or higher</td>
</tr>
<tr>
<td>Jobs</td>
<td>Unemployed</td>
<td>White collar</td>
</tr>
<tr>
<td></td>
<td>Blue collar</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>Poor</td>
<td>Nonpoor</td>
</tr>
<tr>
<td></td>
<td>Near poor</td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>Substandard</td>
<td>Adequate or higher</td>
</tr>
</tbody>
</table>

Source: CQGRD 2012, Plan 2040 HIA
4. Appraisal

For the appraisal phase of the analysis, the HIA project team conducted a review of the existing conditions found in the study area. This baseline data provided the inputs to determine the potential positive and negative health impacts of the Choice Neighborhood Transformation Plan on the subject population. This information also provided the basis for recommendations formulated by the project team to maximize the expected positive health benefits of the Plan while mitigating any potential negative impacts. This baseline data was overlaid with the existing spatial data to determine relationships between the prevalence and distribution of health conditions within the context of the built environment and existing socio-economic status of the population.

4.1 Existing Conditions

The evidence base review included analysis of existing socio-economic and demographic data, collection and analysis of data indicating the existing health conditions found in the HIA study area, and collection and synthesis of study area stakeholder input.

Demographic and Socio-Economic Characteristics

Socio-demographic and demographic data from the 2010 US Census and the 2005-2009 American Community Survey (ACS) was collected for the study area. The ACS is an ongoing survey conducted through the US Census Bureau which is published each year for areas with a population greater than 65,000 and every three years for areas with greater than 20,000 people. The ACS data provides detailed economic and social characteristics of an area and illustrates changes within 1-year, 3-year, and 5-year time periods (www.census.gov). Available data that was relevant to the HIA was collected and includes information regarding the study area population's age, race, income, poverty, and housing characteristics. The demographic data was analyzed at the census block group level of measurement. Throughout the demographic data, a clear contrast in socio-economic status is evident between the residents of the three census block groups within the study area.

Age and Gender

The differences in age and gender distribution among the three block groups are shown in Table 5 below. Most of the McIntosh Homes development is located within Census Tract 8, Block Group 1, with the exception of a small portion which is located in Census Tract 8, Block Group 2. The geographic boundaries of the study area are shown again in Figure 5 below as a reference.

<table>
<thead>
<tr>
<th>Table 5: Age and Gender Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Census Tract</strong></td>
</tr>
<tr>
<td><strong>Block Group</strong></td>
</tr>
<tr>
<td><strong>Total population</strong></td>
</tr>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>% Total Population: Under 18 years</td>
</tr>
<tr>
<td>% Total Population: 18 to 34 years</td>
</tr>
<tr>
<td>% Total Population: 35 to 64 years</td>
</tr>
<tr>
<td>% Total Population: 65 and over</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
</tr>
</tbody>
</table>

Choice Neighborhood Initiative Albany, Georgia – Rapid to Intermediate Health Impact Assessment (HIA)
Within Census Tract 8: Block Group 1 (C-8: B-1), 36.8% of residents are under the age of 18, while by comparison, 21.9% of residents of Census Tract 7: Block Group 1 (C-7: B-1) and 24.5% of residents of Census Tract 8: Block Group 2 (C-8: B-2) are under the age of 18. In addition to its high proportion of youth residents, C-8: B-1 has a deficit of middle-aged adults. While 39.3% of C-7: B-1 residents and 45.3% of C-8: B-2 residents are between the ages of 35 and 64, only 29.5% of residents of C-8: B-1 are middle-aged. In addition to its youthful population, C-8: B-1 has a majority female population, with 58.4% of residents being women.

### Race

Differences in racial makeup also exist between the neighborhoods. As can be seen in Table 6 below, C-7: B-1 is majority white, with 57% white residents and 39.4% black or African-American residents. By contrast, both C-8: B-1 and C-8: B-2 are supermajority African-American, with 86.9% and 78.6% of the population respectively.

### Housing

Housing characteristics also vary between the neighborhoods as shown in Table 7 below. Only 54.2% of housing units in C-7: B-1 are rented while in contrast, the majority of housing units in the other two block groups are non-owner occupied, with 88.8% of housing units in C-8: B-1 and 83.5% in C-8: B-2 as rental units. Furthermore, in C-8: B-2, 24.8% of the housing units are vacant as compared to only 11.7% in C-8: B-1 and 10.6% in C-7: B-1. The dollar value of median gross
rent in renter-occupied housing units is the lowest in C-8: B-1 at $333. However, of the three neighborhoods, this makes up the highest percentage of household income at 38.7%. In contrast, C-7: B-1 has the highest value of median gross rent but it makes up the smallest percentage of household income at 27.3%.

**Table 7: Housing Characteristics**

<table>
<thead>
<tr>
<th>Census Tract</th>
<th>7</th>
<th>8</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Group</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Housing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing Unit Count (100%)</td>
<td>917</td>
<td>100.0</td>
<td>463</td>
</tr>
<tr>
<td>Occupied housing units: Owner Occupied</td>
<td>376</td>
<td>45.9</td>
<td>46</td>
</tr>
<tr>
<td>Occupied housing units: Renter occupied</td>
<td>444</td>
<td>54.2</td>
<td>363</td>
</tr>
<tr>
<td>Housing units: Vacant</td>
<td>97</td>
<td>10.6</td>
<td>54</td>
</tr>
<tr>
<td>Renter-Occupied Paying Cash Rent</td>
<td>Median Gross Rent, $</td>
<td>$636</td>
<td>$333</td>
</tr>
<tr>
<td>As % of Household Income In 2010</td>
<td>27.3%</td>
<td>38.7%</td>
<td>30.6%</td>
</tr>
</tbody>
</table>


**Educational Attainment**

Table 8, below, displays striking differences between the neighborhoods in census tract 7 and those in census tract 8 in level of educational attainment. While education levels vary from less than high school to doctoral degrees among residents of C-7: B-1, the majority of residents have some level of education beyond the high school level. In addition, in C-7: B-1 very few residents – just 31 of 446 (7.0%) of males and 57 of 807 (7.1%) of females – have less than a high school education.

**Table 8: Educational Attainment**

<table>
<thead>
<tr>
<th>Census Tract</th>
<th>7</th>
<th>8</th>
<th>8</th>
<th>7</th>
<th>8</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Group</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Educational Attainment, Population 25 Years and Over</td>
<td>Male Population</td>
<td>Female Population</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total population</td>
<td>446</td>
<td>272</td>
<td>529</td>
<td>807</td>
<td>252</td>
<td>233</td>
</tr>
<tr>
<td>Less Than High School</td>
<td>31</td>
<td>145</td>
<td>121</td>
<td>57</td>
<td>87</td>
<td>64</td>
</tr>
<tr>
<td>High School or Equivalent</td>
<td>84</td>
<td>90</td>
<td>136</td>
<td>147</td>
<td>100</td>
<td>104</td>
</tr>
<tr>
<td>Some college</td>
<td>156</td>
<td>27</td>
<td>272</td>
<td>346</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>142</td>
<td>10</td>
<td>0</td>
<td>120</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Master's degree</td>
<td>21</td>
<td>0</td>
<td>0</td>
<td>118</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Professional school degree</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: 2005-2009 American Community Survey

By contrast, the level of education among residents of C-8 is much lower. In C-8: B-1 145 of 272 males, 53.3% of the total male population 25 years and over, attained education at a level less than high school. A large proportion of males in C-8: B-2, 121 of 529 (22.9%) were educated at a
less than high school level while the majority, 272 of 529 (51.4%) males, attended some college. However, within C-8: B-2, no residents, male or female, have attained a bachelor’s degree.

Among females, residents of C-8: B-1 and C-8: B-2 are quite similar. While a significant proportion (87 of 252 (34.5%) in C-8: B-1; 64 of 233 (27.5%) in C-8: B-2) of female residents had less than a high school education, the remainder have attained a high school or equivalent degree, with many completing some college. However, in both census tracts, no females have attained a bachelor’s degree.

**Income and Poverty**

Below, Table 9 displays differences in household income. In C-8: B-1 45.2% of the population earns a household income of less than $10,000. The percentage decreases as income increases with 30.7% earning from $10,000 to $19,999. On the other hand, a smaller 21.7% of people have a household income of less than $10,000 in C-8: B-2 while a larger 37.7% earn between $10,000 and $19,999.

<table>
<thead>
<tr>
<th>Census Tract</th>
<th>7</th>
<th>8</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Group</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Median household income (In 2010 inflation-adjusted dollars)</td>
<td>$40,000</td>
<td>$10,873</td>
<td>$18,730</td>
</tr>
<tr>
<td>Total Number of Households</td>
<td>5.8%</td>
<td>45.2%</td>
<td>21.7%</td>
</tr>
<tr>
<td>Less than $10,000</td>
<td>17.9%</td>
<td>30.7%</td>
<td>37.7%</td>
</tr>
<tr>
<td>$10,000 to $19,999</td>
<td>20.2%</td>
<td>12.4%</td>
<td>19.1%</td>
</tr>
<tr>
<td>$20,000 to $29,999</td>
<td>6.1%</td>
<td>8.8%</td>
<td>3.5%</td>
</tr>
<tr>
<td>$30,000 to $39,999</td>
<td>6.0%</td>
<td>2.8%</td>
<td>12.8%</td>
</tr>
<tr>
<td>$40,000 to $49,999</td>
<td>23.2%</td>
<td>0.0</td>
<td>3.5%</td>
</tr>
<tr>
<td>$50,000 to $59,999</td>
<td>9.8%</td>
<td>0.0</td>
<td>1.7%</td>
</tr>
<tr>
<td>$60,000 to $99,999</td>
<td>11.0%</td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Households Income Sources</td>
<td>With wage or salary income</td>
<td>81.7%</td>
<td>26.6%</td>
</tr>
<tr>
<td>No wage or salary income</td>
<td>18.3%</td>
<td>73.4%</td>
<td>37.1%</td>
</tr>
<tr>
<td>With Social Security income</td>
<td>18.8%</td>
<td>61.2%</td>
<td>22.3%</td>
</tr>
<tr>
<td>Families living in poverty</td>
<td>Income in 2010 below poverty level</td>
<td>12.4%</td>
<td>69.4%</td>
</tr>
<tr>
<td>Female Householder, no husband present (with related children under 18 years)</td>
<td>3.7%</td>
<td>43.4%</td>
<td>17.4%</td>
</tr>
</tbody>
</table>

Source: 2005-2009 American Community Survey

Only 26.6% of people in C-8: B-1 obtains income from a wage or a salary while 73.4% receive no wage or salary income. 61.2% of residents receive social security income. In contrast 37.1% in C-8: B-2 have no wage or salary income. A striking 69.4% of families in C-8: B-1 earn an income
that puts them below the poverty level. Also, 43.4% of families are comprised of single mothers with children under 18 years of age. In comparison, C-8: B-2 has 27.1% of families below the poverty line and 17.4% of families with a female householder and children under 18.

### Study Area Health Conditions

The Centers for Disease Control identifies diseases of the Heart, Cancers, Stroke, Chronic Lower Respiratory Diseases and Unintentional Injuries as among the most common causes of death in the State of Georgia (CDC, 2008). These categories were used to inform a preliminary comparison of health data across the two census tracts (7 and 8) comprising the HIA study area.

An examination of health data across census tracts in the study area was conducted to compare chronic health conditions, emergency room utilization, hospital discharges, and infant health. This comparison provides an opportunity to analyze the previously established existing socio-economic conditions in the study area to determine how these conditions might contribute to potential health disparities. The combination of the existing SES conditions data and health data establishes a baseline to assess this relationship in the study area. The existence and specifics of the relationship between existing conditions and outcomes can inform policy levers in the Choice Neighborhood redevelopment plan and process that might influence positive health outcomes. This is consonant with the socioecological model of understanding health which also forms the conceptual foundation for the HIA process and implementation.

### Table 10: Health Indicators for HIA study area for the years 2005-2010

<table>
<thead>
<tr>
<th>Measures</th>
<th>Census Tract 7</th>
<th>Census Tract 8</th>
<th>Factor of increase from Tract 7 to 8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hospital Discharges</td>
<td>Hospital Discharges</td>
<td></td>
</tr>
<tr>
<td>ALL EVENTS</td>
<td>1,363</td>
<td>2,242</td>
<td>1.685</td>
</tr>
<tr>
<td>Neoplasms</td>
<td>39</td>
<td>41</td>
<td>1.041</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>21</td>
<td>96</td>
<td>5.052</td>
</tr>
<tr>
<td>Diseases of the Circulatory System</td>
<td>150</td>
<td>224</td>
<td>1.493</td>
</tr>
<tr>
<td>Diseases of the Respiratory System</td>
<td>131</td>
<td>214</td>
<td>1.634</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>50</td>
<td>60</td>
<td>1.200</td>
</tr>
<tr>
<td>Emphysema</td>
<td>0</td>
<td>6</td>
<td>3.400</td>
</tr>
<tr>
<td>Asthma</td>
<td>26</td>
<td>59</td>
<td>2.308</td>
</tr>
<tr>
<td>All other Diseases of the Respiratory System</td>
<td>36</td>
<td>58</td>
<td>1.667</td>
</tr>
<tr>
<td>Motor Vehicle Accidents</td>
<td>6</td>
<td>7</td>
<td>1.267</td>
</tr>
<tr>
<td>Total</td>
<td>347</td>
<td>582</td>
<td>1.700</td>
</tr>
</tbody>
</table>

*Source: Georgia Department of Public Health*
Below, Figure 5 illustrates the boundaries of Census Tract 7 and 8 as a reference.

**Figure 5:** Census tracts for which health data was collected and analyzed.

The total number of hospital discharges and emergency room visits in census tracts 8 (11,135) are two times those in census tract 7 (5,223). Typical of geographical areas containing socio-economically depressed populations, these numbers potentially indicate that residents of census tract 8 use Phoebe Putney Hospital as a primary healthcare provider. This is also an indicator and consistent with the underlying low socio-economic conditions established in the previous section for census tract 8.
Disparities between tracts are evident across all categories. Emergency room visits for all conditions in tract 8 were more than two times those of tract 7. Of particular concern are ER visits for diabetes and asthma where the number of ER visits in tract 8 is three times more than those in tract 7. This has numerous implications from the social determinants of health perspective.

All of the above data indicates an immediate need to remedy the built environment, particularly in areas that can promote healthy behaviors/lifestyles at the individual level and support healthful environments (access to healthy foods, healthcare and quality jobs) at the population level.

### Table 11: Low Birth Weight Counts for the years 2005-2010

<table>
<thead>
<tr>
<th>Dougherty County</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Census Tract 7</td>
<td>Census Tract 8</td>
</tr>
<tr>
<td>Low Birth Weight (≤2,500 grams)</td>
<td>Percent Low Birth Weight (≤2,500 grams)</td>
</tr>
<tr>
<td>11</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Source: GA Department of Public Health

Over the five-year time frame of 2005-2010, Census Tract 8 had twice as many cases of low birth weight babies compared to Census Tract 7 (Table 2). This potentially indicates poor maternal health as influenced by poor female health literacy (no females in tract 8 had a college degree), poor socioeconomic status and poor access to healthcare.

