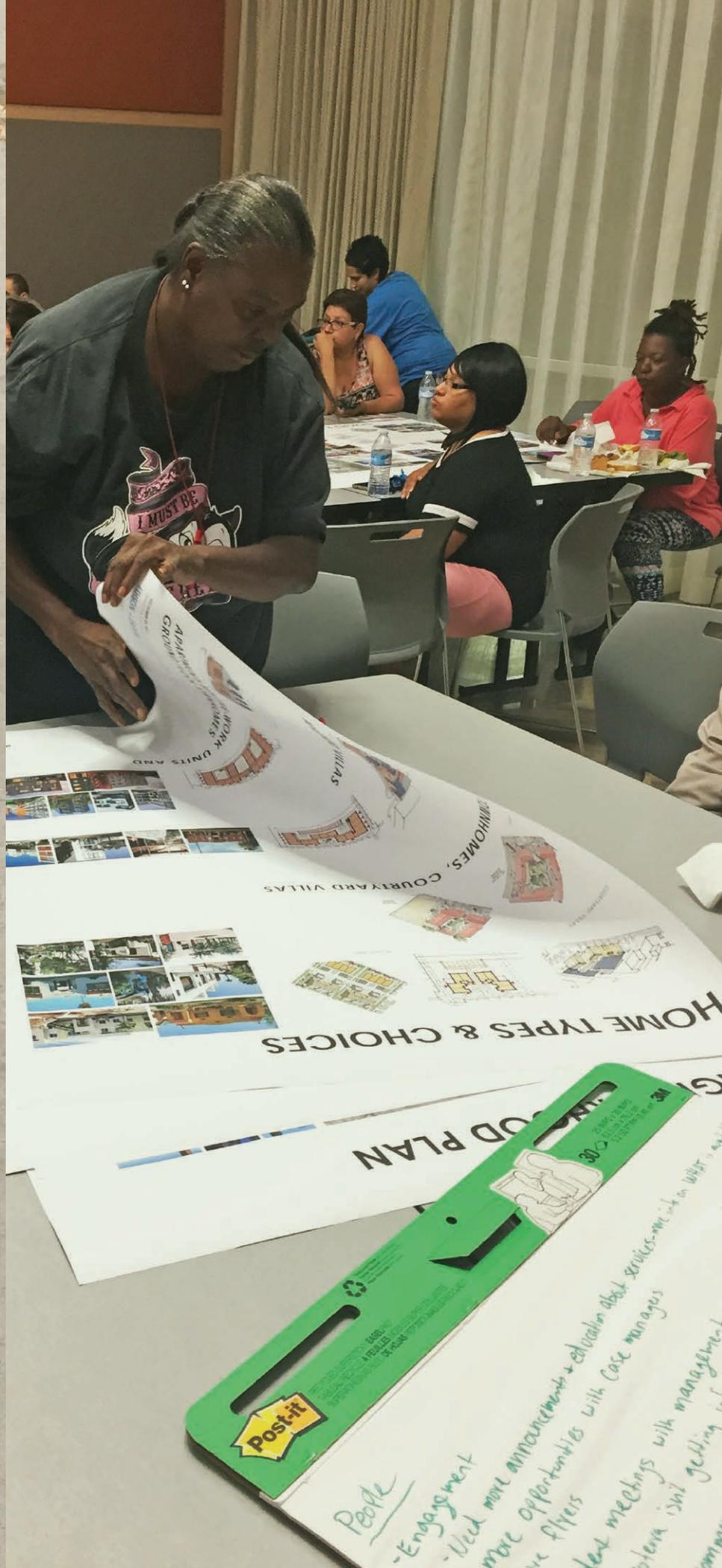


# EDISON EASTLAKE COMMUNITY

## CHOICE NEIGHBORHOOD INITIATIVE HEALTH IMPACT ASSESSMENT



This report is funded by Local Initiatives Support Corporation and Vitalyst Health Foundation

## ACKNOWLEDGEMENTS

This health impact assessment (HIA) would not have been possible without the support and collaborative efforts of many people. I would like to thank Jane Pearson, consultant for the Local Initiatives Support Corporation of Phoenix (LISC), whose guidance, mentorship and co-authorship were crucial to this project's success.

Above all, I would like to thank the residents of the Edison Eastlake Community, particularly those that serve on the Resident Leadership Council, whose interest, concern, and commitment for their community were an inspiration and provided a guiding light for this HIA report.

I would like to thank Phoenix Revitalization Corporation, Eva Olivas, Executive Director, and Jessica Bueno, for their partnership with the Resident Leadership Council who served as the HIA Advisory Committee. Their facilitation and recruitment of key residents were foundational to this HIA.

Thank you to the team of technical experts who offered their time, insights, data and lessons learned to help contribute to this HIA findings and recommendations. These individuals include:

- Dean Brennan, Project for Livable Communities, LLC
- Dave Laney, Cardno/ATC Associates
- David Hondula, Arizona State University
- Maggie Messerschmidt, The Nature Conservancy of Arizona
- Melissa Guadaro, Arizona State University
- Salin Geevarghese, Center for Study of Social Policy
- Adrienne Todman, National Association for Housing and Redevelopment Officials
- Stephen Norman, King County Housing Authority
- Erin Christensen and Heidi Oien, Mithun, Inc
- Allison Parisi and Hovi Nguyen, Maricopa County Department of Public Health

Special thanks to the City of Phoenix Housing Department, especially Berenice Felix-Baca and Bailey Spears, for sharing expertise and time to the HIA process.

I am deeply grateful for Brian Swanton of Gorman and Company, Inc. for championing HIA efforts in the housing community and always offering technical expertise to the process.

Thank you to Michele Scanze for her contribution to the report including her masterful GIS analysis and creation of maps. Thank you also to Genevieve Pearthree, Arizona State University, for support and provision of additional GIS maps.

Special appreciation for the editing provided by Vitalyst Health Foundation staff, Emily Kepner and Stephanie Gallegos.

Thank you to the Arizona Alliance for Livable Communities, especially Kenneth Steel and David Dube, for supporting this and other HIA efforts in the community.

Thank you to the artistic talent of Chalk Design, for providing graphic design to make this report come alive.

This project would not have been possible without funding from LISC and Vitalyst Health Foundation. Deep gratitude for Terry Benelli, Executive Director for LISC Phoenix and C.J. Eisenbarth Hager, Director of Healthy Community Policies for Vitalyst Health Foundation, for their constant advisement and support throughout the HIA process.

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# CONTENTS

<b>Executive Summary</b> .....	<b>4</b>	<b>Access to Healthy Affordable Food</b> .....	<b>32</b>
Background .....	4	Why it Matters .....	32
About this Health Impact Assessment .....	4	Methodology .....	32
Key Findings .....	4	Existing Conditions .....	32
Recommendations .....	6	Evaluating Health Impact .....	36
<b>Introduction and Background</b> .....	<b>8</b>	Recommendations .....	37
Health, Housing and Neighborhood .....	8	<b>Environmental Quality</b> .....	<b>40</b>
HIA Overview .....	9	Why it Matters .....	40
Choice Neighborhoods Initiative .....	10	Methodology .....	41
Screening and Scoping .....	10	Assessment .....	42
<b>Methodology</b> .....	<b>13</b>	Evaluating Health Impacts .....	48
Reinvent PHX HIA .....	13	Recommendations .....	49
Resident Survey .....	14	<b>Safe, Active Neighborhoods</b> .....	<b>52</b>
Community Interviews .....	14	Why it Matters .....	52
Community Workshops .....	14	Methodology .....	52
Quantitative Data .....	14	Existing Conditions .....	52
<b>Assessment</b> .....	<b>15</b>	Evaluating Health Impacts .....	58
Existing Conditions .....	15	Recommendations .....	58
<b>Findings and Recommendations for Health Determinants</b> .....	<b>24</b>	<b>Monitoring and Evaluation</b> .....	<b>60</b>
<b>Thriving Communities and Families</b> .....	<b>24</b>	<b>Bibliography</b> .....	<b>61</b>
Why it Matters .....	24	<b>Appendix A</b> .....	<b>63</b>
Methodology .....	25	<b>Appendix B</b> .....	<b>64</b>
Existing Conditions .....	26	<b>Appendix C</b> .....	<b>65</b>
Evaluating Health Impact .....	28	<b>Appendix D</b> .....	<b>66</b>
Recommendations .....	29		

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 Cynthia Melde and other report authors.



# EXECUTIVE SUMMARY

## Background

Health is defined as more than just the presence or absence of disease. The World Health Organization defined health “as a state of complete physical, mental and social wellbeing” (World Health Organization, 2005). Health starts where we live, learn, work, play and connect. This means that health starts in our homes, schools, worksites, neighborhoods, and communities. Social, environmental, economic, and political factors directly and indirectly determine health and wellbeing. Housing is an important determinant of health. Healthy, safe, accessible and affordable housing can reduce the risk of illness and injury, while improving residential stability and improve physical health. It can also free up family resources, enhance social connections, reduce stress and improve mental and social health (Maqbool, Viveiros, & Ault, 2015).

In 2010, the U.S. Department of Housing and Urban Development (HUD) developed the **Choice Neighborhoods Initiative** with the goal to redevelop distressed public housing, improve outcomes for people living in the community and revitalize distressed surrounding neighborhood, ultimately creating revitalized mixed-income communities across the country. To achieve these goals, communities must develop and implement a comprehensive neighborhood revitalization strategy, or Transformation Plan (Department of Housing and Urban Development, 2017). In 2016, the City of Phoenix was awarded a \$1.5 million Choice Neighborhoods Planning Grant to develop a Transformation Plan for the **Edison-Eastlake Community (EEC)**, home to four public/affordable housing sites. Three of these sites built between 1942-1963 — Sidney P. Osborn, A.L. Krohn, and Frank Luke — are targeted for redevelopment through the Choice Neighborhoods Planning Grant.

## About this Health Impact Assessment

Health Impact Assessments (HIA) are a six-step process that aims to identify positive and negative health impacts before a decision is made on a policy, project or plan. Using existing baseline conditions and potential health impacts, recommendations are developed for decision makers to consider integrating in the final policy, project or plan. The goal is to maximize the positive health effects while minimizing negative outcomes. Community stakeholders, especially vulnerable populations, are engaged so that possible health impacts on all affected populations are assessed and considered before the proposal is put in place.

This HIA furthers the goal of HUD’s Choice Neighborhoods Initiative by making recommendations to create community conditions that promote the health and wellbeing of the current and future residents of the EEC. Health is critical to creating communities of choice.

## Key Findings

Based on conversations with the HIA Advisory Group, the Resident Leadership Council (RLC), interviews with residents and other stakeholders, existing community health data and evaluation of potential health impacts affected by the redevelopment, several overarching health determinants were identified and assessed: thriving and resilient community, food environment, environmental quality, and safe, active neighborhood.

## Thriving Resilient Communities

Community resilience is defined by a sense of place, shared common perspectives or interests, diversity in relationships and roles, sense of togetherness and joint action and engagement (Hughes, 2003). Central to resilience and community is social cohesion. In the broadest sense, social cohesion is the “glue” that holds communities together and enables them to build bridges to others. There are varying levels of relationships in the EEC, however, many residents do not report a sense of trust or shared values with each other. There is also limited interaction between residents living on either side of Van Buren Street, highlighting the physical and cultural divider that Van Buren Street plays in the community. To promote health, efforts must be made to minimize uncontrollable stressors and increase opportunities for connections among residents of varying ages, levels of ability and diverse backgrounds. There must be increased leadership opportunities for residents, improved family support and more youth engagement opportunities.