### 4.2 Stakeholder Input

Stakeholder input was gathered for the HIA through a number of methods including direct interaction with neighborhood residents and partners and focus group meetings. Stakeholder input gathered by the project partners was also incorporated into the HIA.

The following summary includes a synthesis of responses gathered from a comprehensive resident survey that was provided by the Albany Housing Authority (AHA) to identify critical issues.

### Table 12: HIA stakeholder engagement activities, April - May, 2012

<table>
<thead>
<tr>
<th>Date</th>
<th>Stakeholder Outreach Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 5, 2012</td>
<td>Macon HIA training, gathered initial input from stakeholders attending the training</td>
</tr>
<tr>
<td>April 18, 2012</td>
<td>Conducted initial site visit and stakeholder meetings in Albany, Georgia</td>
</tr>
<tr>
<td>April 18, 2012</td>
<td>Met with Health and Wellness Working Group in Albany, Georgia</td>
</tr>
<tr>
<td>April 19, 2012</td>
<td>Met with HUD representatives and project managers in Albany, Georgia</td>
</tr>
<tr>
<td>May 15, 2012</td>
<td>Conducted follow-up site visit and resident visioning stakeholder meeting in Albany, Georgia</td>
</tr>
<tr>
<td>May 15, 2012</td>
<td>Met with local Southwest Public Health District stakeholders and experts in Albany, Georgia</td>
</tr>
<tr>
<td>May 15, 2012</td>
<td>Met with community outreach representative from Phoebe-Putney Hospital</td>
</tr>
</tbody>
</table>
Resident Involvement

The HIA team also conducted a visioning meeting at the AHA offices with seven residents of the two public housing developments, McIntosh Homes and Golden Age Homes. At this meeting, residents discussed their health concerns and the ways in which the neighborhood exacerbates or lessens these concerns.

General Concerns

When prompted to discuss the health challenges they face, the residents immediately identified issues of diet, physical activity, and weight and diet-related chronic disease. Several indicated that they struggle to make healthy food choices, including what, when, and how much to eat. In addition, many find that it is difficult to get adequate physical activity due to their home and work schedules. As a result, several struggle from chronic health issues such as high cholesterol, high blood pressure, cardiovascular conditions, and diabetes. These health struggles are compounded by the residents’ frustration with medical access and care that they perceive to be inadequate. Most are enrolled in Medicaid, and their children are enrolled in PeachCare. However, the residents reported that Medicaid does not always cover the care they need, that they have difficulty finding doctors who can see them and their children when they need care, and that specialists are not always available. As a result, the residents go to Phoebe-Putney Memorial Hospital’s emergency room when they need urgent care.

Children’s and Adolescents’ Health

The residents identified a number of issues that affect the health of their children. Most indicated that they felt that their children did not get adequate physical activity. Between school and homework, children in the neighborhood often do not have time to play outside during the day. Many of the residents stated that the neighborhood is dangerous for children to play in unsupervised due to gang activity, so they do not let their children go out unless they are home and able to watch them. In addition, a lack of play and sports facilities in the neighborhood mean that the types of activities children can do outside are limited. The main bright spot for children in the neighborhood is the local Boys’ and Girls’ Club, which provide afterschool activities and sports. Many residents indicated that they send their children to the Boys’ and Girls’ Club when the parents are working after school hours. This place is seen as a safe place for children to play.

Most children in the neighborhood are unable to walk to school because the only elementary school is a magnet school with competitive entry which currently enrolls few students from McIntosh Homes. Furthermore, school bussing in Albany requires students to take two buses, one from their home to “the Hub,” where they transfer to a second bus that continues to their school. Because of this complicated bussing scheme, students must leave for school as early as 6:30 in the morning.

As children become teenagers, a different set of concerns emerged among the residents. For teenagers, major issues included keeping them out of gangs and encouraging them to continue and make the most of their education. Residents noted that teenagers in the neighborhood face a great deal of peer pressure to join gangs, and are encouraged by the gang activity that occurs within the neighborhood and at its periphery. To combat teens’ exposure to gang activity, residents felt that it was necessary to keep the teens out of the neighborhood when they could not be supervised by their parents. Several residents noted that school activities provide an avenue for kids to stay occupied outside of the neighborhood after school, and as a result, kids who are more involved in sports and school programs are less likely to become involved in
gangs. Although many of the teenagers in the neighborhood walk to Albany High School, not all go to this school since there are different academic “tracks” available at different schools in the city, so some students attend programs at other schools. Because of the tracking system, students in the high schools come from a variety of neighborhoods, which helps diffuse the influence of gang territory and gang influence on local teenagers.

### Adults’ Health

For adults in the Albany Choice Neighborhood, taking care of themselves while also caring for their families is a major challenge. Many adults in AHA housing are single parents who must balance working with caring for their children alone. In this context, they often lack extra time to spend with their kids, exercise, or maintain healthy eating habits. Many adults lack adequate transportation to get to and from work. While several of the residents at the meeting had their own cars, others relied on friends or family members to give them rides to run errands or get to work; others relied primarily on walking or public transportation.

AHA provides the Family Sufficiency Program which helps parents set reachable short and long term goals, obtain seed money from the program’s escrow account to surpass barriers, and receive community support. In addition, AHA has formed a McIntosh resident planning group, of which most of the focus group participants were members. This group discusses issues and opportunities in the neighborhood, and often receives advance access to new opportunities. The residents suggested that they believed that the successful outcomes of residents who participate in these programs should provide encouragement to other neighborhood residents to begin participating in them. However, these programs currently do not reach all of the members of the neighborhood, and some residents remain either unaware or unwilling to take advantage of these support programs.

### Elders’ Health

The residents also discussed the issues that challenge older members of the community, such as those who live in the Golden Age development. For these residents, a major challenge is meeting their cost of living on a fixed income. Access to healthy food is an issue, since many have difficulty affording fresh produce. Once per year, AHA is able to arrange for a produce truck to come to visit senior housing developments. Residents receive a $20 voucher which they can use to purchase produce from the truck. AHA arranges a similar truck 2-3 times per year to distribute commodities and household items to residents of senior housing. These two programs are both very popular among the residents, but they are limited because they cannot be operated on a regular basis.

Elders also require outreach to help them remain integrated with the community and maintain ties to their neighborhood as they age. Currently, Seniors And Law enforcement Together (S.A.L.T.) provides outreach to elders through the Albany law enforcement community. This program allows seniors to interact with law enforcement and discuss their problems and needs. The residents also talked about the possibility of creating a mentorship program for elders to interact with local children, but many felt unsure if they would support this. However, the residents also called attention to the needs of elders who are raising their grandchildren. These grandparents require extra assistance to ensure the best possible outcomes for their grandchildren.
4.3 Major Issues and Evidence Review

From the baseline health demographic and socio-economic data inventory and analysis and the stakeholder involvement process, the following critical issues were identified as indicators that could be positively or negatively impacted by the Transformation Plan.

- Vulnerable Populations and Associated Health Issues
  - Income and Poverty
  - Minority Status
  - Access to Employment
  - Access to Healthcare
  - Significant Health Issues:
    - Diabetes,
    - Asthma,
    - Low Birth Weight Infants
  - Affordable Housing
  - Gentrification and Displacement

- Health Effects of Housing Redevelopment
  - Social Capital
  - Property Values
  - Design Elements Influencing Housing Health

- Community Facilities
  - Parks and Greenspace
  - Trail Access
  - Access to Healthy Food
  - Urban Agriculture
  - School Facilities

- Safety and Security
  - Intentional Injury and the Built Environment

- Transportation
  - Neighborhood Impact of One-way Streets
  - Enhanced Pedestrian Facilities

The following evidence base was developed through literature review to assess the impact of these issues. This evidence provides the basis for the recommendations for the Transformation Plan proposed by this HIA in Section 5. The Plan also provides an opportunity to incorporate policies and programs that could begin to maximize positive health outcomes while mitigating any potential negative health impacts. The following diagram also provides a framework for the interactions between all of the issues explained above and their impact on health (Downs et al).
Vulnerable Populations and Associated Health Issues

As previously described in this report, Aday (1994) identified vulnerable populations as those which exhibit one or more risk factors for poor health status based on the personal, socioeconomic, and community characteristics.

For the purposes of this HIA, vulnerable populations are found in Census Tract 8, Block Group 1 and 2 within the study area and include:

- High proportions of elderly or under-18 residents;
- High proportion of minority residents;
- High proportion of residents with less than a high school education;
- High proportion of female-headed, single-parent households;
- High proportion of residents living below the Federal poverty level;
- High proportion of households in renter-occupied housing

The evidence supports the existence of a number of interconnected determinants related to vulnerable populations and health that directly apply to the populations found in Census Tract 8 of the study area.

Income and Poverty

Within census tract 8, block group 1 has an estimated unemployment rate of 73.4% whereas block group 2 has an unemployment rate of 37.1%. However, the median annual household income for block group 2 remains fairly low at $18,730. When coupled with data on preventable hospitalizations, this data potentially indicates that many people in Census Tract 8 Block Group 2 may be employed in low-wage, hourly jobs that do not provide any benefits or provisions for medical leave. Research in other HIAs has shown that many health conditions are neglected and are attended to only when they become medically urgent, when employees are faced with these working conditions. The fear of losing their jobs or other penalties for taking time off from work may prevent area residents from seeking timely medical care for themselves or their dependents before it escalates into a medical emergency. This causal connection between quality of employment and corresponding health outcomes has been investigated in other HIAs at both the national and state levels (Human Impact Partners, 2009).
Minority Status

In an extensive review of the health services literature, Mayberry et al (2000) found that statistically significant racial disparities in access to healthcare services existed particularly between African-Americans and whites. They report that racial differences exist with respect to primary care services, various other high-tech therapeutic and diagnostic procedures, pre-natal care and mental health services. Causal conclusion between race and disparities in access are confounded by several other factors such as socioeconomic and insurance status as well as individual patient characteristics (age, cultural beliefs, gender and severity of disease).

Access to Employment

The health of an adult individual and their household significantly improves with satisfying employment at a livable wage relative to the local market. Employment can provide or allow the household to acquire quality housing, nutritious food, education, transportation, medical care or coverage, savings, and many other necessities of a healthful life. Lack of access to employment, under-employment, or jobs which do not pay a living wage or provide sufficient benefits can contribute to stress, depression, malnourishment or obesity, homelessness, and many other negative outcomes. In the study area, a significant percentage of the population (73.4%) in Census Tract 8 Block Group 1 receives no wage or salary income. Although a portion of this population might not be of eligible working age, in both Census Tract 8 Block Groups 1 and 2 a large percentage of households (69% and 27% respectively) live below the poverty line, thus even those that are drawing a wage are not necessarily meeting the threshold of a living wage.

Doyle, Kavanagh, Metcalfe, and Lavin (2005) provided a comprehensive review on the impacts of employment, and by extension unemployment on health. According to their findings, unemployment is a stressful event and can have marked negative effects on one’s health. These may include but are not limited to premature mortality; poverty due to long-term unemployment may also result in individuals having less healthy lifestyles and being exposed to more unhealthy environments; financial strains may contribute to one being more depression prone; affects psychological well-being which might result in anxiety, self-harm or even suicide; individuals might be more likely to undertake unhealthy practices such as drinking and smoke; and increased risk of coronary heart disease due to increased stress, Doyle, et al. (2005) also found evidence that certain sections of society are more vulnerable to unemployment such as individuals with disabilities, the elderly, and females (under-represented in workforce). The types of jobs held by individuals are also a factor to health for example, temporary workers are exposed to poor working conditions, are less likely to receive training, and face job insecurity. Commuting patterns and mode choice can also have effects on individual health which can include reduced physical activity; increased stress due to long travel distances and times; increased commuting to access employment may also contribute to air pollution, accidents, and noise.

Access to Healthcare

Access to medical services is a multidimensional construct of availability, accessibility, accommodation, affordability and acceptability that measures both presence and use of services as described by Pechansky and Thomas (1981). Availability refers to the adequacy of supply of services in proportion to the population needs. Accessibility refers to geographical location of services as influenced by distance, transportation, travel time and cost. Accommodation refers to the degree to which population needs match the availability of services including waiting times and hours of operation. Affordability refers to the costs of healthcare services in relation to the people’s ability to pay, as determined by income levels and insurance coverage. Acceptability to
the various cultural aspects (such as gender, religion and ethnicity) that mediate between availability and usage, usually measured through client satisfaction.

Healthcare access barriers can accordingly be classified into Financial, Structural and Cognitive typologies. All categories of healthcare access barriers are associated with intermediary factors such as decreased use of preventive services, delayed presentation or delayed diagnosis, and lack of/insufficient treatment. These in turn are associated with poor health outcomes and health disparities. Minorities and low socioeconomic groups are disproportionately affected by barriers of access as evidenced by high rates of uninsured, low rates of health literacy and cultural/language challenges (Carrillo et al, 2011).

In the Choice Neighborhood, poor access is more a function of factors other than availability, since there are a number of healthcare providers located in close geographic proximity to the neighborhood. Phoebe Putney Hospital is located adjacent to the neighborhood, and a number of associated doctor’s offices are located nearby. Thus affordability rather than geographical proximity is one major barrier to access. Residents are limited by those options available to the lower end of the socio-economic spectrum. This is consistent with input gathered from the stakeholders as well.

In terms of affordability and income, as seen in the demographic data analysis from the previous section of the report, there is a stark difference in annual household income between the block group in Tract 7 as compared to the block groups in tract 8. Census Tract 7 had a median annual household income of $40,000 in 2010, whereas tract 8 had an average household income less than $19,000. There are differences evident even within Tract 8. Block Group 1 (comprised mostly of public housing projects) fares worse than Block Group 2 on all demographic indicators. Of particular concern is higher minority population, lower income, higher poverty, lower educational attainment and higher unemployment, further indicating financial barriers to healthcare access.

**Significant Health Issues**

The following significant health issues that are likely or have the potential to be impacted by the policies suggested in the Transformation Plan have emerged from the data. These conditions include a high rate of emergency room visits related to diabetes, a high rate of emergency room visits related to asthma, and a high rate of infants born with a low birth weight. These rates are all high for Census Tract 8 when compared to the rates in Census Tract 7 located to the north.

**Diabetes**

Emergency Room visits for diabetes by the population in Census Tract 8 are three times more than Tract 7. Diabetes is directly impacted by obesity, physical inactivity, diet and access to quality healthcare. Relatively higher events of Emergency Room visits for chronic diseases (particularly for diabetes) indicate that these conditions are poorly managed due to individual socioeconomic factors and also potentially exacerbated by the built environment.

Poor diet, lack of physical activity and obesity form common risk factors for many chronic diseases such as diabetes, cancer and cardio-vascular disease. Conversely, diabetes mellitus is a major risk factor for heart disease, stroke, hypertension, dyslipidemia, Metabolic Syndrome, and end stage renal disease. Researchers predict that over the next twenty years, diabetes mellitus will affect over 438 million people worldwide (8% of the adult population) (Halpin, 2010).
Ecological models offer important insights with regard to the influence of the environment on diabetes prevalence and management. At the individual level, endocrine disruptors in the form of environmental pollutants (air, water and other passive chemical exposures) have been implicated in the development of obesity, a primary risk factor for diabetes. Chemical exposures disrupt patterns of hormone regulation, food intake, adipose tissue distribution/differentiation and insulin sensitivity. Studies have shown that chemicals such as Bisphenol A even have intergenerational effects, where in-utero and early childhood exposures have negative health impacts in adulthood and are even passed on to offspring. Policies that aim at housing quality (better materials and construction practices) can help reduce these exposures (Ershow, 2009).