**There is limited interaction between residents living on either side of Van Buren Street, highlighting the physical and cultural divider that Van Buren Street plays in the community.**

## Food Environment

While nutrition is about what we eat, our eating choices are influenced by our environment. The location of food outlets, from supermarkets to convenience stores and farmers markets to fast food restaurants, can profoundly affect a community’s collective health. Residents express a strong interest in another grocery store in the community. The existing food retail is limited to ethnic grocery stores or convenience stores. Grocery stores with healthy, affordable food are not as accessible to residents due to walking distance, transportation barriers, or cultural differences. Sidney P. Osborn is more limited in nearby healthy food options than Frank Luke and A.L. Krohn. Adopting policies to support new healthy food resources, enhancing and expanding the existing food retail infrastructure, and offering nutrition education and food preparation classes will improve the health of residents.

**Residents express a strong interest in another grocery store in the community.**

## Environmental Quality

Where we live matters to our health in part due to the physical environment. The air we breathe, the water we drink, and the land and buildings around us impact and influence our ability to live a healthy life (Centers for Disease Control and Prevention, 2017). The EEC suffers from urban heat island impact, being one of the hottest neighborhoods in Maricopa County. There are air quality challenges being near the freeway and an existing superfund site that impacts the community. In addition, there is a high rate of vacant lots increasing the blight of the community. Adopting and implementing heat mitigation strategies in the housing and neighborhood redevelopment is important to the health of residents. In addition, improving landscaping, shading, greening and activating vacant lots can positively improve the health of the community.

**The EEC suffers from urban heat island impact, being one of the hottest neighborhoods in Maricopa County.**

## Active, Safe Community

Environments that make it easier for people to walk or bike help increase physical activity and make neighborhoods better places to live (Centers for Disease Control and Prevention, 2011). Safety of the EEC is a top concern for residents. Edison Park, particularly at night, is reported to host activities that negatively impact the community, such as drug exchanges and gang-related activity. This limits residents’ ability to move through the community particularly for recreation purposes. By adopting policies and practices that improve the safety and ability to be active in the neighborhood design, creating multigenerational opportunities to be active and offering programming to support residents ability to be physically active, the health of the residents will improve.

**Edison Park is reported to host activities that negatively impact the community, such as drug exchanges and gang-related activity.**

## Recommendations

Recommendations were developed for each of these health determinants. Each health determinant can be positively or negatively impacted by policy changes, infrastructure development and programming offered during and after the redevelopment. Thus, recommendations are categorized by these three domains. Some recommendations overlap between categories and across determinants underlining the importance of integrating community efforts to address health as a whole. For greatest impact on health, recommendations from all three domains — policy, infrastructure, and programming — should be adopted and implemented.

## RECOMMENDATIONS FOR EDISON EASTLAKE COMMUNITY

### THRIVING AND RESILIENT COMMUNITY

#### POLICY

Adopt management policies and practices that prioritize inclusive resident leadership and utilize resident assets.

#### INFRASTRUCTURE

Create a community of opportunity by prioritizing healthy child development from birth through college entry through infrastructure development and high quality services for children and youth.

Ensure equitable distribution of community infrastructure, facilities and programming on both the north and south side of Van Buren Street.

#### PROGRAM

Partner with community organizations and allocate resources to provide ongoing trainings and programming on facilitation, mediation, restorative justice and leadership development to all residents to support community participation and engagement.\*

Support both formal and informal family support programming to strengthen caregiver/parenting skills and families.

### FOOD ENVIRONMENT

#### POLICY

Promote Urban Agriculture through zoning. Urban Agriculture includes community gardens, urban farms, farmers markets, community supported agriculture, and mobile produce vendors.\*

Encourage the development of a Farmers Market by adopting supportive policies and practices.\*

#### INFRASTRUCTURE

Create a small business development initiative, Healthy Corner Store Initiative, to improve access to healthy and affordable food.\*

Determine the market potential for an additional full-scale grocery store as a long-term strategy to create a community of choice.\*

#### PROGRAM

Work with a community-based organization to develop a community garden association lead by residents, including youth.\*

Partner with residents to determine specific food preparation, food storage, and other nutrition education classes to offer at each housing site. Allow residents to lead classes when appropriate and bring partner organizations onsite to offer free classes to all residents.

Work with the local Walmart (36th Street & Thomas Road), Fry's (30th Street & Thomas Road) and Ranch Market (16th Street & Roosevelt Street) to introduce free shuttle buses for residents of EEC.

\* Denotes similar recommendations made in the Reinvent PHX HIA completed in 2013.

**ENVIRONMENTAL  
QUALITY**

**Urban Heat Island  
Air Quality  
Water Quality  
Vacant Lots**

**POLICY**

**Urban Heat Island**

Comply with the standards established in the Interim Transit Oriented Overlay Districts specifically as it relates to shade.

**Urban Heat Island**

Adopt heat mitigation policies and strategies in the redevelopment of the urban form, including prioritizing the use of surfaces and building materials that provide cooling effects. Placement and orientation of buildings should also maximize cooling.

**INFRASTRUCTURE**

**Urban Heat Island and Air Quality**

Increase greening and improve landscaping by adding trees, sod and other vegetation throughout the community to help improve the air quality and mitigate the urban heat island effect.

**Air Quality**

Install high efficiency HVAC systems in the housing units and community buildings. Advanced air filtration should be installed through air handling units for all sites.

**Vacant Lots**

With resident leadership, activate vacant lots for community benefits. This may include, but not limited to, urban agriculture, pop-up parks, green spaces, and art spaces.\*

**PROGRAM**

**Urban Heat Island**

Continue and expand programming for residents to enhance heat coping mechanism and learn about heat-related illness. Empower residents to share their stories of coping with heat and their visions for improving the conditions.

**Urban Heat Island and Air Quality**

Provide education to residents on how to best use of new energy efficient appliances and HVAC systems.

**Urban Heat Island, Air Quality and Vacant Lots**

Support resident leadership throughout strategies used to address environmental quality. To support green infrastructure, allow residents with landscaping experience opportunity to provide maintenance of common spaces in exchange for housing stipend or community service hours. Support resident leadership to establish community clean-up and other neighborhood beautification efforts. Provide programming support for any activation of vacant lots.\*

**SAFE, ACTIVE  
COMMUNITY**

**POLICY**

Work together with the City of Phoenix Police Department to use Crime Prevention Through Environmental Design (CPTED) guidelines in the design of the properties, including the enhancements to Edison Park.

Utilize the Active Design Guidelines in the neighborhood and housing redevelopment plan to incorporate multigenerational physical activity opportunities.\*

**INFRASTRUCTURE**

Implement specific street recommendations found in Table 12 of the full HIA report. Priority should be given to Roosevelt Street, the intersection of 20th and Roosevelt Streets, 20th Street, the intersection of 18th and Van Buren Streets, and 18th Street.\*

Work with the City of Phoenix Department of Transportation to design open space and pathways to assure connectivity to Van Buren Street and the light rail from housing sites.

**PROGRAM**

Support resident leaders to form walking clubs in housing areas.

Support programs and resident leadership to address the crime in the community. This includes supporting the community action program or the creation of one or more Block Watches. Providing regular, organized recreation programs in Edison Park and enforce Edison Park hours with active police monitoring at night.\*

\* Denotes similar recommendations made in the Reinvent PHX HIA completed in 2013.

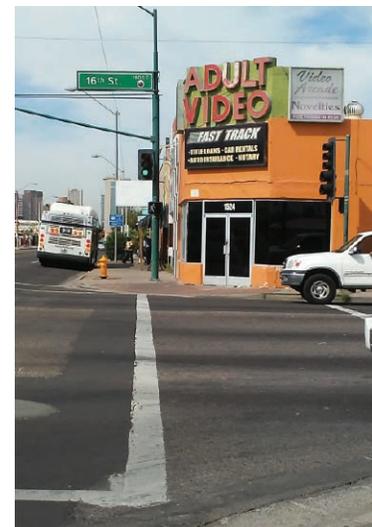
# INTRODUCTION AND BACKGROUND

## Health, Housing and Neighborhood

**Access to social and economic opportunities; the resources and supports available in our homes, neighborhoods, and communities; the quality of our schooling; the safety of our workplaces; the cleanliness of our water, food, and air; and the nature of our social interactions and relationships all play a role in our health.**

Health starts where we live, learn, work, play and connect. This means that health starts in our homes, schools, worksites, neighborhoods, and communities. Access to social and economic opportunities; the resources and supports available in our homes, neighborhoods, and communities; the quality of our schooling; the safety of our workplaces; the cleanliness of our water, food, and air; and the nature of our social interactions and relationships all play a role in our health. (Office of Disease Prevention and Health Promotion, 2017). Healthy, safe, accessible, and affordable housing can reduce the risk of illness and injury while improving residential stability and freeing up family resources, thereby reducing stress and other adverse mental health outcomes (Maqbool, Viveiros, & Ault, 2015).

Housing quality, location, affordability and neighborhood characteristics influences health on many levels (National Center for Healthy Housing, 2016). For instance, dampness and mold exposure in a home is accountable for 21 percent of asthma cases in the U.S. (PEW Charitable Trusts, 2016). Housing location dictates a community's air pollution levels and accessibility to resources. Poorly constructed housing or proximity to heavily traveled roadways can disrupt sleep and result in serious health conditions. Research shows that residents tend to have higher levels of physical activity when they live near parks or open space. Additionally, housing affordability impacts a community's disposable income. Families navigate trade-offs between paying for essential items, such as rent, utilities and food. Less affordable housing results in less disposable income for medication and other health enhancing resources. Neighborhood characteristics, such as social inclusion and capital, segregation, and concentrated poverty can impact a community's health. When families move from a community with higher rates of concentrated poverty to a community with lower rates of concentrated poverty, the family experiences a decrease in stress from being exposed to crimes and violence, decrease in anxiety and a decrease in behavioral problems (National Center for Healthy Housing, 2016).



## HIA Overview

**A Health Impact Assessment is a tool that aims to identify positive and negative health impacts before a decision is made on a policy, project or plan.**

An HIA is a tool that aims to identify positive and negative health impacts before a decision is made on a policy, project or plan. It is a tool that can be used to demonstrate the relationships (pathways) between health determinates such as housing quality, location, affordability and neighborhood characteristics and physical or mental health outcomes. Through an HIA, researchers apply a variety of methodologies to analyze current and potential health conditions in a community and how these conditions relate to the policy, project or plan. While an HIA uses quantitative and qualitative analytics, data collection might also include participatory techniques, including town-halls, charrettes and other community feedback sessions. Robust community engagement is essential during an HIA to ensure that HIA recommendations do not only represent professional expertise but also community needs. Ideally, community engagement occurs in a collaborative environment that empowers the community and leverages local knowledge.

There are several principles that guide HIA practice (World Health Organization, 1999):

1. **Democracy:** The HIA process should involve and engage the public and inform decision makers and stakeholders.
2. **Equity:** The HIA process should be transparent and inclusive of underserved and hard-to-reach populations. The process should investigate inequitable distribution of health impacts based on socio-economic status, religion, age, gender, ethnic background or other characteristics.
3. **Sustainable Development:** The HIA recommendations should consider the sustainability of the community in terms of equity, economic and environmental impacts. Any development should consider both short- and long-term consequences.
4. **Ethical Use of Evidence:** Any data collected as part of the HIA should be rigorous and based on scientific principles and methodologies. Like any scientific study, data should be collected in a manner to preserve privacy while still providing a comprehensive assessment.
5. **Comprehensive Approach to Health:** The HIA is grounded in emphasizing that a broad range of factors influences physical and mental health.

While the above principles guide the overall HIA project, an HIA should progress through a series of distinct steps (Centers for Disease Control and Prevention, 2016):

1. **Screening:** Identify the decision (project, policy or plan) for which an HIA is deemed useful.
2. **Scoping:** Identify how comprehensive the HIA will be and what health risks and health benefits will be examined.
3. **Assessment:** Identify underserved and affected populations and collecting and analyzing qualitative and quantitative data.
4. **Recommendations:** Work with community members and key stakeholders to agree on recommendations that mitigate negative health impacts and enhance positive health impacts.
5. **Reporting:** Present findings and recommendations to decision makers, community members and key stakeholders.
6. **Monitoring and Evaluation:** Determine the HIA's impact on the decision and health status of the target population.

**Realistically, the HIA process is iterative and non-linear, moving back and forth between steps as new information is gathered.**

## Choice Neighborhoods Initiative

U.S. Department of Housing and Urban Development developed the Choice Neighborhoods Initiative with the goal to redevelop distressed public housing, improve outcomes for people living in the community, and revitalize distressed surrounding neighborhood, ultimately creating revitalized mixed-income communities across the country. The initiative requires community participation, locally driven solutions, and increased partnerships between organization to catalyze critical improvements in the community, including vacant property, housing, services and education. To achieve these goals, communities must develop and implement a comprehensive neighborhood revitalization strategy, or Transformation Plan. This plan serves as a blueprint for the revitalization of the public and/or assisted housing units and the transformation of the surrounding neighborhood and positive outcomes for families (Department of Housing and Urban Development, 2017).

**This HIA will further the goal of the national Choice Neighborhoods Initiative by making recommendations to create community conditions that promote the health and wellbeing of the community through the housing redevelopment process.**

In 2016, the City of Phoenix was awarded a \$1.5 million Choice Neighborhoods Planning Grant to develop a Transformation Plan for the Edison-Eastlake Community (EEC), home to four public/affordable housing sites (Appendix A). Three of these sites built between 1942-1963 — Sidney P. Osborn, A.L. Krohn, and Frank Luke — are targeted for redevelopment through the Choice Neighborhoods Planning Grant. One million of these dollars will be used to leverage and finance innovative activities that kick start neighborhood change in 2018.

This HIA will further the goal of the national Choice Neighborhoods Initiative by making recommendations to create community conditions that promote the health and wellbeing of the community through the housing redevelopment process. By adopting these recommendations in the Transformation Plan and redevelopment process, the EEC community will grow healthy learners, support healthy workers, and foster healthy families. Health is core to creating opportunities for all.

## Screening and Scoping

### Should an HIA be completed?

This section describes the steps taken to determine if the HIA was feasible and will contribute to the planning for the targeted Edison-Eastlake Community (EEC). Three main questions, can inform whether or not to complete an HIA:

1. Is the proposal associated with potentially significant health impacts that otherwise would not be considered or would be undervalued by decision makers?
2. Is it feasible to conduct a relevant and timely analysis of the health impacts of the proposal?
3. Are the proposal and decision making processes potentially receptive to the findings and recommendations of a health impact analysis?

Utilizing the Screening Whitepaper developed by Human Impact Partners as a guide, screening was completed in partnership with the City of Phoenix planning team, the consultant hired to assist in the planning process and Phoenix Revitalization Corporation in December 2016 (Human Impact Partners, 2009). It was determined the timing of the planning process would allow for an HIA to be useful. The draft Transformation Plan is due in December 2017, and the final plan due in June 2018. In addition to existing data sources and literature, the HIA could gather health-related information through the Choice Neighborhoods planned community engagement process including resident and employee surveys and community workshops. The scope of the Choice Neighborhood Planning grant includes assessing the social, economic and

**The scope of the Choice Neighborhood Planning grant includes assessing the social, economic and environmental issues impacting the community.**

environmental issues impacting the community; however, the direct connection to how these issues could impact health will not be considered. This created an opportunity for the HIA to explore how the Transformation Plan can improve the health of the community and its residents and influence future revitalization efforts.

The HIA could also partner with Phoenix Revitalization Corporation who is responsible for facilitating the Resident Leadership Council (RLC) for the planning process. The RLC's role is to ground the Transformation Plan in local context and develop community-driven solutions. Serving as the HIA advisory committee would provide the RLC a leadership opportunity and empower residents to better understand the health of their community and advocate for change. With an appropriate timeline, adequate financial resources provided by LISC, stakeholder desire to contribute to the HIA and decision makers open to the HIA process, it was determined an HIA would be completed.

### What should the HIA assess?

The second step in the HIA is to determine the scope of the HIA. In this stage, key stakeholders help develop the goal and key research questions for the HIA to assess. A comprehensive list of data sources and methods for the assessment is developed and final scope is developed based on community need, stakeholder input and available data.

The scoping of this HIA was completed in January and February of 2017. The Choice Neighborhoods Planning process was conducting several additional studies, including Housing Market Study, Business Development Study, and Phase 1 Environmental Report. This HIA sought to not duplicate other studies and worked with the City of Phoenix planning team, HIA advisory committee, technical experts, and key stakeholders to determine the scope of the HIA. The HIA advisory group, or RLC, was also formed and engaged during this stage. A list of HIA advisory members can be found in Appendix B. This group was critical to guiding and grounding the entire HIA process.

**A list of HIA advisory members can be found in Appendix B. This group was critical to guiding and grounding the entire HIA process.**

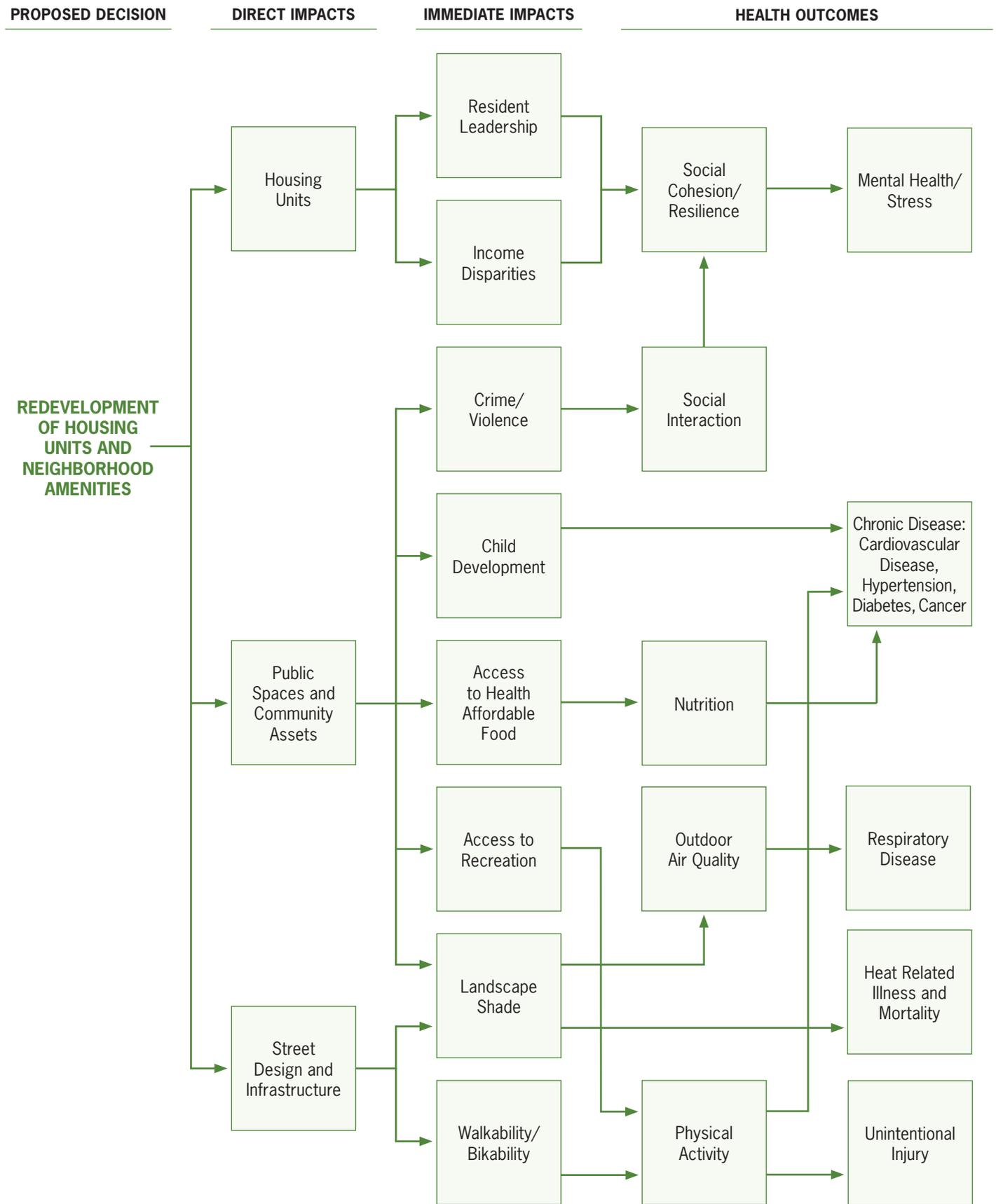
**HIA Goal** To identify the potential health impacts of the redevelopment of the EEC and provide health-promoting recommendations to be adopted in the Transformation Plan.

### HIA Research Questions:

1. How will the redevelopment impact the social and community traits of the neighborhood?
2. How can the redevelopment impact access to healthy, affordable food?
3. How can the redevelopment address environmental issues in the neighborhood?
4. How can the redevelopment improve the community safety and active living of the neighborhood?

Using input from residents and other community stakeholders, research questions were further divided into key health issues and concerns. A pathway diagram (Figure 1) was developed connecting these research questions to various downstream health outcomes including respiratory diseases, chronic diseases, mental health, intentional and unintentional injury, and mortality.