At the neighborhood level, unhealthy food environments (fast-food outlets, lack of grocery stores) are largely implicated in the obesity epidemic. Powerful economic forces have created obesogenic living environments that reinforce unhealthy, sedentary lifestyles creating a huge imbalance between energy intake and energy expenditure. Unhealthy physical and social environments have a greater effect on socially and economically disadvantaged populations (mostly minorities) compared to other societal groups. Often forced to live in low-income neighborhoods, they have few opportunities for physical activity, poor supply of healthy food and poor healthcare access (Ershow, 2009).

African Americans have higher diabetes prevalence, poorer control of risk factors for diabetes and bear a greater burden of diabetes-related complications, compared to all other US racial/ethnic groups (Grant, 2007; Schootman et al, 2007). Schootman et al (2007) hypothesize the different causal pathways between adverse neighborhood conditions and risk factors for diabetes among African-Americans. Neighborhood environments that induce and maintain unhealthy lifestyle behaviors such as low physical activity, tobacco/alcohol use and poor nutrition are predominantly populated by minorities and low-socioeconomic groups. Psychosocial factors such as increased stress, inadequate social support and poor mental health status form mediating factors in the association between adverse neighborhood conditions and the development of diabetes. Environmental toxins such as dioxins, lead and polychlorinated biphenyl are usually found in poor housing conditions are also known to increase risk factors for diabetes.

In addition to diabetes onset, the built environment can also influence diabetes management. Dietary modification forms an important component of diabetes management. Diet also performs a vital therapeutic role in maintaining optimal metabolic outcomes and reducing diabetes-related conditions. Therefore, land-use and zoning policies should address the creation of healthy food environments as an important population-level public health intervention. Proximity to grocery stores and other outlets that sell fresh produce are important considerations (Lamichhane et al, 2012). Salois (2012) highlights the importance of the ‘local food economy’ as a factor in creating healthful food environments. In a national study, density of farmer’s markets and percentage of farms that had direct sales were significantly and negatively associated with diabetes and obesity (Salois, 2012).

### Asthma

Also of note from the analysis of the health data, the Emergency Room visits for asthma were three times greater than those in tract 7. Several research studies have found that quality of the built environment (housing conditions; internal and external air quality) has direct impact on
triggering Asthma symptoms. In recent epidemiological research, obesity has also been found to contribute to the onset of asthma.

Again, higher events of ER visits for chronic diseases such as asthma indicate that the condition is poorly managed due to individual socioeconomic factors and again also potentially exacerbated by the built environment.

Asthma affects 7% of adults and 9% of children in the U.S. (Jackson, 2003). Various factors can cause the development of or contribute to the severity of asthma. Among these are outdoor environmental factors such as air pollution, including ground level ozone (O3) and respirable particulate matter (PM). Aeroallergens (pollen), Sulfur Dioxide (SO2), Nitrogen Dioxide (NO2) and O3 are associated with emergency pediatric hospital admissions whereas PM and O3 are associated with uncontrolled asthma in adults (Anto, 2012).

There are many indoor environmental factors in both homes and workplaces that may be associated with asthma. Estimates show that in the U.S., 15% of asthma cases are caused by irritants or allergens present in workplaces (Blackwell & Kanny, 2007). Associations have also been made linking asthma development and exacerbation with mold or dampness. A study by Kercsmar et al. showed that the removal of dampness and mold resulted in far less asthma exacerbation (Mendell et al, 2011). Other contributors include peeling paint, poor ventilation, cockroaches, dust mites, and pests (Northridge et al, Cummings & Jackson, 2001).

According to Bryant-Stephens (2009), 59% of children live in a household with at least one person who smokes and 39% of children have “a primary caretaker who smoked.” Children who have been exposed to environmental tobacco smoke (ETS) are more likely to have asthma and to die from asthma (Bryant-Stephens, 2009). The Georgia Department of Community Health (2010) found that secondhand smoke affects 57% of middle school and 64% of high school students. Among those children with asthma, 63% of middle school and 68% of high school students are exposed to ETS (Georgia Department of Community Health, 2010).

Recent research suggests that there is a significant relationship between asthma and obesity. Obesity presents a risk factor across all demographic groups. Obesity also exacerbates asthma symptoms such as more severe airway obstruction. The temporal relationship between obesity and onset of asthma is also fairly complex. Research indicates that obesity precedes asthma and affects early-onset asthma more severely than late-onset asthma. There is also some research that shows a link between maternal obesity and onset of asthma in early childhood, pointing to an intergenerational impact as well. Poor diets (high-fat foods, low consumption of fruits and vegetables) and maternal exposures act as important confounders in the relationship between obesity and asthma (Anto, 2012).

There is also a greater prevalence of asthma among minorities and the poor. This phenomenon could be due to differences in access to healthcare and quality of treatment (Bryant-Stephens, 2009). Another potential explanation is type and quality of housing. “Low income children are more likely to be exposed to structural hazards in the home,” (Cummings and Jackson, 2001). Because public housing is provided for residents with low income, frequency of asthma is often higher in neighborhoods that are poor. Furthermore, the majority of public housing residents are minorities (Northridge et al.). Public housing and low-income or minority neighborhoods may be more exposed to factors leading to asthma such as cockroach/mouse allergens and ETS (Bryant-Stephens, 2009). All of these factors contribute to the research finding that public housing has
the greatest number of children with asthma while private homes have the fewest (Northridge et al., 2010).

### Built Environment and Birth Outcomes

Over the five-year time frame of 2005-2010, Census Tract 8 had twice as many cases of low birth weight babies as Census Tract 7. This potentially indicates poor maternal health as influenced by poor female health literacy (no females in tract 8 had a college degree), poor socioeconomic status and poor access to healthcare. Policies that improve economic conditions, raise maternal awareness and improve access to prenatal care and better maternal nutrition could be effective in reducing these disparities overall.

Infant health is closely associated with health outcomes both at birth and in later life. In particular, poor health at birth is not only a leading cause of infant mortality, but is also associated with poor health in children and adults, as well as associated with conditions such as diabetes, obesity, and cardiovascular disease (Miranda et al., 2012, Tu et al. 2012, Grady 2011). Goldenberg et al. (2008) note that pre-term birth occurring before 37 weeks gestation is a cause in 75% of cases of infant mortality and in a large fraction of later illnesses in children and adults. Birth weight below 2500 grams is another leading cause of infant mortality (Tu et al. 2012). Tu et al. (2012) note that the United States’ low birth weight rate of 8.2% in 2007 was 16% above the rate in 1990; in Georgia, the 2006 rate of 9.6% exceeds the national rate and represents a similar increase relative to 1990.

Research has long suggested that neighborhood socioeconomic characteristics influence birth outcomes. Ellen et al. (2001) summarize research findings that poorer neighborhoods are associated with a range of worse infant and child health outcomes, including more low birth weight babies, higher infant mortality in the first year, and higher rates of childhood asthma and exposure to violence. In two of the studies reviewed, average income level within a census tract was significantly related to the probability of an infant having a low birth weight, while a third study found that low birth weight was correlated with neighborhoods with more residents receiving public assistance (Ellen et al. 2001).

Recent research suggests that poor birth outcomes may also be influenced by a neighborhood’s built environment characteristics. In a study analyzing births in 29 neighborhoods in Durham, North Carolina, Miranda et al (2012) found that housing damage, property disorder, housing tenure, vacancy rates, and high numbers of nuisances in a neighborhood were all associated with a variety of negative birth outcomes in unadjusted models. After adjustment, housing damage was associated with the outcomes of small size for gestational age, continuous birth weight, and birth weight percentile for gestational age; in particular, living in a neighborhood with higher levels of housing damage resulted in infants with lower average birth weights and birth weight percentiles. Goldenberg et al. (2008) note preterm birth is associated with stress and exposure to stressful conditions, including issues such as housing instability, poor housing quality, poverty, and deprivation.

Several studies have also found links between race, neighborhood characteristics, and birth outcomes. In a study of racial differences in birth outcomes in Flint, Michigan, Grady (2011) found that African-American mothers’ likelihood of giving birth to a low birth weight baby was negatively correlated with quality of housing. However, living in well-maintained housing was only found to lead to significantly increased birth weights for women who live in racially mixed neighborhoods. Among women living in segregated neighborhoods, there was no benefit. Anthopolous et al. (2011) also found evidence of negative birth outcomes associated with residential racial
segregation. In a study of birth records from five counties in North Carolina between 2002 and 2008, the authors found that living in a racially isolated neighborhood was correlated with greater odds of preterm birth and low birth weight. For both non-Hispanic whites and non-Hispanic blacks, the odds of these negative birth outcomes increased as neighborhood racial isolation increased. Additionally, in more highly segregated metropolitan areas, African-American women are more likely to give birth to low birth weight infants than African-American women living in less highly segregated areas (Ellen 2000). Anthopolous et al. (2011) hypothesized that racial segregation may affect birth outcomes through the impact of concentrated poverty, which may increase with greater levels of racial isolation. This can lead to higher poverty, unemployment, and crime, lower levels of education, worse infrastructure and housing stock, greater environmental contaminants, and less availability of neighborhood social services. In census Tract 8 the study area population is currently racially segregated with the population of Block Group 1 is approximately 87% African American and 13% white and Block Group 2 approximately 80% African American and 20% white.

In Portland, Oregon, a survey of all live births from 2006 to 2007 found that increased presence of urban trees in the immediate vicinity of the mother’s home (within 50 meters) reduced the risk that a baby would be small for its gestational age (Donovan et al. 2011). The authors hypothesized that greater tree canopy cover might reduce stress or the impact of stressful life events, increase perceived neighborhood social support, or indicate greater opportunities for physical activity. Any of these mechanisms are associated with improved birth outcomes and increased birth weight (Donovan et al. 2011).

### Affordable Housing and Health

In addition to providing adequate shelter, at a minimum housing must provide “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” (WHO).

For housing to be considered affordable, the aggregate cost of housing should be less than 30% of household income (Lavin, Higgins, Metcalfe, & Jordan, 2006, Pollack, Egerter, Sadegh-Nobari, Dekker, et al., 2008). By this definition, when comparing the income and housing costs in the study area, only Census Tract 7: Block Group 1 offers affordable housing while Census Tract 8: Block Groups 1 and 2 do not. When households are burdened with high housing costs, they have less money for health care, nutritious foods, education, and recreational opportunities among other things, all of which have direct impacts on health, overall quality of life, and the long-term economic success of the household (Lipman, 2006; Haas, et al, 2006; Ellen, et al, 2001).

### Gentrification and Displacement

Gentrification is a physical or social manifestation of neighborhood change. Using the physical environment as the descriptor, gentrification is the process of increasing land values in traditionally poor areas through redevelopment and renovation. The social expression of this process is the transition from a low-income population to a higher-income population (Kennedy and Leonard, 2001; Atkinson, 2004; Redfern, 2003; CDC, ndb). As a result, existing residents are displaced by gentrification as neighborhoods lose their stock of affordable housing units over time. And it is the inadequate availability of affordable housing that “is amongst the most prevalent community health concerns” (Anderson, 2003).
Gentrification and displacement have several types of potential health impacts related to mental health, social capital, access to health promoting goods and services. Left unchecked, the process of neighborhood change can:

- **Force residents to spend too much on housing.** Gentrification causes property values, and hence home prices and rental costs, to rise. High housing costs mean households have less money to sustain the long-term economic success of the household (Lipman, 2006; Haas, et al, 2006; Ellen, et al, 2001).

- **Make residents live in substandard or overcrowded housing.** With reduced housing options, residents may be forced to occupy substandard housing or move in with family and friends, resulting in overcrowding. Such conditions may increase risk of injury, lead poisoning, and respiratory illnesses.

- **Move away.** Locating a greater distance from employment results in increased transportation costs that also can burden the physical, mental, and economic health of households. People are paying the penalty in time (spent traveling to and from work), money (spent on transportation costs), and health (stress and less time for health-promoting activities). The penalties become increasingly and disproportionately severe for those families who earn less than $40,000 a year (Bernstein, 2004; Haas, et al, 2006).

Displacement may also result in a loss of social cohesion (also known as social capital). Social cohesion refers to connections to the family, neighborhood, identity group, locality, and society. A sense of social cohesion affects human health by providing supportive social networks that provide access to material and emotional support, allowing for social participation through relationships that provide friendship and participation in the workforce, supporting community engagement through participation in organizations that work for the benefit of members and others, and encouraging political engagement through involvement in the democratic process. Social cohesion has mental health and illness outcomes. For example, social networks have been shown to reduce stress, while isolation may aggravate mental illness. Social networks have also been linked to access to employment opportunities (Goetz, 2003), which can provide resources for healthcare services.

### Health Effects of Housing Redevelopment

A review of studies related to “rehousing/refurbishment plus relocation from slum area or community regeneration” found a positive association with mental health and social capital, and reduced fear of crime. This idea of social cohesion or social capital is discussed further in the following section of the report, Social Capital and Health. Additionally, such studies found that the increase in housing prices had a negative effect on diet due to decreased budgets, and in one study resulted in increased mortality rates. The review notes the negative impacts of housing relocation, such as stress and loss of social capital, as well as the existence of displacement effects, which may tend to skew the observed improvements in income and health outcomes (citing Hooper & Ineichen, 1979; Fried, 1966; Walker & Bradshaw, 1999).

An HIA conducted in Davenport, Plymouth, England focused on a long-term redevelopment of 448 “social housing” units and planned relocation of residents, aiming to increase the number of houses (rather than apartments) and increase owner-occupied housing (Pratt, 2008). The HIA outlined a number of actual and prospective health impacts from the redevelopment project. Potential positive health impacts from redevelopment included greater access to services and health services, better housing, and greater access to greenspace. Negative impacts included...
increased air and noise pollution, stress, negative impacts of relocation, and potential harm to social capital if youth housing needs are not addressed. The HIA recommended that minimizing relocation delays and providing information about housing choices can help reduce the negative impacts of housing redevelopment (Pratt, 2008).

A second HIA conducted in San Francisco, California focused on public housing redevelopment through the HOPE VI program of the US Department of Housing and Urban Development, which is the project sponsor for the Albany Transformation Plan (UC Berkeley Health Impact Group, 2009). The San Francisco HIA examined the health impacts of redevelopment at two housing sites, Bernal Dwellings and North Place Beach. The HIA results suggest that displacement negatively impacted social capital. However, the redevelopment has increased resident ethnic and economic diversity, which has been associated with potential health gains. Additionally, residents perceived improved access to programs and services, as well as perceived benefits from the creation of community kitchen space. The San Francisco HIA also recommends providing information about housing options during redevelopment.

### Revitalization and Redevelopment

Based on the literature, economic investment, sociocultural factors and transportation access have the potential to influence a region’s community development efforts. Ongoing investment is critical to a healthy community. In order to provide a safe, attractive place that can support its occupants, there must be routine maintenance of public and private properties, businesses that grow or change to meet evolving demand, and new neighbors to replace those who leave. Studies suggest that spatial integration with existing shopping linkages is likely to assist community revitalization efforts (Thomas, 2003).

Community involvement and dedication is also necessary to foster an environment that promotes community development and revitalization. Further, “sense of community” and “community resilience” have been identified as social factors which may promote successful community redevelopment (Chavis, 1990; Zautra, 2008). Research also suggests that despite poor physical quality of neighborhood facilities or housing, strong “place attachment” may contribute to revitalization (Brown, 2003). Thus, there is support in the literature for the association between attachment to community and community revitalization.

Cultural events and expressions appear to be a significant part of revitalization efforts. The expression of culture and community identity, and the presence of engaging forms of expression in otherwise unexceptional public spaces can stimulate new interest in the area by current residents and visitors. Streets, plazas, parks, and even vacant storefronts can become catalyzing spaces that attract new attention. Programs that feel inclusive for all community members and express positive values can promote mental wellness (West & Scott-Samuel, 2010).

### Social Capital and Health

Social capital refers to the collective value of a network—social, political, and economic—whose purpose is to inspire trust in and provide support for other members of that community (Dannenberg et. al, 2003). Social capital is the degree to which people feel that they live in and belong to a socially cohesive local environment, and the range of activities and resources that emerge as a consequence of those ties. Social capital is built both formally, through participation in group activities, and informally, through casual association and encounters. Putnam described two types of social capital: bonding and bridging (2000). Bonding social capital ties people together through inclusion (intra-community ties), but with exclusion as a by-product. Bridging
social capital expands the social network outwards beyond the insularity of the group fostering a larger scale sharing of information and sense of well-being and inclusion among groups (Putnam, 2000; Ewing & Kreutzer, 2006).

Social capital is often measured through associative variables of civic engagement (community participation) and trust (Kritsotakis & Gamarnikow, 2004; McKenzie, Whitley & Weich, 2002). However, more comprehensive models for measuring social capital are important to capture the diversity of social interactions, the diversity of community composition as well as to tailor-make health interventions to the particular community being studied (children, elderly, etc.; Kritsotakis, & Gamarnikow, 2004). Although Putnam’s model is often utilized in the literature, there are alternative models to evaluate social capital, such as Bourdieu’s social capital theory (Carpiano, 2007). Recent research on social capital (and other neighborhood effects) has encountered numerous methodological challenges, especially in terms of separating the effects of confounding variables and eliminating self-selection bias in neighborhoods choice (Sampson, Morenoff & Gannon-Rowley, 2002). However, social capital literature seems to provide support for the linkages between neighborhood characteristics, social capital and positive health outcomes.

Overall, a decline of participation in various civic associations and of socialization with neighbors has been recorded in the United States (Putnam, 1995). Studies suggest that individuals who are not well integrated into the social, political and economic networks, those with low social capital, are reportedly at increased risk for poor physical and mental health (Kawachi, 1999; Hawe, King, Noort, Jordens & Lloyd, 2000). In contrast, people socially engaged in their communities live longer and are healthier both physically and psychologically (Kaplan, Kaplan & Ryan, 1998; House, Landis & Umberson, 1988; Berkman, 1979; Seeman, Kaplan, Knudsen, Cohen & Guralnik, 1987; Kawachi, 1999; Berkman, Glass, Brissette & Seeman, 2000; Kawachi & Berkman, 2001; Brummett et al., 2001).

Some researchers argue that social capital serves as a source of information and goods, sets norms of healthy behavior, creates social ties and emotional support; and contributes to collective efficacy (UCBHIG, 2007). When information regarding health care is shared among members of a socially cohesive group, this information directly impacts the health of those involved. Further, identifying norms of healthy behavior can be used to reinforce healthy living habits. Social ties are based on mutual trust and the desire for individuals to look out for one another. Such ties can have profound affects both on the mental and physical health of individuals by reducing feelings of isolation and contributing to overall feelings of self-esteem and self-worth (UCBHIG, 2007).

Social capital has been linked to a variety of health outcomes, such as prolonged life expectancy and improved physical condition and mental health (Leyden, 2003). Studies have shown that isolation is a major cause of illness, and that once ill, socially isolated individuals are two to five times more likely to die than those with strong social networks (Berkman & Glass, 2000). Social capital has also been linked to better overall health including fewer colds, better cardiovascular health with reduced risk of stroke and heart attack, reduced risk of cancer, faster recovery from illnesses, and improved mental health (better self-esteem, self-image, and greater self-worth) (Putnam, 2000; Ewing & Kreutzer, 2006). Social capital, with its components of networking, information-sharing, and social norms, has also been found to have an effect on prenatal care and infant mortality rates (Harpham, Grant & Thomas, 2002). In addition, there are conceptual links between support provided by social networks and improved mental health, particularly in times of stress (Harpham et al., 2002). Social capital has even been shown to reduce incidents of violent crime and increase physical activity, as residents of safer environments tend to spend...
more time thereby partaking in more activities, including active travel, and providing informal surveillance to decrease crime (Ewing & Kreutzer, 2006; Adler & Newman, 2002).

Social capital is built through positive social interactions, group activities, political and civic engagement, and membership in clubs and organizations, among other means. In today’s society, people acquire social networks beyond their neighborhoods through their jobs, clubs, or houses of worship in what can be called communities of interest (Glynn, 1986; McMillan & Chavis, 1986; Lyon, 1987; Cochran, 1994; Nasar & Julian, 1995). However, people also become involved in their immediate environment or their community in place, which is important for the creation of social capital within the neighborhood (Glynn, 1986; McMillan & Chavis, 1986; Cochran, 1994; Nasar & Julian, 1995).

A study of three neighborhoods in Washington, DC explored the linkages between the presence and capacity of local institutions and several indicators of social capital. Roman & Moore (2004) found that the quantity of religious institutions and pro-social places (i.e. parks, schools, recreation centers) were correlated with trust, community participation and block satisfaction. In addition, the study found that the distance or accessibility to these institutions was associated with higher levels of social capital indicators (Roman & Moore 2004). A study of religious effects on community participation found that among the sample of church-going Protestants, church participation was the strongest predictor of all types of formal volunteering (Park & Smith, 2002). These studies indicate the importance of local, community institutions for the creation of social, healthy places.

The linkages between institution accessibility and community participation indicate the importance of the built environment for social capital. Research suggests that walkability, automobile dependence, mix of land uses, density, size of place, traffic volume, homogeneity, and presence of public spaces all impact social capital through their ability to create or support opportunities for formal and informal interaction. Built environments that promote social interaction can produce mutually reinforcing effects on place attachment or “sense of place” and social capital (Wood and Giles-Corti, 2008; Waxman, 2003).

Traffic volume has been shown to affect people’s sense of community; as traffic volumes increase, people’s social capital decreases. Similarly, research suggests that people residing on streets with light traffic volumes have larger social networks than those on streets with heavy volume (Lavin et al., 2006). The link between high traffic volume/speed and low social capital stems primarily from three causes: fear for personal safety, which limits walking and children playing outside; not wanting to walk in an unpleasant environment; the physical divide caused by the amount of traffic, its speed, and the width of the road (Lavin et al., 2006).

Regarding the use of specific design elements to increase social capital, walkable neighborhoods, such as those that have a grid-street pattern, narrow streets, small lots, mix of uses, density, traffic calming, sidewalks and crosswalks, and the presence of parks, trails, and other public spaces (Ewing & Kreutzer, 2006), are positively correlated to social capital. Lund (2002) conducted a study comparing the “sense of community” among pedestrian-oriented and auto-dependent neighborhoods in Portland, Oregon. Built environment characteristics of the pedestrian-oriented neighborhoods studied included high street connectivity, housing mix and pedestrian amenities. The study found that individuals in pedestrian-oriented neighborhoods perceived greater sense of community. In addition, the study found that sense of community was more strongly correlated with recreational walking trips rather than destination trips (Lund, 2002). Although the issue of self-selection bias in neighborhood choice remains, the study supports the
assertion that features of the pedestrian environment can promote social interaction and build social capital.

Mixed uses and density have proven to have an inconclusive relationship to social capital. Although there is evidence to suggest that mixing uses in close proximity tends to increase the number of walking destinations and thereby social capital, the evidence in relation to density is less clear (Ewing & Kreutzer, 2006). For example, a study of health outcomes and community participation in rural areas found that although low-density rural residents reported increased community involvement, high-density urban residents reported greater levels of physical activity and health status (Greiner, Li, Kawachi, Hunt & Ahluwalia, 2004).

Several studies demonstrate the linkages between land-use mixing, access to amenities and social capital. In a study of physical activity, social capital and the built environment, social capital was associated with access to services (restaurants, bars, libraries and museums) and associated with lower pedestrian injury rates. A study of Australian suburban neighborhoods found that the number and quality of destinations was associated with social capital (Wood et al., 2008), while a study in Portland, Oregon (Lund 2003) found that local retail access was positively associated with social capital indicators in inner-city (but not suburban) neighborhoods.

The decline of social capital has been attributed in part to a loss of public spaces including sidewalks, parks, plazas, dog parks, community gardens, and playgrounds. Even cafes, bookstores, and hair salons provide spaces in which people can interact intentionally or accidentally, formally or informally. These moments of interaction, whether for the exchange of pleasantries or information, create and strengthen the social networking bonds of social capital and can have real and substantial positive health outcomes (Ewing & Kreutzer, 2006; Baum & Palmer, 2002; Bedimo-Rung, Mowen & Cohen, 2005; Leyden, 2003). In a study of parks, physical activity and social capital in New Orleans, parks with higher social capital were found to have more park users and more than four times the amount of physical activity than parks with lower social capital (Broyles, Mown, Theall, Gustat & Rung, 2011).

In addition, these opportunities for socializing in public spaces or neutral territories can help reduce feelings of prejudice and increase understanding of other cultures and races by enabling interaction amongst people of differing races, economic status, education levels, and ethnicities thereby building feelings of social capital (Lewis, 1996). Homogeneity in communities, particularly in terms of income and age, has been shown to reduce social capital (Ewing & Kreutzer, 2006).

### Property Values

For a homeowner, rising property values generally mean an increase in wealth and home equity, while falling values equate to an equally serious loss. Higher median area property values are associated with many advantages, including better city services, better schools, and well-maintained properties. However, an increase in the appraised value of a home, or business, will nearly always be followed by a proportional increase in annual property taxes for that parcel. Higher taxes are rarely welcome, although they do fund valuable public infrastructure and services. For homeowners with a fixed income, such as retirees, or experiencing difficulties with their mortgage payment due to a job loss or adjustable-rate increase, the additional expense of higher property taxes can have a significant impact on their risk of default and more generally on the household budget. For renters, their lease or rental terms may allow the cost of their rent to increase if the value or tax burden of the unit increases, again impacting their other household expenditures and potentially causing them to relocate to less expensive housing.
If property values rise sharply, housing affordability can become a serious issue. As previously discussed, affordable housing is defined as mortgage or rent expenses that equal less than 30 percent of a household’s income. Housing affordability is not just an issue for poor families; the inability to find affordable housing can affect middle income households as well. Lack of affordable housing can impact ability to pay for food or health care, and is linked to higher rates of homelessness (Lavin, Higgins, Metcalfe, & Jordan, 2006, Pollack, Egerter, Sadegh-Nobari, Dekker, et al., 2008). Foreclosure and housing unaffordability have been associated with higher rates of poor physical health, including chest pain, nausea, fatigue, and heart palpitations and severe psychological distress, including depression and anxiety (Cannuscio, Alley, Pagán, Soldo, et al., 2011).

Enhanced pedestrian facilities in the study area may increase housing process. Several measures of walkability appear to impact housing prices. Eppli and Tu (2000) discovered that homebuyers paid more for homes in neighborhoods that provided a good walking environment. The CEOs for Cities organization analyzed property values related to their “WalkScore” score, a measure which represents the number of destinations in walking distance, and found that higher scores could account for a more than $30,000 price premium in some markets (Cortright, 2009). Some consumer surveys have identified a stated preference for neighborhoods with sidewalks among potential homebuyers. Two earlier studies linked lower traffic volume with increased home values up to 18% (Bagby, 1980; Hughes & Sirmans, 1992). Although this could negatively impact the lower income families residing in privately owned rental properties, the enhanced pedestrian environment could potentially benefit AHA residents and more stable households.

### Design Elements Influencing Housing Health

The WHO defines housing as “the conjunction of the dwelling, the home, the immediate environment and the community.” By this definition, housing is not simply the residential unit or even the piece of real estate where it is located, but is instead the collective housing units, associated land uses, and social environment that compose a neighborhood. Therefore healthy housing is concerned primarily with the housing unit and the neighborhood in which it is situated. A healthy housing unit is characterized as being in good condition, free from pollutants and excesses in noise, temperature, and humidity. It is safe and not overcrowded and designed and maintained to reduce injury. And a healthy neighborhood promotes active living through good design — appropriate density, land use mix, street connectivity, awareness of the human scale, attention paid to aesthetics — and by being safe and perceived as safe. A healthy neighborhood buffers inhabitants from unhealthful things, whether social, economic, or environmental; and provides affordable and appropriate housing choices for residents in all stages of life.

Indoor air quality, temperature, humidity, noise, light, crowding, and general safety are all issues related to housing and health. For example, poor ventilation, cheap or old building materials, and inadequately functioning appliances can cause the release of toxic substances, such as carbon monoxide, nitrogen dioxide, asbestos, radon, polyvinyl chloride, pesticide residues, and volatile organic compounds that can contribute to a host of symptoms such as asthma, headaches, acute intoxication, lung cancer, hypertension, and bronchial obstruction (Krieger and Higgins, 2002; Jordan, 2006). Allergens produced by pests such as rats, dust mites, and roaches are associated with increased asthma attacks, particularly in children and the elderly (Krieger and Higgins, 2002).

Temperature and humidity are also factors in healthy housing. A constant and acceptable range of indoor temperature is important for the health of the household. The potentially fatal
consequences of heat exposure are perhaps better known than the increased risk of cardiovascular disease and arthritic problems associated with excessively cold indoor temperatures (Krieger and Higgins, 2002). Dampness, which breeds mold and is exacerbated by poor ventilation or the inability to dry out a space using adequate heating and cooling systems, is a contributing factor to a variety of chronic conditions such as asthma, sore throat, skin problems, and headaches. Dampness also attracts rats and mice, mites, roaches, and other pests which produce allergens that are a major contributing cause of asthma attacks (Krieger and Higgins, 2002). In preliminary research, mold growth has also been linked with fatigue, depression, cerebral strokes, heart attacks, and hypertension (Lavin, et al, 2006).

Additionally, noise and light in relation to housing conditions can impact health. Noise can be caused by many factors, from the location of a house near a freeway, airport, or busy industrial complex to crowded living conditions. The health impacts of noise are difficult to quantify, particularly when noise is an annoyance rather than excessive to the point of hearing damage. Research has found that the effects of noise manifest themselves differently among age groups. Symptoms for adults typically include depression and impacts on the respiratory, cardiovascular, and muscular-skeletal systems. Children experience respiratory symptoms, while the elderly have an increased risk of stroke (Lavin, et al, 2006). Exposure to excessive or prolonged noise, such as in multi-family units with poor insulation, can lead to psychological stress and activation of the sympathetic nervous system (Krieger and Higgins, 2002). Lack of light, particularly exposure to daylight, has a negative effect on psychological well-being and can have a detrimental effect on learning and motivation. Lack of light or poor lighting is also a contributing factor for physical injuries caused by falls and can increase feelings of isolation, apprehension, and fear (Krieger and Higgins, 2002; Lavin, et al, 2006).