FIGURE 1 **PATHWAY DIAGRAM**



## METHODOLOGY

The following section outlines the methodology and data sources used to assess the health impacts of the Choice Neighborhood Transformation Plan. Additional methodology is provided in later sections that describe the findings for the key research questions this HIA seeks to inform. Overall, the following data sources were used to inform this HIA's assessment:

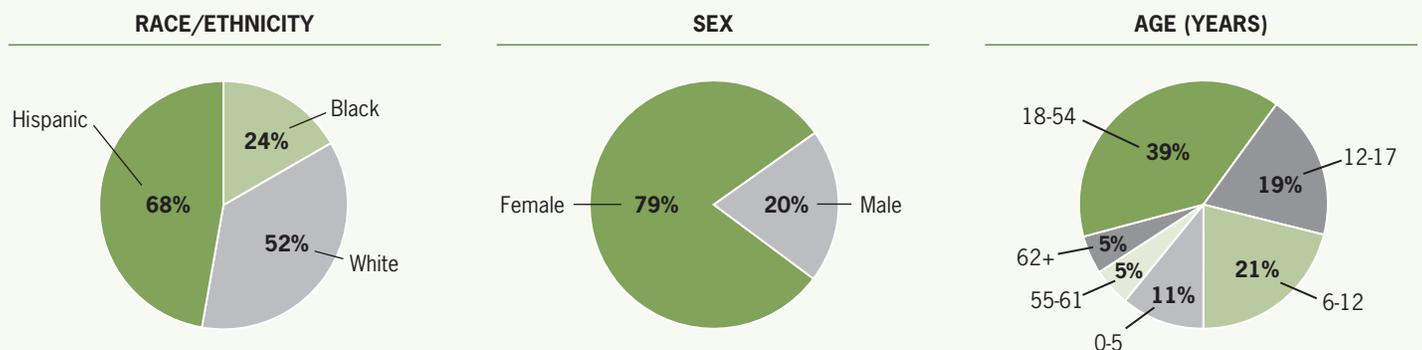
### Reinvent PHX HIA

In 2012, the City of Phoenix, in partnership with Arizona State University and Vitalyst Health Foundation, received funding from HUD's Sustainable Communities Initiative. As part of this project, a HIA was completed on the Transit-Oriented Development Plan that this initiative produced. The EEC was included as part of the Eastlake-Garfield District. This HIA sought to build on the Reinvent PHX Eastlake-Garfield District HIA findings and report. Utilizing previously data collected during Reinvent PHX, this HIA assessed implementation of recommendations from the report. For example, in the section on active, safe communities, we assessed any changes that were recommended to improve street safety in the Reinvent PHX HIA.

### Resident Survey

In March and April of 2017, the City of Phoenix conducted resident surveys with public housing residents. City of Phoenix housing staff and interns completed surveys with residents and offered residents \$5 gift cards in exchange for their time. Surveys were conducted in English and Spanish. There was a total of 83 questions included in the survey asking about transportation, employment, health, grocery shopping, use of amenities and access to the internet. A total of 341 of the 577 (61%) residents completed the survey answering questions about themselves and members in their household. The figures below describe the demographic profile of the survey respondents and household members.

FIGURE 2 DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS



Source: Resident Survey



## Community Interviews

Qualitative interviews with various community stakeholders were conducted in-person or via telephone during the scoping and assessment phases to better understand the community and health issues. A total of 11 residents that live in public housing were interviewed. Key service providers and potential community partners were also interviewed to better understand the assets and programming provided for residents. Organizations interviewed included Edison Elementary School, Maricopa Integrated Health System, Mountain Park Health Center, Southwest Institute of Autism Research and Resource, Boys & Girls Clubs of Metro Phoenix – Gabel Branch, and First Things First Phoenix South Region. Key departments within the City of Phoenix were included in stakeholder interviews including staff from District Eight, the police, streets, planning, environmental services, and housing.

## Community Workshops

The City of Phoenix hosted three community workshops during the HIA process. The first workshop was centered on identifying assets and visions for the future. The second workshop was focused on Edison Park and how to improve the infrastructure at the park. The third workshop was a design charrette where residents shared feedback to the initial housing and neighborhood plan. These workshops provided additional insight into the HIA research questions.

## Quantitative Data

Existing quantitative data was collected from numerous resources to assess the existing conditions of the community. This included the 2010 Census and American Community Survey — five year estimates. Crime data was provided by the City of Phoenix Police Department. Health data was provided by the Maricopa County Department of Public Health and sourced from the hospital discharge database. This data represents individuals living in the community that access hospital and emergency services. Arizona Department of Health Services provided a Special Area Report that describes healthcare services and usage for both census tract 1133 and 1139. A variety of data sources are used to develop this report including US Census data, hospital discharge data, healthcare board records, and vital records.

# ASSESSMENT

The assessment, the fourth step in the HIA, provides a profile of existing conditions and evaluates the potential health impacts of the redevelopment. The first part of this HIA’s assessment describes the characteristics and health profile of the EEC. In later sections, the assessment findings for the key research questions and recommendations to promote positive health outcomes are discussed.

## Existing Conditions

### The Neighborhood

The EEC is comprised of the Edison Park neighborhood and the eastern section of the Eastlake neighborhood located east of North 16th Street. It is bounded by I-10 to the north and east, North 16th Street to the west and the railroad tracks to the south (just south of Jackson Street). A map of the EEC can be found in Appendix A. Most businesses are located along North 16th Street, but there are also concentrations of businesses along Roosevelt, Van Buren, Washington, and Jefferson Streets. The EEC is also home to the largest concentration of public housing in the City of Phoenix. Within its boundaries are three public housing sites with a total of 577 units. Between Frank Luke Homes and A.L. Krohn Homes, located adjacent to one another north of Van Buren Street, and Sidney P. Osborn, located south of Van Buren, these public housing developments account for nearly half of the residential opportunities in the EEC.

**The EEC is comprised of the Edison Park neighborhood and the eastern section of the Eastlake neighborhood located east of North 16th Street. It is bounded by I-10 to the north and east, North 16th Street to the west and the railroad tracks to the south.**

### Who Lives in the Community?

#### Poverty

The percentage of EEC families living in poverty is 66.8%, significantly higher than the City of Phoenix (18.4%) and Maricopa County (12.6%). In 2016, the federal poverty level was an income of \$12,228 for a single-person household or an income of \$24,563 for a household of four people. People living in low-income neighborhoods are less likely to have access to healthy food and safe places to be physically active. The median income of the EEC is \$16,519. (See Table 1)

#### Disability

The percentage of households in the EEC receiving Supplemental Security Income (SSI) is 9.6%, greater than the 4.2% in the City of Phoenix and 3.5% in Maricopa County. Thirty-one percent of households in the EEC have a member with a disability which is also higher than the 21% of households in the City of Phoenix.

TABLE 1 SOURCES OF INCOME

	EDISON-EASTLAKE	CITY OF PHOENIX	MARICOPA COUNTY
Median household income	\$16,519	\$47,326	\$54,229
Families below poverty	542 (66.8%)	61,105 (18.4%)	118,645 (12.6%)
Households with wage/salary income	627 (53.6%)	413,407 (78.7%)	1,088,782 (75.5%)
Households with SSI	112 (9.6%)	22,051 (4.2%)	50,703 (3.5%)

Source: U.S. Census Bureau, 2015 ACS 5-year

## Racial/Ethnic Minorities

Of the total population, 13.5% of the residents classify themselves as black (compared to 6.5% and 5.0% in the City and County, respectively), and 79.0% classify themselves as Hispanic (compared to 40.8% and 29.6% in the City and County, respectively). Among the large Hispanic population, a significant percent has difficulty with English. Of the households that speak Spanish at home, nearly 40% are “limited English,” meaning that all members 14 years of age and older have at least some difficulty with English. This is nearly double the rate found in the City and County (Table 2).

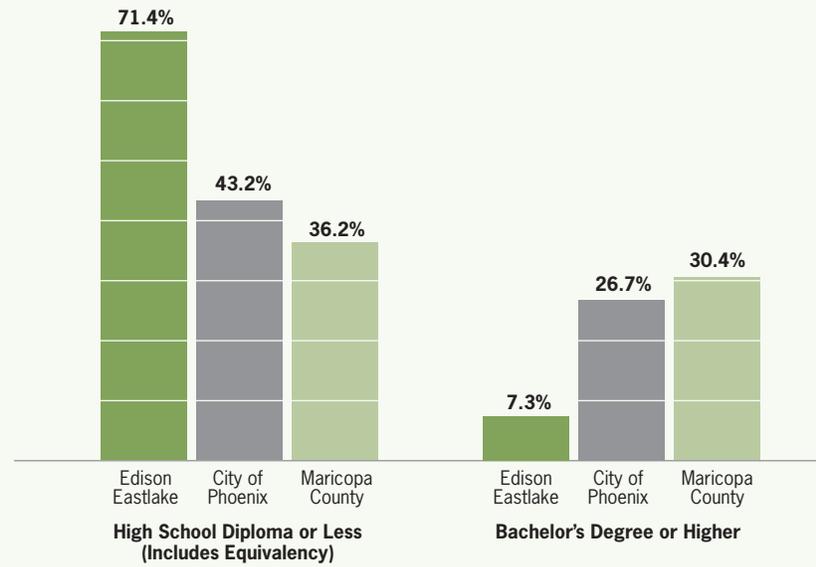
TABLE 2 **HOUSEHOLD RACE, ETHNICITY AND LANGUAGE**

INDICATORS	EDISON-EASTLAKE	CITY OF PHOENIX	MARICOPA COUNTY
<b>RACE</b>			
White	45.5%	65.9%	73.0%
Black	13.5%	6.5%	5.0%
Other	33.1%	18.5%	12.8%
<b>ETHNICITY</b>			
Hispanic/Latino (of any race)	79.0%	40.8%	29.6%
<b>HOUSEHOLD LANGUAGE</b>			
English Only	32.1%	65.4%	74.1%
Spanish	64.6%	26.7%	18.5%
Limited English speaking	37.2%	20.8%	19.2%
Not limited English speaking	62.8%	79.2%	80.8%

Source: U.S. Census Bureau, 2010 Decennial Census, 2015 ACS 5-year



**FIGURE 3 EDUCATIONAL ATTAINMENT OF RESIDENTS IN EEC**



Source: U.S. Census Bureau, 2015 ACS 5-year

### Educational Attainment

Educational attainment is low for the residents living in the EEC. Only 7.3% of residents have a bachelor’s degree or higher compared to 26.7% in the City of Phoenix and 30.4% in Maricopa County. As Figure 3 shows, most residents have a high school diploma (or equivalent) or less. Of the 71.4% of residents with a high school diploma or less, only 32.2% have an actual diploma or equivalent. This means that nearly half of residents have not completed any school or have completed up to 12th grade but did not receive a high school diploma.

### Age

The EEC’s population is significantly younger than the population of the City and County. As shown in Table 3, 48.0% of the EEC residents are under the age of 18, which is markedly higher than the City and County (28.2% and 26.4%, respectively). While living in poverty impacts all ages, children growing up in poverty experience greater mortality and morbidity than adults. They are more likely to become obese, participate in risky sexual behaviors, use tobacco, alcohol and other substances, be a victim of violence and/or have an accidental injury. (Robert Wood Johnson Foundation, 2017).

**TABLE 3 AGE OF RESIDENTS IN EDISON-EASTLAKE, CITY OF PHOENIX, AND MARICOPA COUNTY**

AGE	EDISON-EASTLAKE	CITY OF PHOENIX	MARICOPA COUNTY
<b>POPULATION AGE 0-17</b>	<b>48.0%</b>	<b>28.2%</b>	<b>26.4%</b>
Under 5 years	13.9%	8.3%	7.4%
5-14 years	26.5%	15.4%	14.7%
15-17 years	7.7%	4.6%	4.3%
<b>POPULATION 18+</b>	<b>52.0%</b>	<b>71.8%</b>	<b>73.6%</b>
18 to 24 years	9.2%	10.4%	9.9%
25 to 39 years	18.2%	22.8%	21.1%
40 to 54 years	14.1%	20.5%	20.0%
55 to 61 years	4.1%	7.2%	7.5%
62 and older	6.4%	10.9%	15.0%

Source: U.S. Census Bureau, 2010 Decennial Census

## Household Composition

At 70.2%, the EEC has slightly more family households than the City and County (64.2% and 66.1%, respectively). Of the family households, the EEC has a much higher percentage of female heads of household with no husband present (62.7%) versus the City (23.2%) and County (18.8%). There are more large households with 5 or more persons in the EEC (25%) than the City and County (16% and 13%, respectively).