Regarding the privately owned rental housing stock surrounding the AHA developments, the 1999 U.S. Census Housing Survey documented 2 million houses that had severe physical problems and an additional 4.8 million homes with moderate problems, both of which contribute to injury risk. This places nearly 7 million households at increased risk of physical injury from burns, falls, and fires (Krieger and Higgins, 2002; Lavin, et al, 2006). A 2002 study noted that 13.5 million non-fatal injuries occurred in or around U.S. homes in one year (Krieger, et al, 2006). Falls are the leading cause of injury-related visits to emergency rooms in the U.S. (Fuller, 2000), and children under the age of five and adults over the age of 65 account for the largest number of emergency department patients (CDC, nda). In 2003 more than 1.8 million seniors over the age of 65 were treated in emergency rooms for fall-related injuries, resulting in an annual cost of approximately $19.2 billion (CDC, nda). There is also evidence that people living in dwellings occupied by more than one household are at an increased risk of injury and even death from fire, burns, and scalding (Lavin, et al, 2006). Although these issues would likely not be relevant to the redevelopment of the AHA homes, again the surrounding Choice Neighborhood includes a number of older, substandard housing units, within which conditions leading to these negative health outcomes would likely be found.

Crowded living conditions have also been associated with the transmission of respiratory infections, such as tuberculosis, and ear infections in children and have even been linked to mold growth in homes due to increased humidity (Krieger and Higgins, 2002). Crowding also contributes to an increase in noise and can have detrimental effects on the development of children, who cannot study undisturbed. Lack of space for playing contributes to a decrease in physical activity in children and increases the risk of obesity, this may have behavioral manifestations (Lavin, et al, 2006).
Section 4  Appraisal

The design of the built environment in terms of architecture can also have an effect on social capital. The placement of entrances to residential units that are adjacent to or facing one another, or that are directly connected to pedestrian paths or active common spaces, increases the likelihood of social interaction. The inclusion of certain architectural features such as stoops, porches, and communal gathering spaces also increases social interaction, improving one's sense of emotional well-being (Lavin et al., 2006).

Housing design has an effect on the health of the inhabitants as it impacts the functionality of the housing unit for people of all ages and ability levels. The impacts can be physical, in terms of injuries sustained, or can be psychological, when the ability to function efficiently and effectively within the house and the neighborhood is reduced. Some issues with design have been addressed above. In addition, two groups for whom housing design is of utmost importance are older adults and those with disabilities. As people live longer, the number of individuals living with functional limitations and disabilities is on the rise (U.S. Census, 1997).

Community Facilities

The design and location of community facilities within the AHA properties and the larger neighborhood can have a positive health impact on the entire study area of the HIA. This includes the populations located outside and adjacent to the Choice Neighborhood boundary.

Parks and Greenspace

The presence of greenery has been linked to lower crime rates and better mental health, air quality improvement, and micro-climate improvement. Green streets are designed to improve storm water retention, enhance aesthetics, and reduce impervious surfaces through the careful use of materials and landscaping. The presence of a thriving natural environment can also boost property values.

Views of and access to nature have been shown to have positive health impacts resulting in decreased recovery times for hospital patients, decreased mortality in seniors, lower blood pressure and decreased anxiety, and higher levels of attention in school age children. (Lavin et al., 2006)

A ten-year study of patients recovering from surgery showed that patients with a view of trees had shorter hospitalizations (8.0 days compared 8.7), needed less pain medication, and had fewer negative comments in nurses' notes than did patients with window views of a brick wall (Ulrich, 1984). Trees in urban areas may also reduce asthma, as Lovasi et al. (2008) found that children exposed to increased density of street trees by one standard deviation or more experienced a lower prevalence of asthma, although hospitalizations for asthma did not decline. Greenspace has also been linked to mortality rates in elderly individuals. Five-year survival rates for senior citizens improved when there was space for taking a stroll or parks and tree lined streets near their home (Takano, Watanabe & Nakamura, 2002).

Access to greenspace may also reduce residents' risk of being overweight or obese. In Bristol, England, a survey found that individuals' use of greenspace decreased as distance from greenspace increased, and those with greater access to greenspace were less likely to be overweight or obese (Coombes et al. 2010). In addition, respondents with greater access to greenspace were more likely to achieve the recommended amounts of daily physical activity, a finding which remained significant after controlling for individual characteristics. In a review of prior quantitative research on the subject, Lachowycz and Jones (2010) found that 68% of the 60
studies included identified positive or weak associations between greenspace use or access and indicators for obesity and physical activity.

As previously discussed in the section of this report, Built Environment and Birth Outcomes (page 30), in Portland, Oregon, a survey of all live births from 2006 to 2007 found that increased presence of urban trees within 50 meters (164 feet) of the mother’s home reduced the risk that a baby would be small for its gestational age (Donovan et al. 2011). The authors of the study hypothesized that greater tree canopy cover might reduce stress or the impact of stressful life events, increase perceived neighborhood social support, or indicate greater opportunities for physical activity. Any of these mechanisms are associated with improved birth outcomes and increased birth weight (Donovan et al. 2011).

In another study, Dadvand et al. (2012) found that pregnant women in Barcelona with greater levels of greenspace surrounding their residences experienced both improved air quality and higher levels of physical activity. In a second study, Dadvand et al. (2012a) found that among births at a hospital in Barcelona from 2001-2005, infants born to mothers with the lowest levels of education had higher birth weights when their mothers lived in areas with greater levels of greenspace. This effect was not present among mothers of higher socioeconomic status.

### Trail Access

Like parks, trails are also important places where physical activity occurs. In a national U.S. sample, people responded that they engaged in physical activity on walking/jogging trails 24.8 percent of the time (Brownson, Baker et al. 2001).

Trail use is often related to trail accessibility and other aspects such as connectivity, continuity, length of routes, presence of bike lanes, and signage (Nelson and Allen, 1997). Additional evidence of the link between access to trails and increased use comes from the transportation literature. The Federal Highway Administration (FHWA, 1994) reported that cities with higher levels of bicycle commuting had 70 percent more bikeways per roadway mile, six times more bike lanes per arterial mile, and tended to be laid out in grids.

Another study in rural Missouri found that after walking paths were introduced 55.2 percent of trail users increased the time they spent walking (Brownson, Housemann et al., 2000; Brownson, Baker et al., 2001). Many people who were not previously walking for exercise reported they were now doing so and that others who were already active increased their amount of activity because of the trail. Interestingly, the study also found that groups which are often considered ‘hard to reach’ were using the trails: women and individuals with less than a high school education increased their walking the most.

Barriers to trail usage can be analyzed to ascertain some of the determinants of use. Built environment barriers were noted in several studies. Troped, Saunders, et al. (2001) found that increases in self-reported and actual distance was related to decreased use of bikeway. There is an inverse relationship between perceived distance from the trail and the likelihood that trail was used—the greater the distance, the less likely the use of the trail. Not having to cross a busy street and not having to cross a steep hill (greater than 10 percent change in slope over 100 meters) were related to increased use of the Minuteman Bikeway in Boston.

### Access to Healthy Food
Section 4

Larson, Story, and Nelson (2009) reviewed major works addressing the relationship between neighborhood access to healthy food options (supermarkets and restaurants) and the influence on health factors such as dietary intake and risk of obesity. Their review found that residents of neighborhoods with greater access to supermarkets and large grocery chains that offer healthier food options such as fresh fruits and vegetables tend to have healthier dietary intake and lower risk of obesity than individuals with limited access to these establishments and greater access to convenience stores. Residents of low income, minority, and rural communities tend to have less access to retail establishments with healthier food choices (supermarkets and large groceries) (Larson et al., 2009). Likewise, in a study of 10,763 individuals living in 207 different census tracts, Morland, Diez Roux, and Wing, (2006) found that the presence of a chain supermarket in the census tract was associated with lower rates of overweight and obesity, while the presence of convenience stores and other grocery stores correlated with higher rates of overweight and obesity.

The nutritional value of products offered at food stores (whether convenience stores or grocery stores) and higher prices impact consumption of fruits and vegetables, sugar, and fat, particularly for disadvantaged families and teenagers (Ball, Timperio, & Crawford, 2009; Powell, Auld, Chaloupka, O'Malley & Johnston, 2007). Additionally, a high level of proximity to restaurants and their overall density shows correlation with poor food consumption patterns, BMI, and related diseases, particularly for fast food restaurants (Morland & Evenson, 2009; Powell, Chaloupka, & Bao, 2007; Treuhaft & Karpyn, 2010).

Upon review of research concerning food deserts and the impacts of increased access to healthy foods on health factors, Treuhaft and Karpyn (2010) concluded that individuals with increased access to full service restaurants tended to have better dietary intake and reduced risk of obesity due to the quality of food available and the cost constraint of meals from full service restaurants in comparison to fast food establishments. They also found that the introduction of new and improved healthy food retail in underserved communities adds to job creation in those communities and contributes to the revitalization of low-income neighborhoods.

Two recent studies have contradicted the health effects of so-called food deserts, areas which lack access to full-service grocery stores. In a survey of children and adolescents in California, An & Sturm (2012) failed to find a relationship between either access to supermarkets or exposure to fast food and convenience stores and BMI or diet quality. Although the study was limited by small size, low response rates, and the issue of unreliability in surveys, the researchers suggest that access to transportation may be a more significant factor in determining access to healthy food than is the proximity of such food (An & Sturm 2012). In an analysis of the Early Childhood Longitudinal Study, a national survey following children from kindergarten, Lee (2012) found that while children in poor or minority neighborhoods receive greater exposure to fast food and convenience stores, they also have greater access to supermarkets than their counterparts in more affluent neighborhoods. Moreover, Lee did not find evidence associating increases in children’s BMIs with their access to sources of unhealthy foods. Instead, increases in children’s BMIs are primarily associated with socioeconomic characteristics. However, the relationship between health and food consumption is complex with interrelated connections between retail availability, cost, cultural preferences, and presence of alternative sources (such as food gardens or farm stands) (Sparks, Bania, & Leete, 2011) and is an area of ongoing research activity and interest.

Urban Agriculture
Community gardens have long been used as a way to improve neighborhood residents’ mental health and to improve healing. More recently, these gardens have also been seen as a way to improve access to healthy food, increase physical activity, and build neighborhood social capital (Twiss, et al, 2003).

Shinew et al. (2004) noted that community gardens created through the conversion of vacant or derelict properties can transform neighborhood liabilities into assets. In a survey of 63 community gardens from 20 gardening programs in upstate New York, Armstrong (2000) found that community gardens increased neighborhood pride, improved the aesthetic appearance of neighborhoods, and strengthened neighborhood social networks. Community gardens can also serve as a highly visible tool in community health promotion efforts (Twiss et al. 2003). Alaimo et al. (2008) reported that households which participated in community garden projects in Flint, Michigan were three times as likely to participate in other neighborhood beautification projects.

In a school gardening program in West Hollywood, California, which incorporated nutrition and physical activity education, students reported a 6% increase in physical activity sessions and a 10% increase in consumption of fruits and vegetables (Twiss et al. 2003). Alaimo et al. (2008) also found a significant increase from 3.3 to 4.4 daily servings of fruits and vegetables among households which participated in community gardening projects compared with non-participating households. Additionally, participating households were significantly more likely to consume at least five servings of fruits and vegetables daily (32.4 percent compared to 17.8 percent) (Alaimo et al. 2008).

Community gardens may be well-suited to strengthen low-income communities, according to several studies. Armstrong (2000) found that community gardens were particularly valuable in low-income neighborhoods, where they could serve as the locus around which other neighborhood improvements could be organized. In a survey of community gardeners in Philadelphia, Hanna and Oh (2000) found that community gardens can build social capital in inner-city neighborhoods, by strengthening neighborhood social networks through interaction between members of the community. Hanna and Oh also noted the potential for community gardens to add to the neighborhood economy, finding that some gardens were capable of producing output for sale to the local community and area restaurants. Among community members in Flint, Michigan, Alaimo et al. (2010) also found that those who participate in either community gardening activity or neighborhood meetings have higher perceptions of neighborhood social capital, with those who participated in both activities having the highest perceptions. This suggests that community gardens have the potential to increase neighborhood levels of social capital among those who participate.

Gardens also have the potential to promote positive interactions in diverse neighborhoods. In a randomized survey of 180 participants in community garden programs in the St. Louis, Missouri region, Shinew et al. (2004) found that community gardens may encourage interaction between white and African-American community members. Most gardeners reported participating in a community garden of which the majority of members were of their own race, often reflecting the makeup of the neighborhoods in which they were located. However, most gardens were determined to be sites of high racial interaction, with at least 20% of the participants being of a different race than the majority of participants, and for African-American participants, most gardens were more racially mixed than the gardeners’ neighborhoods.

In a review of the California Healthy Cities and Communities (CHCC) program, Twiss et al. (2003) found that keys to success for community gardens included local origination and leadership,
strong ties between the gardens and the communities in which they were located, and the provision of skill-building opportunities for residents and staff to learn more about both gardening and the leadership and organization of community programs.

### School Facilities

There are two schools located in the Choice Neighborhood, Lincoln Elementary Magnet School and Albany High School. The location of these two community facilities provides opportunities for the neighborhood which could result in positive health outcomes.

### Joint Use Agreements

One strategy to increase physical activity in neighborhoods is to establish a joint use agreement between communities and schools that have existing exercise facilities. Such agreements have been developed to improve the health of communities while sharing and conserving resources (jointuse.org). Agreements can vary in scope and are largely defined by the communities and school districts that create them, and are tailored to local needs and circumstances (Cooper & Vincent, 2008). Choice Neighborhood children and adults would benefit from the additional opportunities for physical activity that these resources could provide.

### Walk to School

Research has shown that walking to school has positive health benefits for children, particularly elementary school aged children. Currently very few of the children residing in the neighborhood attend the Lincoln Elementary Magnet School located in the neighborhood. Instead, they are bussed to Northside Elementary School located two miles away and therefore not easily accessible on foot or by bicycle.

Children and adolescents who participate in physical activity have improved performance in the classroom (Active Education, 2009). students who take advantage of “active” transportation – through walking, cycling, or another form – to get to school have higher levels of physical activity and better cardiovascular fitness than students who do not actively commute to school (Active Bodies, Active Minds, 2010). Additional benefits that could be realized from neighborhood children having the ability to walk to their school include:

- Regular participation in physical activity is associated with improved academic performance
- Students who are physically active and fit are more likely to perform well in school than their sedentary peers
- Students who engage in moderate to vigorous physical activity experience the greatest academic achievement gains (Active Bodies, Active Minds, 2010).

### Safety and Security

Stakeholders indicated that crime is both a perception and a reality in the Choice Neighborhood.

### Intentional Injury and the Built Environment
Tract-level studies have demonstrated disparities between indicators of physical and social disorder as well as health disparities between neighborhoods. In Illinois, a study which examined the health effects of neighborhood disadvantage found that disadvantage was associated with disorder and a breakdown in social control (Ross & Mirowsky, 2001). Disadvantaged neighborhoods are often marked by concentrated poverty, low rates of homeownership and college education, and single-parent households. The study examined the effects of these variables on physical activity, stress and fear. Neighborhood disadvantage and disorder can contribute to low health status by inhibiting physical activity via walking, and cause stress, which may increase vulnerability to infection and disease. However, the hypothesis linking neighborhood disadvantage to decreased walking was not supported by the results. The study found support for the mediation factor of social and environmental disorder to explain the association between neighborhood disorder and health, especially relating to the health impacts of stress caused by crime and fear of crime.

The connections between intentional injury, concentrated disadvantage and informal social controls were explored further in subsequent studies. One study investigated the hypothesis that collective efficacy mediates the association between violence and economic disadvantage at the neighborhood level (Sampson, Raudenbush & Earls, 1997). This argument suggests that the ability of neighbors to maintain informal social order breaks down in areas of concentrated poverty and leads to higher incidence of interpersonal violence. Controlling for all other effects, collective efficacy was negatively correlated with interpersonal violence. An interesting result of the study was that the effects of social composition on violence were reduced when collective efficacy was added to the models, implying a mediating effect between collective efficacy and neighborhood disadvantage. The statistical significance of collective efficacy held when controlling for other social variables, past homicides, and predominantly African-American neighborhoods (Sampson, Raudenbush & Earls, 1997). The results of this study were supported by later research (Browning, Feinberg & Dietz, 2004; Carr, 2003).

The rate of intentional injuries due to crime and violence can be influenced by the built environment. Such crimes occur at lower rates, all other things being equal, in communities where there are more trees, where neighbors are acquainted, where citizens informally patrol the street from windows and sidewalks, and where people can get to work even if they don’t have a car (Goodell & Williams, 2007).

A study of property crime in Seattle found that land-use and built environment characteristics had a greater effect on crime than demographic characteristics, especially linking proximity to highways and risks of auto theft and burglary (Matthews et al. 2010). These place-based studies evaluating the associations between built environment features and crime point to the potential of

![Figure 7: CPTED conceptual model (Cozens, Saville & Hillier, 2005)](image-url)
built environment interventions to create safer neighborhoods and public spaces. The Crime Prevention Through Environmental Design (CPTED) literature provides some evidentiary support for the efficacy of individual and multiple place-based crime prevention initiatives, intended to change behavior of potential perpetrators by altering the physical environment where crimes occur (Cozens et al. 2005). The “first-generation” CPTED strategies may involve efforts to increase surveillance of urban spaces, support “safe” activities, maintain the appearance of safe places or control access points. For example, built environment features such as lighting, street-facing windows or limited shrubbery may increase informal surveillance and reduce crime. Additionally, well-maintained places with high occupancy may reduce the appearance of a particular urban area as a “hot spot” for crime, as stated in the “broken windows” theory (Wilson & Kelling, 1982). Although CPTED studies also lend some support to environmental design that encourages pedestrian flow, crowding may also lead to opportunities for crime. In general, although CPTED interventions have been largely successful in the literature, it is often difficult to separate out effects of individual strategies (Cozens, Saville & Hillier, 2005).

Social “disamenities” such as crime rates may also impact the uses of neighborhood physical activity sites. Addressing the paradox of higher obesity rates among African-American and Hispanic residents given greater park access in New York City, a study examined the prevalence of neighborhood “disamenities” and proximity to parks (Weiss et al., 2011). The study found that African-American and Hispanic residents have greater access to parks but are also exposed to greater “disamenities,” such as undesirable land uses, crime (measured by homicide rate), and traffic hazards. This study echoes a larger literature on the existence of crime and crime perception as a major deterrent to physical activity and health promotion (Foster & Giles-Corti, 2008; Harrison, Gemmel & Heller, 2007).

Fears of traffic or crime also impact travel choices and property values. Perceptions of crime may often influence residential choices, and perceptions often reflect common stereotypes of the relative safety of urban vs. suburban areas (see Poe, 2002). A cross-sectional study of suburban housing developments in Western Australia and perceptions of crime suggested that urban design can create safer spaces with robust bicycle and pedestrian infrastructure, pavement and roadside design elements that discourage speeding, and homes and businesses that engage with the public right-of-way to create a lively and continuously-monitored space (Foster, Giles-Corti & Knuiman, 2010).

Crime and intentional injury rates have been linked with a variety of social and environmental design factors. Although neighborhood-level disparities point to a strong effect of socioeconomic status on crime rates, literature demonstrates the effects of social capital and informal social control on crime and the perceptions of crime. The CPTED literature suggests that characteristics of the built environment may encourage or inhibit criminal behavior in certain neighborhoods, although other studies question the application of physical solutions to social problems.

Mixed-income development has been proposed as a means of mitigating the effect of concentrated poverty as it relates to crime and intentional injury (Jones-Wilson, 1987). Although causality was not investigated, a working paper reported that crime rates dropped significantly after housing projects in Atlanta were revitalized into mixed-income communities (Boston, 2005). Also, a study of a mixed-income revitalization project in Chicago supported the proposition that mixed-income developments experience reduced crime rates (Rosenbaum, Stroh & Flynn, 1998), although this effect may be attributable to strict screening processes and management rather than mixed-income housing (Smith, 2002). Further, some studies have found that the move toward mixed-income housing developments is a less significant factor for social capital (a
correlate of reduced crime rates) than the presence of neighborhood services and facilities (Dekker and Bolt, 2005; Curley, 2010).

### Transportation

There are currently two one-way street located in the Choice Neighborhood. These streets have been cited by stakeholders as a deterrent to physical activity, recreational walking, and increase the perception of lack of safety in the neighborhood due to speeding.

#### Neighborhood Impact of One-Way Streets

For years, one-way streets have been common in downtown areas across the US. In older downtowns, narrow two-way streets built before the prevalence of the automobile were converted to one-way to enable smoother traffic flow, while more recently, purpose-built one-way streets were combined with long blocks to enable smooth, fast, and convenient automobile traffic flow (Chiu et al. 2007). In addition to increasing traffic capacity by 10-20 percent, Walker et al. (2000) also note that one-way streets ease the management of downtown traffic signals, reduce the potential conflict between turning and through traffic, and reduce the impact of cars and trucks in curbside loading zones. According to Stemley (1998), one-way networks experience 50 percent less intersection delay, leading to overall travel times being reduced by 22-33 percent. In addition, one-way networks can reduce “stop-and-go” traffic by up to 66 percent (Stemley 1998). In addition, it is suggested that this improvement in traffic flow can lead to overall improvement in air quality.

Although the construction of one-way streets clearly enables a faster flow of traffic, this is precisely why these streets create an environment that is hostile to pedestrians and why they are ill-suited to a residential neighborhood, such as the Choice Neighborhood, particularly in a location separating the neighborhood from an elementary school. A one-way street network has been shown to have a greater prevalence of pedestrian-vehicle accidents and injuries on one-way streets (Walker, et al., 2000). One-way networks force drivers to turn more frequently, with each additional turn representing an additional point for pedestrian-driver conflict. In a study of child pedestrian injuries in Hamilton, Ontario, Canada, Wazana et al. (2000) found that these injuries were 2.5 times higher per kilometer of roadway on one-way streets than on two-way streets. The authors attributed this in part to factors seen in one-way streets including higher traffic speeds, less attentive drivers, and that children may be inexperienced in crossing streets with traffic coming from only a single direction. In addition, the increase was magnified in areas with greater concentrations of low-income residences, with child pedestrians in areas of lower socioeconomic status experiencing injury rates between 2.4 and 7 times those in higher SES areas (Wazana et al. 2000).

Given these arguments in favor of two-way traffic, cities including Albuquerque; Tucson; Tampa; Alma, Michigan; Pittsburg, Kansas; and Austin (Chiu et al. 2007), as well as Berkeley; Cambridge; Chattanooga; Cincinnati; Denver; Des Moines, Iowa; Lansing, Michigan; Louisville; Palo Alto; Portland, Oregon; Sacramento; San Jose; Seattle; and St. Petersburg (Sisiopiku and Chemmannur 2010) have considered or implemented proposals to convert one-way streets to two-way in recent years, citing factors such as pedestrian ease of navigation and friendliness as well as ease of navigation for drivers and transit users. The following section highlights two cities that have considered or implemented one-way to two-way street conversions: Birmingham, Alabama and Lubbock, Texas.
In its 2005 city center plan update, the city of Birmingham, Alabama resolved to convert several pairs of one-way streets to two-way operation. Sisiopiku and Chemmanur (2010) analyzed the potential impacts and feasibility of this conversion by examining the effects of a single pair conversion. In this study, the authors found that converting the two one-way streets in question to two-way operation would not significantly change the total vehicle miles traveled (VMT) at either the current level of demand, or in the case of 20-40 percent increased demand. The simulation also found that converting the two streets to two-way use would not have any negative effects on traffic circulation or delays.

**Lubbock**

In Lubbock, Texas, many downtown streets were converted to one-way traffic in the mid-1900s to accommodate high traffic volumes through the downtown area (Hart 1998). After 1970, however, downtown business began to decline in favor of development outside of the city core. In 1994, residents and businesses in downtown Lubbock petitioned the city government to convert Main Street back to two-way use, which would also require the conversion of Main Street’s complementary one-way street, 10th Street. Initially concerned about the cost of conversion and the potential for increased congestion in some blocks, the city denied the petition. However, residents appealed the decision, at which point the city undertook a more detailed analysis and found that with combined traffic volumes on Main and 10th Streets below 1,000 vehicles per hour during peak traffic, congestion was not a significant concern. Conversion was approved and completed in 1995. Between 1994 and 1998, traffic volumes on the converted streets mostly held steady, with the exception of one segment where volumes decreased, probably due to the elimination of the need for traffic to circle on those blocks to access drive-in banks (Hart 1998). Collisions did not appear to have changed significantly. The city’s traffic management department did not note any negative reactions to the conversion. In addition, Hart (1998) noted that the city was asked to undertake studies assessing the conversion of another pair of one-way streets, suggesting that the initial conversion was positively received by the local business community.

**Enhanced Pedestrian Facilities**

Although the conversion of the existing one-way streets back to two-way in the Choice Neighborhood might be a more long-term strategy to increase the level of pedestrian activity in the neighborhood, there are a number of enhancements that could be implemented more immediately and at lower cost to positively impact the rate of physical activity.

Roadways will typically carry pedestrian and bicycle traffic, even if no facilities are provided for them. Therefore, road design is a major determining factor in the rate and severity of pedestrian crash injuries. Traffic calming practices are infrastructural changes, small or large, which are intended to reduce vehicle speeds. In a survey, Morrison, Petticrew & Thomson (2004) found that 20% of respondents were more likely to walk following the installation on a major road of speed cushions (raised sections of the roadway designed to force drivers to slow), crosswalks, and on-street parking spaces. In addition, respondents reported statistically significant increases in physical activity after the implementation of the traffic calming measures, and counts of pedestrians in calmed areas increased significantly.

Bunn, et al. (2003) conducted a meta-analysis on the effectiveness of area-wide traffic calming to prevent traffic injuries. They identified sixteen studies that used controlled before and after or randomized controlled design to isolate the effects of generalized traffic calming techniques, such as road narrowing, diverters, or changes to road surface texture. The studies also measured the
impact on road safety, indicated by the rate of all crashes, injury and fatality crashes, or fatalities. This meta-analysis found some variability in the results of the included studies, but concluded from the pooled results that a comprehensive traffic-calming initiative could reduce traffic-related injuries and deaths by 11%.
5. Recommendations

The following recommendations for the Transformation Plan have been synthesized from the data collection and analysis of existing conditions and health impacts, review of evidence related to critical issues, and from stakeholder input.

5.1 Vulnerable Populations

There is increasing evidence to support the conclusion that lower socioeconomic groups have poorer health outcomes because they live in unhealthy environments (Baum & Palmer, 2002). One study indicated that residents of high poverty neighborhoods live on average eight years less than non-poverty neighborhoods (Bhatia, Rivard & Seto, 2006). The following series of recommendations address the low socio-economic status (SES) found in the Choice Neighborhood.

Income and Poverty

- The redevelopment proposed by the Transformation Plan should contain a provision for as many of the jobs created by the new land uses and services (as feasible) to be filled by neighborhood residents. However, there needs to be a balance between quality and quantity of jobs. A good percentage of jobs should offer full-time opportunities with benefits to truly influence positive health outcomes.

- The status of the neighborhood is unlikely to transform from the existing low SES population with the low levels of educational attainment that are currently achieved by the neighborhood residents. Therefore the population should be encouraged and supported in efforts to seek/complete higher levels of education in order to reduce rates of health conditions associated with lower SES. In order to truly realize a higher health status, both a greater quantity of jobs and higher quality of jobs need to be held by neighborhood residents. Jobs should be a good fit for skills of local residents, otherwise, educational and training opportunities should be provided to ensure a better match.

Diabetes

- Poor diet, lack of physical activity and obesity are primary risk factors for diabetes (in addition to several other chronic disease such as cancer and heart disease). The Transformation Plan should include a mix of land uses to create walkable destinations which will encourage both utilitarian and recreational physical activity for neighborhood residents. The additional mix of uses and walkability will also benefit adjacent neighborhoods (Census Tract 7) and foster greater cohesiveness across historic barriers.

- Community gardens have been shown to increase fruit and vegetable consumption. Both adults and children can benefit from a healthier diet as well as the increased rates of physical activity provided by gardening. This activity can also serve to reduce the incidence of diabetes as well as aid in dietary intervention, an important therapeutic component of diabetes management. The land use and design redevelopment component of the Plan should include an opportunity for a community garden. (Further details are provided below on page 51: Food Access and Urban Agriculture (Community Gardens).)
Asthma is a complex disease and interventions must incorporate the areas of healthcare, the home and built environment, and the larger social realms to be effective. Since asthma has been found to be a significant problem in public housing nationwide, and is responsible for a number of Emergency Room visits within the neighborhood that includes the AHA housing communities, the Transformation Plan should specifically incorporate elements targeted to reduce asthma in the residents.

- Since the data shows a high incidence of asthma and respiratory illness in the Choice Neighborhood, which is not found in the adjacent higher SES census tract, this would suggest that the cause is not due to larger air quality issues, but more localized. Research has shown that children who have been exposed to environmental tobacco smoke (ETS) are more likely to have asthma and to die from asthma (Bryant-Stephens, 2009). Therefore the AHA should consider a smoke-free policy for their properties and restrict smoking in common areas, such as porches, where children could also be exposed to environmental tobacco smoke from neighbors.

- Demolition of the older AHA properties, including McIntosh Homes (and potentially the Golden Age development) could decrease the rates of asthma among residents due to improved building conditions. Other environmental interventions that can be implemented in the existing or new AHA buildings to reduce or remove asthma triggers include:
  - Reduction of indoor dampness or mold through construction techniques such as installation of moisture barriers and adequate ventilation
  - Reduction of environmental toxins by avoiding the use of cheap building materials such as low-formaldehyde plywood and vinyl wallpaper
  - Multiallergen reduction through pest control to reduce cockroaches and dust mites

- Healthcare strategies need to be aimed at improved spatial and financial access to healthcare, quality improvement programs (adherence to asthma guidelines by physicians) and asthma management programs.