TABLE 4 **HOUSEHOLD COMPOSITION AND SIZE**

INDICATORS	EDISON-EASTLAKE	CITY OF PHOENIX	MARICOPA COUNTY
<b>HOUSEHOLDS</b>	<b>1,023</b>	<b>514,806</b>	<b>1,411,583</b>
Family Households	718 (70.2%)	330,762 (64.2%)	932,814 (66.1%)
Male Household, No Wife	77 (10.7%)	36,234 (11.0%)	82,206 (8.8%)
Female Household, No Husband	450 (62.7%)	76,629 (23.2%)	175,551 (18.8%)
<b>HOUSEHOLD SIZE</b>			
1-person	266 (26%)	139,665 (27%)	365,212 (26%)
2-person	191 (19%)	148,277 (29%)	463,215 (33%)
3-person	150 (15%)	78,692 (15%)	209,758 (15%)
4-person	160 (16%)	68,272 (13%)	185,929 (13%)
5-person	141 (14%)	40,417 (8%)	101,336 (7%)
6+ person	115 (11%)	39,483 (8%)	86,133 (6%)

Source: U.S. Census Bureau, 2010 Decennial Census

## Health Status

There is a growing body of research that is focused on understanding the root causes of health. For a number of years, researchers have identified particular groups of people that have increased risk for poor health outcomes across the country. These groups include people with low incomes, people of color, people with disabilities, people with less than a high school education, and young and older age groups. (Centers for Disease Control and Prevention, 2013). Neighborhood traits, such as safety, access to jobs, transportation and quality healthcare, can further impact health disparities.

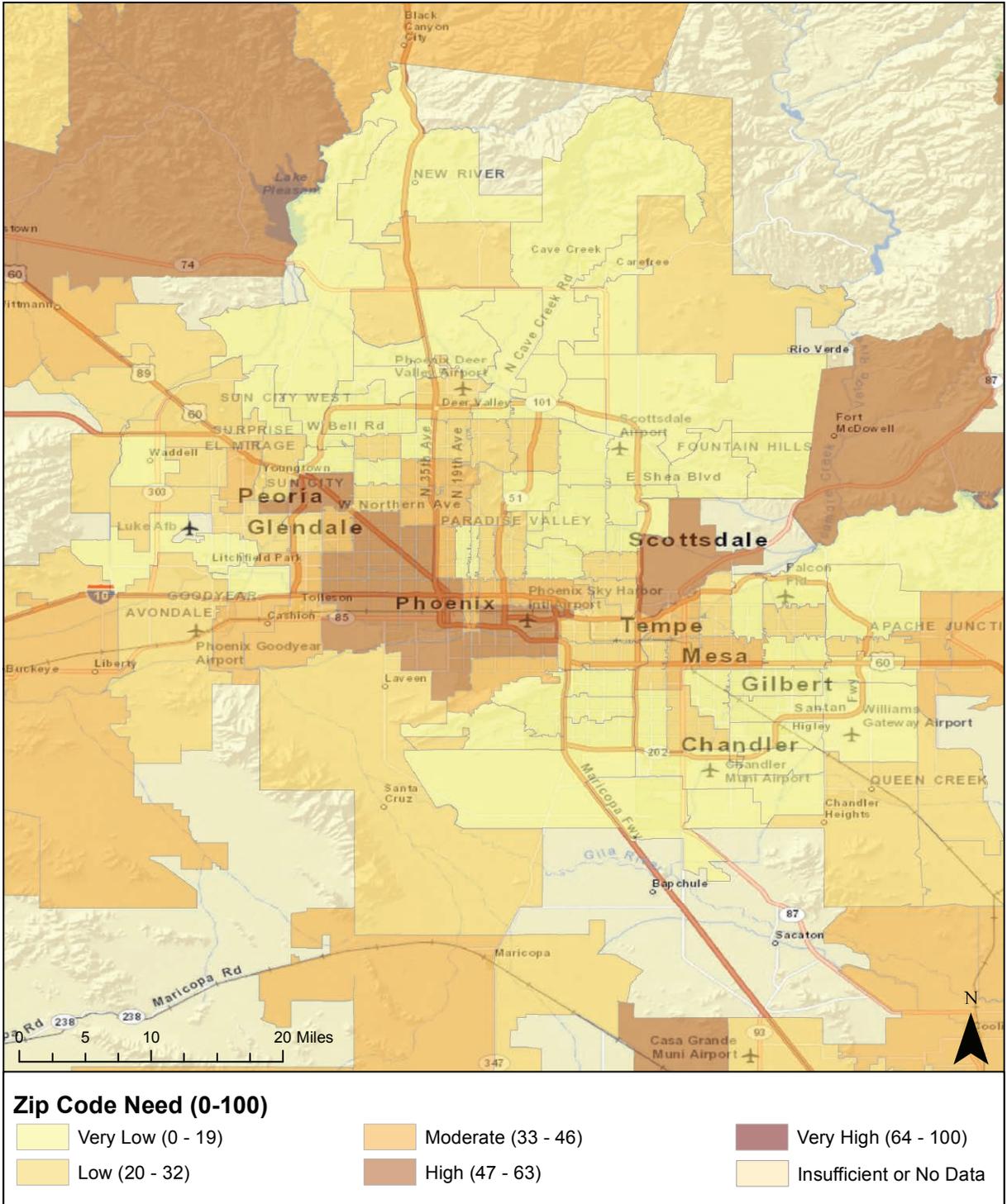
The EEC is home to more vulnerable populations to poor health outcomes when compared to the City of Phoenix and Maricopa County.

## Health Conditions

Based on life expectancy maps developed by Virginia Commonwealth University infants born in different parts of the city of Phoenix face a 14-year difference in life expectancy. Infants born in 85006, where A.L. Krohn and Frank Luke housing sites are located, have a life expectancy of 75. With only 85004 having a lower life expectancy, this zip code has the second lowest life expectancy in Phoenix. Unfortunately, there was insufficient data to calculate life expectancy for the zip code that Sidney P. Osborn is located in. (Virginia Commonwealth University, 2015).

**FIGURE 4 ARIZONA HEALTHY COMMUNITIES OPPORTUNITY INDEX – PHOENIX METROPOLITAN AREA**

The Arizona Partnership for Healthy Communities developed a Healthy Communities Opportunity Index that describes the health need of each zip code in Arizona. Based on the index, the EEC is in very high need zip codes indicating living in this area increases your chances for poor health outcomes.



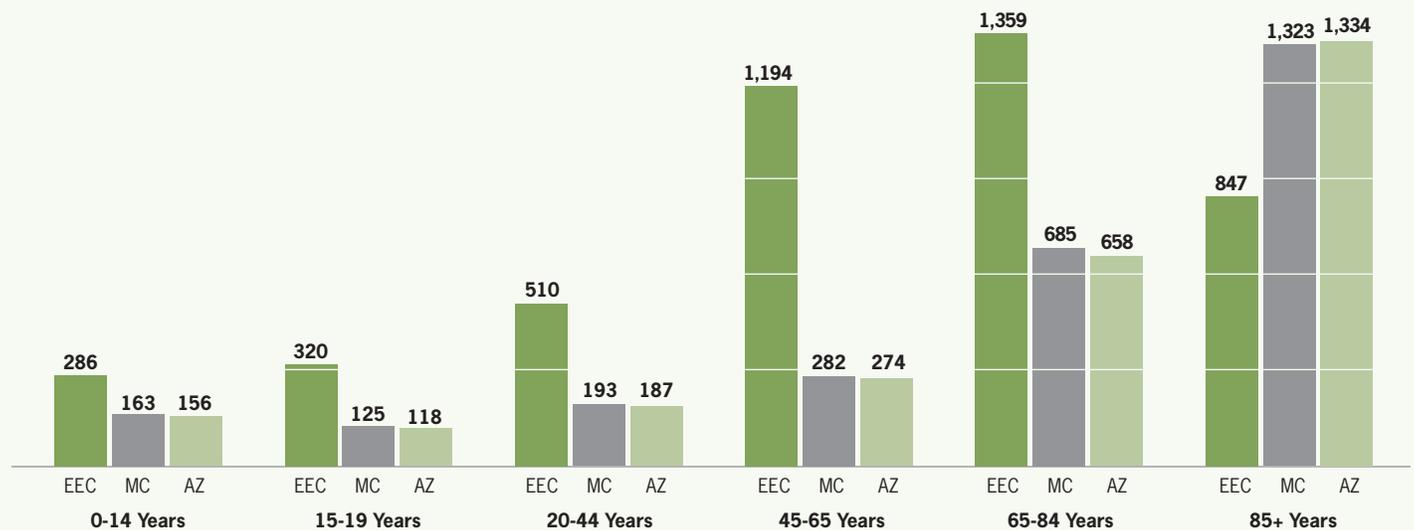
Note: Zip code need score intervals were calculated using Jenks natural breaks classification method.

Source: Arizona Partnership for Healthy Communities. Data sources: Esri, HERE, DeLorme, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, ©OpenStreetMap contributors, and the GIS User Community



The number of days residents are hospitalized inpatient is double the rate of the surrounding county, 593 days per 1000 residents compared to 272 days per 1,000 residents in Maricopa County. Figure 5 shows inpatient days are higher than the county and state across all ages except for 85 and older. Forty-five to 84 year olds experience significantly more inpatient days than the surrounding county and state indicating that poor health conditions impact residents earlier in life in this neighborhood resulting in early morbidity and mortality and reduced life expectancy. In addition, emergency room utilization is has increased through the years with 1500 more visits in 2014 compared to 2006.

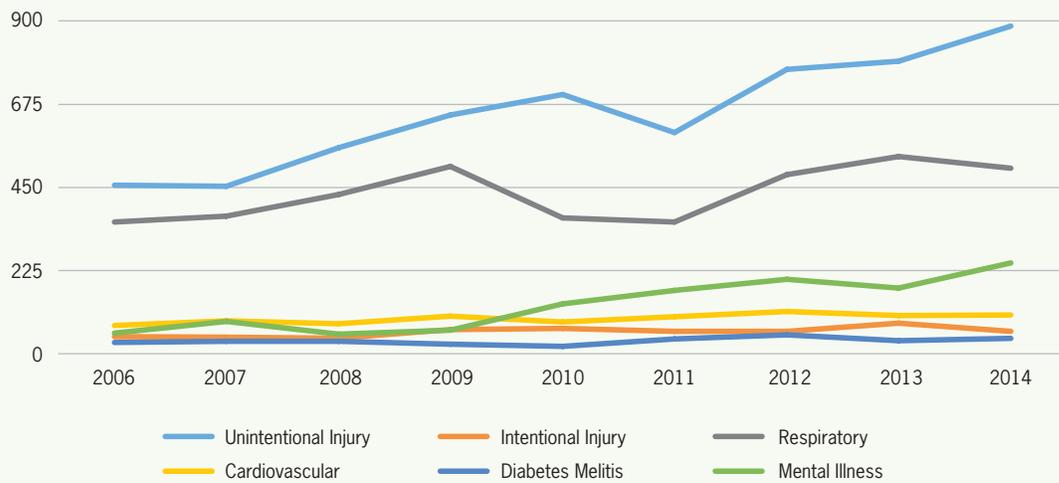
FIGURE 5 **INPATIENT DAYS PER 1000 RESIDENTS BY AGE GROUP**



Data Source: Arizona Department of Health Services, Hospital Discharge Data, 2015

In 2014, 19.6% of inpatient stays and emergency room visits are due to unintentional injuries, followed by respiratory diseases (11.1%), and mental illness (5.4%). These conditions have also been steadily increasing over time as shown in Figure 6. Unintentional injuries, including falls, motor vehicle collisions and unintentional poisonings are the 4th leading cause of death in Maricopa County. (Maricopa County Department of Public Health, 2012). In 2014, 19% of respiratory disease visits were due to Asthma compared to 15% in the City of Phoenix.

**FIGURE 6 NUMBER OF INPATIENT AND EMERGENCY ROOM VISITS FOR CENSUS TRACT 1133 AND 1139**



Data Source: Arizona Department of Health Services, Hospital Discharge Data, 2015

Many health conditions if properly addressed and managed through primary care and settings outside of hospitals could prevent hospital stays and emergency room visits. These conditions are known as ambulatory care sensitive conditions (ACSC) and are considered an indicator for access to primary care and quality of care in a community (Agency for Healthcare Research and Quality, 2001). Examples of ACSC conditions include, hypertension, asthma, diabetes, chronic obstructive pulmonary disease, dehydration, urinary tract infections and congestive heart failure. Table 5 shows the ACSC rate for residents living in the EEC census tracts. When compared to the state and Maricopa County, the EEC census tracts have significantly higher rates of ACSC.

**TABLE 5 AMBULATORY CARE SENSITIVE CONDITIONS PER 1000 RESIDENTS, 2016**

	CENSUS TRACT 1133	CENSUS TRACT 1139	BOTH CENSUS TRACTS 1133 & 1139	MARICOPA COUNTY	ARIZONA
ACSC/1,000 residents less than 65 years old	97.8	86.0	95.2	24.6	24.2
Points Above State Average	73.6	61.8	71.9	0.4	N/A

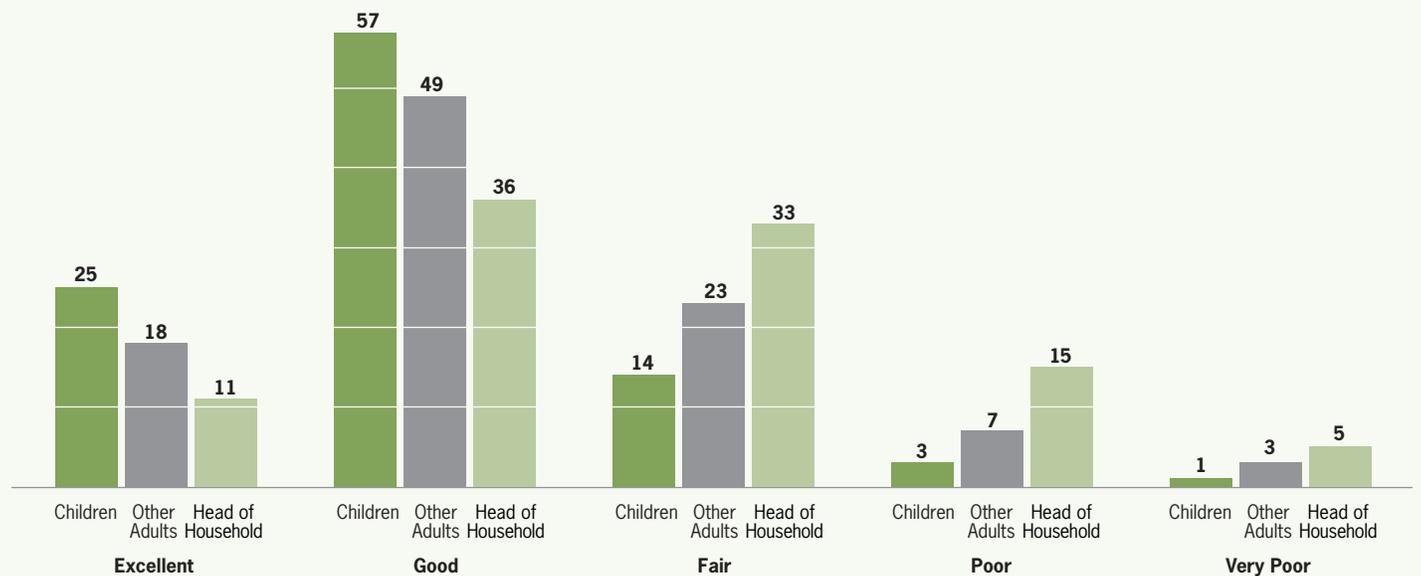
Source: Arizona Department of Health Services, Hospital Discharge Database

## Resident and Community Findings

### Resident Survey

Self-reported health among survey respondents is mixed. Respondents were more likely to report good or excellent health for children in the household, but still nearly one in five (18%) children are in fair, poor or very poor health. More than half (53%) of head of households reported having fair, poor or very poor health.

FIGURE 7 SELF-REPORTED HEALTH BY SURVEY RESPONDENTS

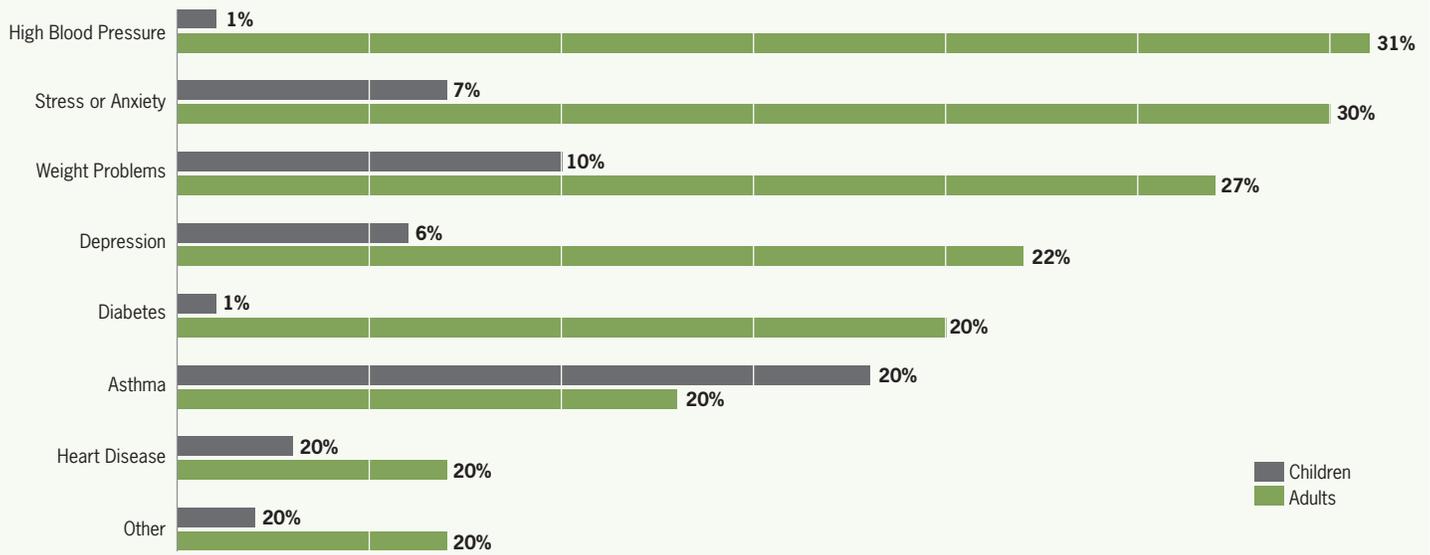


Data Source: Resident Survey

Respondents with children reported nearly universal coverage (98%) among children. Regardless of coverage status, most respondents do regularly seek medical care. Eighty-four percent of respondents reported receiving yearly medical checkups, 18% of whom reported no insurance coverage. However, less than half (47%) reported using a primary care doctor when in need of health advice. Instead, one in four (26%) respondents go to an emergency room when they need health advice (most commonly Maricopa Integrated Hospital and St. Luke's Medical Center), 30% seek health advice from a hospital, and 12% go to an urgent care center. Overall, respondents highly rated the health care services they receive, with 50% giving a good rating and 33% an excellent rating.

Residents reported various health challenges they are currently facing. Adults were most likely to report high blood pressure and stress/anxiety. Fifty-three percent of respondents identified mental health conditions (depression and stress/anxiety) for adults, followed by cardiovascular conditions (high blood pressure and heart disease combined are 38%). Asthma was the most common health condition reported for children. Respondents identified weight problems for both adults and children. It was the third most common condition for adults and second most common condition for children.

FIGURE 8 SELF-REPORTED HEALTH CONDITION FOR ADULTS AND CHILDREN



Data Source: Resident Survey

## Qualitative Interviews

The following themes emerged from the resident interviews. Most individuals interviewed had lived in their respective housing project for several years. Residents in Sidney P. Osborn project felt safe and liked that everybody watched out for the children. Residents at Frank Luke and A.L. Krohn reported feeling less safe and noted gang activity especially in Edison Park. Most interviewed used private cars for transportation, although adolescents used public transportation to go to school. Most interviewed did grocery shopping at Walmart, Food City and specialty stores. Several stated that they look for the best price and bargains. Few regularly shopped at Ranch Market and no one shopped at Baiz Market. They expressed concerns about the quality and pricing of food at Ranch Market.

Almost all residents thought there needed to be more programming especially for youth. Several residents felt that the properties were not well maintained. Specifically, in Sidney P. Osborn, the grass in the mini-park was dormant because the sprinklers were broken and had not been repaired. At both properties, residents reported that there were issues within their apartment that had not been repaired despite repeated requests.

## Service Providers and Community Partner Interviews

Service providers interviewed in the community identified various challenges in serving the community. Many reported low service numbers for residents living in the public housing sites. While not all child care facilities in the area were interviewed, those that were interviewed reported low number of public housing children in attendance. Barriers identified by these providers were limited transportation for families to access services or inconsistent attendance by families in programming. While there are examples of highly engaged parents, service providers generally felt families were less engaged in their child's school and care. Children with less engaged parents were described to be the youth that were more likely to get in trouble with school or law enforcement. Language barriers were also identified as a challenge. With a large Spanish-speaking population, service providers were limited in bilingual staff which further limited their ability to connect and serve these families. Generally, service providers felt challenged in outreach, engaging and serving families living in the public housing sites.

Residents reported receiving health care in many different places.  
There was a general satisfaction with their healthcare provider.

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## FINDINGS AND RECOMMENDATIONS FOR HEALTH DETERMINANTS

The following section outlines the assessment findings, implications for health outcomes and recommendations to improve health for each of the key research questions. Additional background is provided on specific methodology used to assess each health area. Recommendations are categorized as policy, infrastructure or programming strategies. Implementing strategies from all three categories will have the greatest impact on health outcomes for the EEC.