- Social interventions should focus around individual and community empowerment and education, delivered in a culturally sensitive manner, to promote better self-management of asthma. Community partners such as faith-based organizations and schools can become crucial allies in implementing multifaceted, evidence-based, community-driven asthma programs. Research has shown that community participatory models for health intervention are particularly effective because they help to customize scientific knowledge to local cultural requirements, increasing their credibility and acceptability.

- Recent epidemiological research has demonstrated a link between obesity and the onset of asthma in adults and children. The integration of increased opportunities for physical activity through community gardens, parks, and the development of a mix of uses could
provide increased opportunities for physical activity and could have a positive health impact on asthma rates.

### Maternal Health

Maternal health and negative birth outcomes are a specific health issue in the Choice Neighborhood. Therefore the Transformation Plan should incorporate the following strategies which have been shown to have a positive impact on health outcomes.

- Negative maternal health has been associated with neighborhoods with housing damage, exposure to stress and stressful conditions, housing instability, and poor housing quality. Therefore the Plan should strive to reduce stress, instability, and poor housing quality. **To the extent possible, surrounding vacant and substandard housing stock in the neighborhood should be demolished.** The residents should also have a clear understanding of housing changes to reduce feelings of stress and loss of control. Potential housing changes and options for residents should be clearly communicated through an organized public education/involvement effort related to the redevelopment plan.

- In more highly segregated metropolitan areas, African-American women are more likely to give birth to low birth weight infants than African-American women living in less highly segregated areas (Ellen, 2000). **The redevelopment of the neighborhood should strive to create less racially segregated conditions, such as through mixed-income development initiatives.** Reducing segregation has been shown to have a positive impact on maternal health and a reduction in low birth weight infants.

### 5.2 Redevelopment Strategies

Neighborhood change, whether in terms of gentrification and displacement or increasing crime and deterioration, can be stressful for long-time residents who feel unable to control the events surrounding them. This can have negative mental and physical health repercussions (Baum & Palmer, 2002).

- **The redevelopment and relocation process should include a transparent strategy that is clearly and consistently shared with residents who are potentially affected by the changes.** A feeling of lack of control is often cited by residents of public housing redevelopment projects and has negative mental health and stress implications.

- Redevelopment provides an opportunity to improve access to healthcare in the area. The following strategies can be incorporated within the redevelopment plan:
  - Encourage development of additional not-for-profit facilities to provide larger amount of uncompensated/subsidized care; should be well-matched with community health needs.
  - Spatial location of healthcare should be carefully planned based on population needs to reduce geographical barriers to access; adequate infrastructure should be provided for walking/transit access
  - Development community partnerships and programs (health promotion, education) with Phoebe Putney hospital
- Co-ordinate partnerships between healthcare facilities and local community organizations (faith-based) for program and service delivery

### Social Capital
- Involuntary displacement and gentrification diminish social capital by removing people from their established social networks and support systems, which has physical and mental health implications (Bhatia et al., 2006).

- **The on-going process to rename the neighborhood to promote a new positive identity for the neighborhood should be enhanced and encouraged.** These activities promote a positive sense of neighborhood identity and have positive health impacts. For example, neighborhood identity could be strengthened through public art or wayfinding/gateway signage welcoming residents and visitors to the neighborhood.

- Similarly, the holiday community building activities that have taken place over the past year which incorporated adjacent neighborhoods also promote a strong neighborhood identity. These activities also promote interaction between diverse groups which has been shown to provide positive health benefits. These programs and activities should also continue to be encouraged and expanded through the Transformation Plan.

- Increasing land values and relocation of public housing residents could break important community ties and reduce social capital among residents; decreased resilience from increase in stress; increased mental health issues; and increasing rents could adversely affect local affordability for renters forcing them out (gentrification). In addition, increasing rents and taxes could cause redistribution of household budgets and compromises on other daily necessities such as healthy foods. Mitigation and management of these impacts could include monitoring of displaced populations, particularly elderly and immobile populations to track mental health status due to lost community ties and other support structures.

- Relocation plans needs to cater to short-term and long-term well-being of resident populations, including employment, housing and social support needs.

### Healthy Housing Conditions
- Exposure to excessive or prolonged noise, such as in multi-family units with poor insulation, can lead to psychological stress and activation of the sympathetic nervous system (Krieger and Higgins, 2002). **The design of the new housing should include adequate insulation and sound dampening to reduce stress for residents.**

- Lack of light, particularly exposure to daylight, has a negative effect on psychological well-being and can have a detrimental effect on learning and motivation. **The design of the new housing should take advantage of and maximize natural daylight.**

### 5.3 Community Facilities
The following community facility development strategies are recommended.

- Redirect increased tax revenue into community facility development
Section 5  Recommendations

- Develop appropriately programmed community facilities (community centers, health centers) in close proximity to need-based populations to ensure maximum utilization

- Improve accessibility to community facilities through better infrastructure development (walkability, public transit, safety)

**Crime Reduction Strategies**

- Crime reduction promotes healthy behaviors such as walking and reduces fear and stress. Crime tends to be concentrated at “hot spots,” where the risk of victimization is higher than average (Eck et al., 2005). The Choice Neighborhood has been identified as a crime hotspot by stakeholders and law enforcement. The literature supports the theory that neighborhoods with obvious signs of disorder are more likely to attract crime. The “broken windows” theory (Kelling & Wilson, 1982) posits that obvious signs of disorder, such as broken windows, vandalism, and litter, suggest to would-be criminals that law enforcement and residents are not paying attention or do not care and that the location is prime for criminal activity.

- Efforts towards “situational crime prevention” involve making changes to the surrounding environment to make it un-conducive to criminal activity. Often these changes involve “opportunity blocking,” or using environmental cues to make committing a crime less attractive to the potential offender (Eck, 1996). Urban design elements in the Transformation Plan can create safer spaces through the following:
  - Windows that face the street to increase informal surveillance (“eyes on the street”)
  - Bicycle and pedestrian infrastructure
  - Bright lighting
  - Pavement and roadside design elements that discourage speeding (i.e. vertical or horizontal traffic calming measures)
  - Homes and businesses that engage with the public right-of-way
  - Eliminate “bad neighbors” (undesirable land uses such as vacant buildings, liquor stores, and pawn shops) through potential zoning changes or code enforcement strategies.
  - Regular maintenance of neighborhood conditions to avoid symbols of neglect and abandonment

- Stakeholders have also expressed concerns over gang-related crime in the neighborhood. Environmental design recommendations listed above can also inhibit congregations of gang members. Educational, employment and other rehabilitative opportunities should be offered to promote positive identity development and prevent gang formation or proliferation.

**Trails**

- The Transformation Plan should include design elements that create connectivity to the Riverwalk Trail located 0.5 miles to the east of the Choice Neighborhood boundary along the Flint River. Since trail use is related to trail accessibility (or perceived trail accessibility) and other aspects such as connectivity, continuity, length of
routes, presence of bike lanes, and signage, these are some design elements that could be utilized to increase awareness and connectivity with the trail.

- In addition creating a pedestrian friendly crossing of busy streets between the neighborhood and the trail will be essential. Any street crossing along the route should be pedestrian friendly, since crossing a busy street en route to the trail is a deterrent to trail use.

- If new trails and access features are created, they should be equally accessible from all neighborhoods and for all vulnerable populations.

### Parks and Greenspace

- **The Transformation Plan should include pro-social places (i.e. parks, schools, recreation centers) which are correlated with trust, community participation and block satisfaction.** In addition, a high level of accessibility to these institutions is associated with higher levels of social capital (Roman & Moore 2004).

- In addition, streets, plazas, parks, and even vacant storefronts can become catalyzing spaces that attract new attention. Programs that feel inclusive for all community members and express positive values can promote mental wellness (West & Scott-Samuel, 2010).

- The health benefits of active and passive recreation are well documented in the fields of landscape architecture and environmental psychology. Active recreation (community gardens, playgrounds) increases physical activity, an important precautionary measure against obesity and related diseases. Passive recreation (natural areas, access to River Walk Trail) or simply being in natural environments has mental health benefits through stress reduction. Both these spatial typologies can be provided in the design of greenspace and parks.

### Joint Use Agreements

- **State statute in Georgia authorizes the use of school property by a community and also permits joint establishment or joint use of property and facilities, including K-12 Schools and state universities and colleges (NPLAN, 2010).** Several jurisdictions in Georgia are establishing joint use agreements which could be seen as precedent for this type of agreement for the City of Albany. For example, Cook County, GA, and the City of Adel are currently working to formalize their joint use agreement between schools and the public for after-hour use through the Cook County Family Connection (HKHC Case Examples: Joint Use Agreements). The City of Dunwoody, GA, has looked into developing a joint use agreement in order to take advantage of underutilized land at the Peachtree Charter Middle School (Stanton, 2010). **The Transformation Plan should include the initiation of a joint use agreement with Albany High School and Lincoln Elementary Magnet School that includes physical activity programs for neighborhood residents to take full advantage of these neighborhood facilities.**

- Examples of joint use programs and facilities/grounds are provided in the following Table 13.
Section 5  Recommendations

Table 13: Types of joint use programs and facilities/grounds

<table>
<thead>
<tr>
<th>Joint use programs</th>
<th>Joint use facilities/grounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organized after-school and weekend athletic activities and events for adults and youth</td>
<td>Libraries</td>
</tr>
<tr>
<td>Informal, or “open,” public access/use of school grounds and/or facilities</td>
<td>Gymnasiums/other athletic facilities</td>
</tr>
<tr>
<td>Child care</td>
<td>Playgrounds and other outdoor athletic space</td>
</tr>
<tr>
<td>Adult/youth education</td>
<td>Classrooms</td>
</tr>
<tr>
<td>Community gardens</td>
<td>Multi-purpose rooms</td>
</tr>
</tbody>
</table>

Cooper & Vincent, 2008

### Food Access and Urban Agriculture

- In a school gardening program in West Hollywood, California, which incorporated nutrition and physical activity education, students reported a 6% increase in physical activity sessions and a 10% increase in consumption of fruits and vegetables (Twiss et al. 2003). The Transformation Plan should include the initiation of a neighborhood community garden that actively engages children. If this activity draws children from adjacent neighborhoods, the gardening activity will also provide an opportunity for interaction among children of diverse backgrounds, increasing social capital.

- Studies have shown that community gardens can add to the neighborhood economy, finding that some gardens were capable of producing output for sale to the local community and area restaurants (Hanna and Oh, 2000).

- Downtown Albany has a farmer’s market coordinated by the Southwest Georgia Food System Initiative. The goal of the program is to connect local farmers with local consumers (there is substantial agricultural production in the region but most is exported). A particular focus of the program includes facilitating the process of growing food (sustainable/environmentally friendly, chemical free, organic) and distributing it to markets (rural grocery stores owned by residents, farmer’s markets, restaurants, schools, hospitals). The Food System initiative could provide assistance to the Choice Neighborhood residents to develop a neighborhood community garden and associated farmer’s market.

- Policies to combat unhealthy food environments need to incorporate the creation of a ‘local’ food economy that includes urban agriculture, farmer’s markets and community gardens. Access to these healthy foods can be further augmented through direct sales and marketing/educational campaigns that would raise awareness of healthy eating habits. These could be valuable for the community as a whole but particularly for low-income, high-risk individuals.

- **Mixed-use commercial development should include grocery stores that offer a high percentage of affordable fresh produce and nutritious food.** There should be a careful balance between healthy foods and other food outlets that may offer inexpensive alternatives (fast food).
5.4 Transportation

- The Transformation Plan should include consideration of the conversion of the one-way pair of streets located in the neighborhood (Madison and Monroe) back to two-way streets. This will create a more pedestrian friendly environment for the neighborhood and facilitate a connected system of walking facilities. The following figures illustrate that the traffic counts for the two streets from 2005-2010 have increased for two points on Monroe, decreased for two points, and remained constant for one point. On Madison, three points are greater over time, three are less, and three are approximately constant.

![Traffic counts on Monroe Street over time](image_url)

Figure 8: Traffic counts on Monroe Street over time
Figure 9: Traffic counts on Madison Street over time
Traffic Calming and Pedestrian Facilities

Many traffic calming measures are available, requiring varying levels of infrastructural intervention. While some methods, such as bulb-outs, chokers, and chicanes require the installation of physical infrastructure, others, such as adding bicycle lanes or on-street parking can be done with paint. Traffic calming measures should also be carefully integrated with existing or planned bicycle facilities. The full palette of traffic calming options includes:
• Convert one-way streets to two-way operation
• Widen sidewalks/narrow streets or traffic lanes/reduce number of lanes/add bicycle lanes
• Bulb-outs or chokers
  o These widen sidewalks at strategic locations, such as intersections or midpoints of the block, reducing traffic flow through those points
• Chicanes
  o Similar to bulb-outs and chokers, chicanes are installed on alternating sides of the street to mimic a winding road design
• Roundabout or traffic circle
  o Redirect traffic at intersections into a circular pattern, reducing conflict points while allowing steady traffic flow
• Raised medians
  o Islands through the middle of the street visually narrow the road while providing a resting point for pedestrians
• Tighter corner radii (with truck/bus apron as needed)
  o Slows turning traffic while reducing the distance pedestrians must cross
• Diverters
  o Barriers located at intersections which prevent traffic to enter a street in one direction, while permitting exiting traffic to pass
• Road humps, speed tables, or speed cushions
  o These raised, clearly marked sections in the road cause drivers to slow in order to pass over them. However, it should be noted that vertical traffic calming measures are usually not appropriate on busier streets, such as arterials and collectors, and must be carefully integrated with existing or planned bicycle facilities.
• Colored or textured pavement
  o Colored or textured sections can provide aural or visual cues that drivers should be cautious and slow, and colored pavement can be used to make the street appear narrower. Colored pedestrian crossings are usually not appropriate on busier streets due to maintenance and visibility concerns.
• On-street parallel or diagonal parking
  o This reduces the width of the road available for travel while forcing drivers to be cautious by observing for exiting vehicles
• For treatment details, see http://www.pps.org/articles/livememtraffic/

### 5.5 Specific Design Strategies

This HIA focuses on parks and greenspace due to the multiple benefits provided to all these populations through the physical and mental benefits of park and nature, the availability of healthy food access through community gardens, and the positive impact of the location of local schools within the neighborhood.

The National Recreation and Parks Association’s (NRPA) *Park, Recreation, Open Space, and Greenway Guidelines* recommends that cities obtain open recreation space (Level of Service) of between 6.25 and 10.5 acres per 1,000 residents (1995). Over time, these recommendations have become standard, with many cities identifying around 10 acres of parkland per 1,000 residents. The following table illustrates the range of existing and future LOS goals for a sample of cities and counties in Georgia.
### Table 14: Park Level of Service (LOS) provided by selected cities in Georgia

<table>
<thead>
<tr>
<th>City or County</th>
<th>Population</th>
<th>Existing LOS</th>
<th>LOS Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeKalb County, GA</td>
<td>691,893</td>
<td>6 acres/1,000</td>
<td>18 acres/1,000</td>
</tr>
<tr>
<td>Cobb County, GA</td>
<td>688,078</td>
<td>2 acres/1,000</td>
<td>10.5 acres/1,000</td>
</tr>
<tr>
<td>Butts County, GA</td>
<td>23,655</td>
<td>4.8 acres/1,000</td>
<td>6.16 acres/1,000</td>
</tr>
<tr>
<td>Columbia County, GA</td>
<td>124,053</td>
<td>3.5 acres/1,000</td>
<td>6.25-10.5 acres/1,000</td>
</tr>
<tr>
<td>Garden City, GA</td>
<td>8,778</td>
<td>4.51 acres/1,000</td>
<td>4.5-10 acres/1,000</td>
</tr>
</tbody>
</table>

In Dougherty County, the County has established that, “The level of service currently provided by facilities does not meet standards set by the National Recreation and Parks Association or the current Recreation Master Plan.” The County has further established the following future LOS goals to fulfill the population needs (Albany-Dougherty County Comprehensive Plan, 2005).