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### THRIVING COMMUNITIES AND FAMILIES

#### Why it Matters

A resilient community describes both the resilience of the individuals making up the community and the resilience of the community as a whole. Individual resilience is composed of three components: (1) biological adaptability to stress; (2) attachment, or capacity to form meaningful, caring relationships; and (3) sense of control, or ability to make sense of and/or manipulate one's environment. A community is defined by a sense of place, shared common perspectives or interests, diversity in relationships and roles, sense of togetherness, and joint action and engagement (Hughes, 2003).

Central to resilience and community is social cohesion. In the broadest sense, social cohesion is the “glue” that holds communities together and enables them to build bridges to others. In 1995, the U.N. World Summit on Social Development defined a socially cohesive society as one in which all groups have a sense of belonging, participation, inclusion, recognition and legitimacy (Chinchilla, 2016). Research suggests that individuals who feel a sense of security, belonging and trust in their community have better health. Conversely, those that feel isolated and not connected are less likely to engage in health-promoting behaviors. Building a community of choice where everyone has the means and opportunity to make choices that lead to their healthiest life greatly relies on the social cohesion and resilience in the community. Strong, meaningful social support — from a partner, friends, or family — leads to healthier, more resilient individuals and communities. These social resources can provide emotional support in difficult times, a ride to work when the family car breaks down, or shared health-promoting information amongst neighbors. Access to social support is associated with protective health effects including improved mental health outcomes, reduced stress, better cardiovascular health, better immune system functioning and more (Berkman & Kawachi, 2000). Children living in thriving neighborhoods with strong social connections, community involvement and supportive family structures are more likely to have upward mobility or improved economic opportunity between generations (Chetty, Hendren, Kline, Saez, & Turner, 2014). Improved economic opportunity is correlated with improved health outcomes (Katikireddi, 2016). Thus, the interdependence of each other in a community cannot be taken lightly. When some residents do not have the opportunity, or means to live healthfully, this affects the entire community. Providing opportunities for all existing and new residents in EEC to forge relationships, foster social support and deepen connections is important for all ages and at all stages of the redevelopment process.

**Providing opportunities for all existing and new residents in EEC to forge relationships, foster social support and deepen connections is important for all ages and at all stages of the redevelopment process.**

Fostering social cohesion in a diverse, mixed income community can happen in variety of ways from resident leadership opportunities to property management practices and from access to public gathering spaces to opportunities for youth engagement (Chinchilla, 2016). A thriving community has strong social cohesion, strong family support, strong programs for children and opportunities for all including vulnerable populations.

## Methodology

Although thriving communities can be difficult to measure, relevant research has validated proxy measures for social cohesion including community trust and civic engagement. To measure the level of trust and relationships in the community we included seven questions in the resident survey. Residents were asked to rate their level of agreement with each statement listed in Table 6.

Civic engagement was measured by voter turnout for the 2016 presidential election. The target area falls between two precincts that go beyond the EEC boundaries. The residents north of Van Buren Street, including those that live in A.L. Krohn and Frank Luke, are located in the Edison precinct and the residents south of Van Buren Street, including those that live in Sidney P. Osborn, are located in the Monroe precinct. For benchmarking, the county and state level data were included. State level data was obtained from the Arizona Secretary of State. The precinct and county data were provided by Maricopa County Recorder's Office. We also interviewed residents and made observations about community leadership roles for residents that can be an opportunity for local engagement.



Family and youth engagement were also assessed as a component of thriving, resilient community, particularly focusing on early childhood development. Early childhood marks a time of peak plasticity in the brain, and early adversity can weaken the foundation upon which future learning will be built; in other words, positive developmental experiences in early life are crucial. (Center of the Developing Child at Harvard University, 2010). Existing data points were limited to help assess the strength of families and early childhood experiences. We used qualitative resident interviews, community workshops and interviewed key service organizations in or near the community that provide services for families with children. Key organizations that were interviewed included Edison School, Boys & Girls Clubs of Metro Phoenix – Gabel Branch on 15th Street and McDowell Road, Southwest Autism Research and Resource Center, City of Phoenix Police Department and First Things First.

## Existing Conditions

### Community Connection and Trust

Based on resident survey results, most residents reported that they had no or only a few family or friends that live in the community. Over half of residents felt people generally get along with each other and help each other out, but fewer residents felt people could be trusted or shared the same values. Table 6 shows that while connections exist in the community, they are often surface level connections. This was reinforced while completing resident interviews. Two interviews with long-term residents that lived in the A.L. Krohn and Frank Luke community for over 27 years reported that they did not know their neighbors. Resident interviews and the RLC also indicated that Sidney P. Osborn and Frank Luke residents rarely interact. This is due in part by the physical barrier of Van Buren Street. Overall, there are minimal deep connections and friendships among residents living in the public housing sites.

TABLE 6 NEIGHBORHOOD RELATIONSHIPS

	STRONGLY AGREE/AGREE	DISAGREE/STRONGLY DISAGREE
People generally get along with each other	63%	23%
People help each other out	58%	23%
We watch out for each other's children	55%	26%
There are people I can count on	50%	33%
People can be trusted	36%	44%
People share the same values	27%	42%
There are people who might be a bad influence on my children	52%	22%

Source: Resident Survey

Van Buren is a significant barrier in the EEC. It effectively divides the community in to two neighborhoods, one south of Van Buren and one north of Van Buren. Sidney P. Osborn, located south of Van Buren, is surrounded by more industrial land use and somewhat isolated from community assets, such as parks, grocery store, hospital, neighborhood school and the community center at Aeroterra. Even the children living on either side of Van Buren attend different schools. Children that live in the Sidney P. Osborn community live in the Garfield Elementary School catchment area and are bused to the school at Roosevelt Street and 13th Street. Children living at A.L. Krohn, Frank Luke and Aeroterra attend Edison School that is walking distance from the housing sites.

Additionally, the current uses of Van Buren Street are not consistent with the type of neighborhood residents want to cultivate. Originally a major U.S. highway, Van Buren Street was home to numerous motels and motor courts. Some of that lodging still exists today mostly to the east of the EEC. The Reinvent PHX HIA for the Gateway and Edison District reported that many of the remaining motels are now home to registered sex offenders, prostitution and other criminal activities. While, there are no motels in the EEC area, residents have expressed worry about their children being exposed to the adult entertainment business along Van Buren Street. In the EEC, most businesses located on Van Buren Street are convenience stores that are licensed for off-site liquor sales, used car lots, automotive repair, and fast food outlets. There is one adult

entertainment business on the west side of Van Buren Street and 16th Street that residents talk about with concern.

Through observation and resident interviews, it became clear there is a different sense of community on either side of Van Buren. Sidney P. Osborn is physically isolated from the assets north of Van Buren and residents of Sidney P. Osborn are reluctant to participate in activities north of Van Buren citing safety as a major concern. An interview with the neighborhood officer indicated that there is still gang activity in the A.L. Krohn and Frank Luke housing sites that is not at the Sidney P. Osborn site. Residents living in A.L. Krohn and Frank Luke report fear of retribution when reporting incidents to the police. Some residents felt they needed to share their contact information with the police which would lead the police to contact them or identify them in the neighborhood by knocking on their door.

Despite Sidney P. Osborn lacking assets and resources, residents reported neighbors helped watch out for neighborhood kids, neighbors kept “people who do not belong onsite” out of the community, and neighbors helped give rides and provide transportation at times for each other.

### Civic Engagement

Looking at civic engagement metrics, Table 7 shows that the precincts that include the EEC target area are less likely to turnout to vote when compared to Maricopa County or Arizona. Although still below the county and state, the precinct that Sidney P. Osborn is located in, Monroe precinct, has a higher voter turnout rate than the precinct that includes A.L. Krohn and Frank Luke housing sites.

Furthermore, resident leadership opportunities are limited in the community. There are resident councils at each housing site. However, the meetings are led by the property manager for the purpose of presenting new rules and policies for the tenants. There is one newly formed resident leadership opportunity that was created through the Choice Neighborhood planning grant which is the resident leadership training program and RLC facilitated by Phoenix Revitalization Corporation. There are four churches located within the boundaries, however, these religious institutions seem to serve members outside of the community and lack a strong presence with residents living in the public housing sites.

### Family Support, Youth and Early Childhood

The EEC is a young community with 50% of the residents under 18 compared to 28% citywide. Of those under 18, 30% are under the age of five. In both neighborhoods, residents report the need for family support and family-driven services. Resident interviews repeatedly expressed concern about parent engagement and unsupervised children in the neighborhood. While parenting programs and other classes are offered onsite, community service providers identified challenges in the community due to poor attendance or low participation rates. The resident survey confirmed low attendance with 91% of residents surveyed reported never using parenting skills classes offered. To meet child care needs, most residents surveyed that had children five and younger reported using informal childcare settings where children are cared for by a family member/friend, a nanny/sitter, or parent in a home setting. Respondents indicated that 41% of young children were enrolled in an early childhood program such as Head Start/Early Head Start, another child care center, pre-K and Kindergarten.

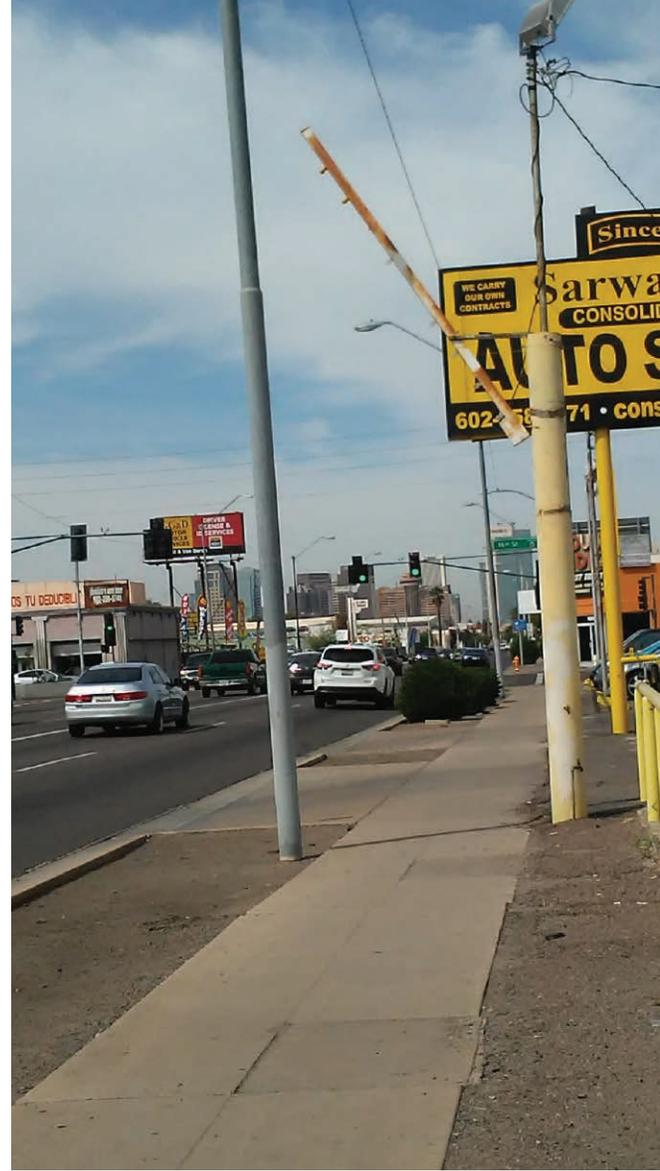


TABLE 7 VOTER TURNOUT 2016 PRESIDENTIAL ELECTION

GEOGRAPHICAL AREA	VOTER TURNOUT (%)
Edison Precinct	55.11
Monroe Precinct	62.61
Maricopa County	74.43
Arizona	74.17