- 24 acres for playgrounds
- 41 acres for neighborhood parks
- 46 acres for district parks

Therefore a need has previously been identified by the County for the acquisition and establishment of new park facilities. Since the Transformation Plan focuses on the Choice Neighborhood, Figure 11 below illustrates the distribution of existing parks in the City of Albany located within two miles of McIntosh Homes in the Choice Neighborhood. The Choice Neighborhood boundary is also shown.
Figure 11: Parks, recreation areas, and playgrounds within two miles of Albany CN

The following Figure 12 further shows the level of service for the three census block groups that are the subject of this HIA.
Census tract 7 block group 1 meets the recommended level of service range of 6.25 to 10.5 acres per 1,000 residents established by the NRPA with 8.41 acres of recreational space per 1,000 residents. However, the other two block groups within Census Tract 8, which contain the Choice Neighborhood, do not meet the standard. These two block group have 0.1 acres per 1,000 residents and 2.1 acres per 1,000 residents. The details are shown in the table below. The
amount of additional acreage needed in each block group to reach the minimum recommendation established by the NRPA is also shown.

<table>
<thead>
<tr>
<th>Table 15: Park LOS in the Albany CN HIA study area</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Census Tract 7, Block Group 1</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palmyra Park</td>
<td>3.3083</td>
</tr>
<tr>
<td>Fifth Avenue Park</td>
<td>1.8622</td>
</tr>
<tr>
<td>Rawson Island Parks</td>
<td>1.1843</td>
</tr>
<tr>
<td>Eighth Avenue Youth Sports Complex</td>
<td>5.3814</td>
</tr>
<tr>
<td>Rawson Circle Park</td>
<td>0.8732</td>
</tr>
<tr>
<td>Sherman Park</td>
<td>0.5802</td>
</tr>
<tr>
<td>Hilsman Park</td>
<td>18.260</td>
</tr>
<tr>
<td>Number of Residents</td>
<td>1,783</td>
</tr>
<tr>
<td>Total Acres in Block Group</td>
<td>493</td>
</tr>
<tr>
<td>Total Park Acres in Block Group</td>
<td>31.45</td>
</tr>
<tr>
<td>Available acres per resident</td>
<td>31.45 / 1,783 residents</td>
</tr>
<tr>
<td>Ratio of acres to residents</td>
<td>17.64 acres per 1,000 residents</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Census Tract 8, Block Group 1</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence Park</td>
<td>0.1010</td>
</tr>
<tr>
<td>Number of Residents</td>
<td>967</td>
</tr>
<tr>
<td>Total Acres in Block Group</td>
<td>126</td>
</tr>
<tr>
<td>Total Park Acres in Block Group</td>
<td>0.101</td>
</tr>
<tr>
<td>Available acres per resident</td>
<td>0.101 / 967 residents</td>
</tr>
<tr>
<td>Ratio of acres to residents</td>
<td>0.1 acres per 1,000 residents</td>
</tr>
<tr>
<td>Approximate additional acreage needed to reach LOS 6.25 per 1,000 residents</td>
<td>6.04 acres</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Census Tract 8, Block Group 2</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engram Park</td>
<td>1.3430</td>
</tr>
<tr>
<td>Number of Residents</td>
<td>640</td>
</tr>
<tr>
<td>Total Acres in Block Group</td>
<td>342</td>
</tr>
<tr>
<td>Total Park Acres in BG</td>
<td>1.343</td>
</tr>
<tr>
<td>Available acres per resident</td>
<td>1.343 / 640 residents</td>
</tr>
<tr>
<td>Ratio of acres to residents</td>
<td>2.1 acres per 1000 residents</td>
</tr>
<tr>
<td>Approximate additional acreage needed to reach LOS 6.25 per 1,000 residents</td>
<td>4 acres</td>
</tr>
</tbody>
</table>
The establishment of additional greenspace and a community garden could benefit not only the immediate Choice Neighborhood, but could serve as an amenity for the larger community, which speaks to the goals established by HUD to consider the larger context within which the Choice Neighborhood is located. An amenity such as this could also build connections between the adjacent neighborhoods that have been historically divided. Finally, certain health conditions are not isolated to lower SES communities. For example, obesity and hypertension are problems that affect all income levels of the population, therefore the same health benefits realized by the Choice Neighborhood residents could also be realized by other less disadvantaged Albany residents.

**HIA Recommendations Phase - Parks & Greenspace**

Figure 13: Inventory of existing substandard and vacant parcels.
The previous figure shows the inventory of land parcels known to be vacant, vacant (city owned), tax delinquent, or those with code enforcement issues in the Choice Neighborhood (this data was provided by project partner Grace Perdomo of Boulevard Group). The inventory illustrates the properties that would be potentially easier to acquire and in certain instances eliminate the existence of an undesirable land use “bad neighbor” property in the neighborhood that contributes to blight and crime.

The acreage has also been calculated for these parcels. As noted in the tables above, for census tract 8: block group 1, approximately 6 acres should be acquired to serve the neighborhood population. For census tract 8: block group 2 approximately 4 acres should be acquired to serve the neighborhood population. The following figure provides a visual representation of the acreage available to reach these goals within each block group.
Figure 14: Acreage of contiguous vacant and substandard parcels.

The project team reviewed the traffic count data to identify roads with less daily traffic as well as the locations of existing sidewalks relative to the potentially available land. The following figure shows the traffic counts by graduated symbols, existing sidewalks, existing parks, and parcels for potential greenspace.
Figure 15: Traffic patterns surrounding potential new park locations.

In the following figure, parcels well suited to conversion to new parks have been highlighted. Factors that the team considered in choosing these sites include the existing infrastructure which will support the parks, the ability of each site to promote greater connections among the adjoining neighborhoods, the ability to improve the comprehensiveness of the City’s parks system, the potential of each site to contribute to meeting the needed acreage threshold, and the potential to add value to existing schools which would benefit from proximity to parks.
Infrastructure supporting the park locations includes sidewalks and streets. Where possible, locations with complete or partial sidewalk connections were included. However, in the northwest section of the Choice Neighborhood, sidewalks become sparse, as can be seen in the figure. In these locations, park construction would provide an opportunity to improve the sidewalk infrastructure in the neighborhood. This will improve pedestrian safety within the Choice Neighborhood. Special consideration must also be given to parks located on one-way streets, which may pose a danger to pedestrians accessing the parks. The proposed parks would affect street crossings on Madison Street primarily at Residence Avenue, Tift Avenue, Park Lane, and 1st Avenue. Currently, crosswalks exist at Tift Avenue as well as at Society Avenue, which provide access to Lincoln Magnet Elementary School. Designation of pedestrian crosswalks at Residence, Park Lane, and 1st Avenue should be given priority in order to improve access to the proposed parks. In addition, new crosswalks on Madison Street would improve pedestrian access and safety for students at Lincoln Magnet Elementary School, and allow the new parks to be used by students and classes at the school.

Forging connections between Albany’s neighborhoods and improving the comprehensiveness of the City’s parks system were additional important considerations. By locating several of the proposed park areas along the northern edge of the Choice Neighborhood, the new parks have the potential to become a shared space between Choice Neighborhood residents and residents of the neighborhood located to the north. This will foster a feeling of joint ownership of the space between the two neighborhoods. In addition, the locations of the proposed parks within Census Tract 8, Block Groups 1 and 2 are distributed to ensure that both tracts meet the recommended 6.25 park acres per 1000 residents while filling a gap in the Albany parks system.
Figure 16: Finalized site recommendations for new parks in Choice Neighborhood.

**Stronger Connection to the River Walk Trail**

Another amenity to be considered relative to the new greenspace is the River Walk Trail, which is located approximately 0.5 miles from the eastern boundary of the Choice Neighborhood. West Society Avenue extends in an east/west direction through McIntosh Homes and continues due east to the Flint River and the trail. Despite this proximity, the trail is mostly unknown and inaccessible to neighborhood residents.
The trail could provide access to physical activity and to nature if it was easily accessible to the Choice Neighborhood residents. The comprehensive route to reach the River Walk trail could incorporate the excellent existing sidewalk program already in place in the City of Albany and utilize signage to inform residents and visitors of the route. Safe pedestrian crossing facilities already exist at Jefferson Street on Society Avenue, which is a high traffic location; expansion of these facilities would enable pedestrians to safely access the Riverwalk. The route could also incorporate the parks that are already located to the north of the Choice Neighborhood and provide an amenity that would serve both the Choice Neighborhood and the larger City as well as strengthen ties across demographic groups. The following figure shows the possible connections for the route. The route utilizes traffic count data and proposes connections with lower amounts of traffic to minimize potential conflicts for pedestrians or cyclists along busy streets.

In order to access the trail from the west, a visitor has to cross an active freight rail line, which could create a conflict. The route also passes through an industrial area along the river bank which is a less pedestrian friendly as well. However, the City of Albany should consider opportunities to connect to this amenity which is located in close proximity to multiple neighborhoods, yet inaccessible to them.

Alternatively, if construction of new access points is infeasible, connecting the Choice Neighborhood to existing Riverwalk access points can also benefit the neighborhood. Currently, access points to the Riverwalk Trail in the vicinity of the Choice Neighborhood exist along Front Street from Oglethorpe Boulevard in the south to Flint Avenue several blocks north. Following existing sidewalks, the trail can be connected to access points at Flint, Pine, or Broad Avenues. The provision of clear signage indicating access to the Riverwalk Trail would then allow residents to learn about and access the trail safely.

The following figure illustrates the potential trail connections as well as the currently existing access points.
Safety

Parks can also become a location for criminal activity. Since the neighborhood is already a known hotspot for crime, any new recreational facilities need to be designed to eliminate criminal activity in the park.

The idea of using visual and environmental cues to reduce the likelihood of criminal activity began in the 1970s, in the form of CPTED (Crime Prevention Through Environmental Design) discussed...
in detail in the Safety and Security section on page 43 and includes five basic principles (Saville, 1998). These environmental design strategies are shown in the following Table 16.
Table 16: Principles of Crime Prevention Through Environmental Design

<table>
<thead>
<tr>
<th>Principle of CPTED</th>
<th>Reasoning</th>
<th>Implications for the Built Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Territorial reinforcement</td>
<td>If people know that a place is “their own,” they will be more active in protecting and maintaining it. “Semi-public” realms, where ownership is unclear, are more likely to be neglected and create an unsafe space where crime is more likely to occur.</td>
<td>Make clear subdivisions between public and private space through landscape and architectural cues. This is especially true in cases where private residences are close to shared spaces—apartment complexes, or houses on a busy street.</td>
</tr>
<tr>
<td>Access control</td>
<td>Easy entrance and exit of a potential crime scene is important to a would-be criminal; thus, making it harder to enter and leave an area unnoticed reduces the attractiveness of the area as a place in which to commit crimes.</td>
<td>Monitor entryways and exits into buildings, parks, parking lots, and neighborhoods. Make sure entrances and exits are well-lit, not hidden.</td>
</tr>
<tr>
<td>Natural surveillance</td>
<td>The more “eyes on the street,” the more potential witnesses to a crime, and thus the more dangerous it is for a potential criminal to act.</td>
<td>When building, pay attention to sightlines; keep streets relatively free of obstructions and allow informal surveillance from windows and porches.</td>
</tr>
<tr>
<td>Neighborhood image and maintenance</td>
<td>A more dilapidated neighborhood suggests a lack of formal concern and thus a greater likelihood that a crime committed there will not be detected or prosecuted.</td>
<td>Budget for regular maintenance of the built environment: replacing light bulbs, street-cleaning, removing graffiti and broken windows, keeping vacant buildings locked.</td>
</tr>
<tr>
<td>Proper land use</td>
<td>Different public groups may all have legitimate uses for the same space, but those uses may conflict with each other (i.e. bicyclists and cars). Conflict can reduce the ability of all groups to use the public land safely.</td>
<td>Design public spaces (such as parks, trails, or streets) with different potential uses in mind, allowing all users to share the space safely.</td>
</tr>
</tbody>
</table>

Source: adapted from Saville, 1998

These techniques have been shown to reduce crime and the fear of crime, and the attendant negative health impacts.

Furthermore, access to nature can also reduce crime and the fear of crime and have positive health impacts. In a public housing development in Chicago, 145 residents were randomly assigned to architecturally identical apartment buildings and those that lived in buildings with more vegetation outside felt safer (Kuo & Sullivan, 2001). Residents living in areas with more greenspace also reported less overall aggression, psychological aggression, mild violence, severe violence and used fewer aggressive tactics against their partners and children (Kuo & Sullivan, 2001).
6. Conclusions

The Transformation Plan provides an opportunity for positive health intervention. Effective redevelopment policies that impact the social and environmental risk factors for health conditions could maximize the positive health outcomes for the population and mitigate any negative impact of the Plan.

6.1 Dissemination, Monitoring, and Evaluation

AHA will likely apply for an implementation grant in the future from HUD to further the goals that have been developed in the Transformation Plan. The incorporation of the evidence, finding, and recommendations compiled in this HIA in both the Transformation Plan and the Implementation Grant application process illustrates AHA’s commitment to incorporating positive health impacts into the lives of the residents of the Choice Neighborhood.
REFERENCES


Alaimo, K., Packnett, E., Miles, R. A., & Kruger, D. J. (2008). Fruit and vegetable intake among urban community gardeners. [Research Support, Non-U.S. Gov't]


References


Block, R. L. & Davis, S. (1996) The environs of rapid transit stations: a focus for street crime or
References


References


Healthy Kids, Healthy Communities. “HKHC Case Examples: Joint Use Agreements.” Accessed from http://www.healthykidshealthycommunities.org/node/672


References


References


President's task force on environmental health risks and safety risks to children: Coordinated federal action plan to reduce racial and ethnic asthma disparities. *Asthma Disparities Working Group*. Retrieved from: http://www.epa.gov/asthma/childrenstaskforce


References

Transportation Research Record: Journal of the Transportation Research Board, 2102(-1), 61-67.


Tu, W., Tedders, S., & Tian, J. (2012). An exploratory spatial data analysis of low birth weight
prevalence in Georgia. *Applied Geography, 32*(2), 195-207. doi: 10.1016/j.apgeog.2011.06.001


and pedestrian crashes. *Injury Prevention, 14*(6), 377-380.

### Additional Resources

- More information on how to structure a partnership to undertake and administer a joint use agreement is available in the Joint Use School Partnerships in California report from the Center for Cities and Schools at University of California - Berkeley.

- Resources for a Model Joint Use Agreement are available from ChangeLab Solutions at changelabsolutions.org/publications/model-joint-use-agreement-resources.