Source: Maricopa County Recorder’s Office and Arizona Secretary of State

**When asked how the community will change in the next five years, a third felt it would get worse and nearly half of the residents surveyed felt it would get better.**

For school age children, residents report lack of afterschool opportunities, particularly for middle to high school youth. The resident survey indicates that most school-age children go home (68%) after school. Phoenix Elementary School District operates a before and after school program called Phoenix Elementary Enrichment Resources (PEER) Club at each of its schools. The PEER Club is free and operates from 6:30/7:00am to 6:00pm five days a week and is also open during school breaks. Participation by students is low as only 5% said that their children go to PEER Club after school. There is also very low participation (1%) with the Boys & Girls Clubs of Metro Phoenix. The nearest location — Gabel Branch — is located just north of the EEC community on the other side of I-10. When asked for the reason why children do not participate in out-of-school time programs, survey respondents cited cost (29%) and lack of knowledge of available programs (28%) as the most common reasons. Interviews with residents also shared concern for quality of after school programming. Some reported activities did not engage the older school age children. Interviews with the principal in Edison shared similar sentiments that there are no programs that engage the 10-12 year olds and teenagers in the community. This is often the age that residents reported youth getting in trouble with neighbors and police.

While there are challenges to overcome, there is hope among residents for future change in the community that will make a difference for residents. When asked how the community will change in the next five years, a third felt it would get worse and nearly half of the residents surveyed felt it would get better. Sixty-five percent of those surveyed indicated a desire to return to the community after the redevelopment and only 9% did not want to return. The remainder didn't know or wanted more information to make the decision.

## **Evaluating Health Impact**

Fostering a resilient community that is connected, trusting and engaged can improve the health and wellbeing of the community through all phases of the development. There are various challenges that might hinder individual and community resilience throughout the EEC's redevelopment process. First, the resident population is very diverse, with people of varying ages, household structures, languages and cultures and levels of ability. The redevelopment will add another level of diversity among income levels which can further challenge the social cohesion of the community. In addition, the relocation and replacement of housing communities may disrupt existing social ties among residents as they move into a new, larger mixed income housing. This may make it more challenging at first to reach out and forge new connections among residents. Furthermore, Van Buren is a clear divider in the community. This was found to be consistent with the Reinvent PHX findings and, if not fully addressed, will prohibit community-wide social cohesion.

**Van Buren is a clear divider in the community. This was found to be consistent with the Reinvent PHX findings and, if not fully addressed, will prohibit community-wide social cohesion.**

Given the large population of young children in the community, particular attention needs to be made to support families with young infants and children. Children in low-income families often are exposed to more adverse early childhood experiences and environmental factors that delay or compromise their development and place them at a disadvantage for healthy growth and school readiness (Shonokoff & Garner, 2012). In addition, low-income families are less likely to enroll children in center-based child care. A study in 2010 found that less than half of children in families in the lowest income quartile were enrolled in center-based early childhood education programs (Duncan,

Given the large population of young children in the community, particular attention needs to be made to support families with young infants and children.

2013). Research shows that every \$1 invested in early childhood can yield returns between \$4 and \$16 (First Things First, 2016). Benefits are realized for young children, families and communities. Young children with positive rich learning environments are more likely to graduate high school and have better health outcomes. Mothers are more likely to gain employment and income. Communities are less likely to experience crime or child abuse and neglect, and schools save from less remedial education (Reynolds, Temple, & Ou, 2010). This makes investing early in life a key opportunity to promote the health of the EEC.

Further opportunities to promote health include minimizing uncontrollable stressors, increasing opportunities for diverse connections among residents of varying ages, levels of ability and diverse cultures, increasing leadership opportunities for residents and improving family support and youth opportunities. These have the potential to strengthen community resilience and social cohesion for the redeveloped EEC, both of which are integral to positive physical and mental health outcomes.

## Recommendations

The following recommendations are intended to improve the resiliency and social capital of individuals and the community. There are recommendations for policy adoption, infrastructure development and programming support. For best results, policy, infrastructure and programming recommendations should be adopted to maximize the health impact.

### Policy

- **Adopt management policies and practices that prioritize inclusive resident leadership and utilize resident assets.**

The City should work with the RLC to form one single Resident Council/Tenant Association for each housing site including establishing an incentive for participation in the association. Creating a single organization across tenure can help eliminate power dynamics between market rate and subsidized renters in the community. It will promote collaborative decision making and set shared housing values. The association should be involved in rule making, addressing building management conflicts and programming offered in the community.

Explore ways to employ residents in maintenance and management of the building. This may include offering landscaping/maintenance services, providing onsite programming for youth, or serving as a community health worker.

Allow community spaces to be utilized when staff is not onsite to increase access to resources. Vetted resident(s) can be responsible for opening and closing community spaces with very clear accountability guidelines for this role.

**Rationale:** Creating a resident-driven process will offer community ownership and increase engagement in the community. In addition, these associations will offer opportunities for diverse residents to interact and build connections to one another. Creating leadership roles in the community will also help individual self-efficacy increase which further promotes social cohesion.

Creating a resident-driven process will offer community ownership and increase engagement in the community.

## Infrastructure

- **Create a community of opportunity by prioritizing healthy child development from birth through college entry through infrastructure development and high quality services for both adults and children.**

Dedicate appropriate space in the housing redevelopment to offer onsite child care and youth programming. Work with community partners to offer sustainable programming onsite in the space dedicated for children. These programs should provide services to all children living in the community, regardless of income.

Explore how to meet standards to offer in-home family child care regulated by Arizona Department of Economic Security – Child Care Administration, and include these design elements in the housing plan.

**Rationale:** Providing onsite care will improve the opportunity for participation. To promote a cohesive community, all children in the community should be able to participate in the program to further social cohesion across incomes and race. For example, the childcare program may offer Quality First scholarships or Head Start spaces for low-income families while other families may pay full rate for services. Children and families are treated the same and offered the same programming regardless of income or race.

Given many families in the community currently use family, friends or neighbors for care, it is important to improve the quality of these services. Creating units that can serve as regulated family child care homes can support quality improvement of these homes as well as offer employment opportunity for residents living in the unit.

- **Ensure equitable distribution of community infrastructure, facilities and programming on both the north and south side of Van Buren Street.**

All sites should have onsite community centers that offer computer access and community rooms that can be used by residents and other programming as identified by residents.

Expand the parks and public gathering spaces throughout the community to foster community connections among housing residents. Design the spaces with amenities that best suit the housing units. For example, one to two bedroom units will attract singles, young adults and couples without children, whereas three to five bedrooms will likely house families and adults with children. Particular attention should be given to the Sidney P. Osborn neighborhood where park space is limited and not well maintained. If Sidney P. Osborn is the last housing site to be redeveloped, there should be effort to bring the existing mini-park back to life by fixing irrigation, installing sod, adding soccer fencing to the soccer goal posts for the current families living onsite.

**Rationale:** Creating shared public gathering spaces on site will foster cohesion within each housing site. Van Buren Street is a historical divider in the community and will take time to develop community cohesion across the divider. Fostering social cohesion within the housing sites may improve the ability to create long-term community cohesion.

Creating units that can serve as regulated family child care homes can support quality improvement of these homes as well as offer employment opportunity for residents living in the unit.

Expand the parks and public gathering spaces throughout the community to foster community connections among housing residents.

## Program

- **Partner with community organizations and allocate resources to provide ongoing trainings and programming on facilitation, mediation, restorative justice and leadership development to all residents to support community participation and engagement.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

**Rationale:** Strengthening residents community building and community organizing skills will foster greater social cohesion among residents and help shape more effective neighborhood groups/tenant associations. Simply creating mechanisms for inclusive participation does not ensure their success, and it is important to explicitly take into account social difference and unequal access by guaranteeing representation of marginalized social groups (Young, 2000).

- **Support both formal and informal family support programming to strengthen caregiver/parenting skills and families.**

Offer family-driven support programs such as Cruciendo Unidos, Facts of Life, Home Visitation, Parent Ambassador Program and others. Work with resident leaders and tenant councils to determine type of programming and aid in the outreach and participation of the programs.

Enhance the quality of child care services using Family, Friend and Neighbor programs, such as Kith and Kin.

Encourage the development of mothers' clubs and sports leagues led by residents with support from the City of Phoenix and/or community-based organization.

**Rationale:** Facilitating opportunities for parents/caregivers to interact with one another will help families build social connection, build support systems with each other and strengthen parenting skills to better support outcomes for children living in the community.

Encourage the development of mothers' clubs and sports leagues led by residents with support from the City of Phoenix and/or community-based organization.



# ACCESS TO HEALTHY AFFORDABLE FOOD

## Why it Matters

Good nutrition is vital to good health, preventing disease and healthy development of young children and adolescents. Evidence shows that nutritious diets and regular physical activity plays an important role in preventing obesity, heart disease, stroke, cancer and diabetes, which together comprise the leading causes of death and disability in the U.S. (CDC, 2017). Changing dietary and lifestyle patterns can dramatically improve population health. Specifically diets that include a variety of vegetables, whole fruits, whole grains, fat-free or low-fat dairy and/or fortified soy beverages, a variety of protein foods, oils, and limits saturated and trans fats, added sugars and sodium (U.S. Department of Health and Human Services and U.S. Department of Agriculture, December 2015).

While nutrition is about what we eat, our eating choices are influenced by our environment, where we live, work, play and learn. The location of all food outlets, from supermarkets to convenience stores, farmers' markets to fast food restaurants, can profoundly affect a community's collective health. Often income levels of neighborhoods can predict the availability of healthy food in a community. Minority or low-income families are more likely to live in communities with limited or no access to healthy, affordable food, often called low access communities (Rhone, Ploeg, Dicken, Williams, & Breneman, 2017). The lack of conveniently accessible, healthy and affordable retail food outlets, coupled with low family income and high transportation cost, can exert substantial influence over what a family eats. While the EEC does not meet the technical definition of a food desert, the district does face serious barriers to accessing healthy and affordable food.

By improving the food environment of the EEC, the health of its current and future residents can be largely improved.

## Methodology

To assess the healthfulness of the food retail outlets, an evidence-based short-form corner store audit tool (SCAT) was completed on 11 food outlets (DeWeese, 2016). Based on type and quantity of food items available and participation in WIC, each retail outlet was rated on a 1 to 7 scale where 7 is the healthiest retail outlet. The scores were further grouped into categories: good (5-7), fair (3-4), and poor (0-2) to describe the healthfulness at each food outlet. (Appendix B )

Geographical information system (GIS) was used to visualize the food outlets in the community and calculate walking distance to food outlets that received a good SCAT score.

We also reviewed the Reinvent PHX HIA that assessed and made recommendations about the food environment.

## Existing Conditions

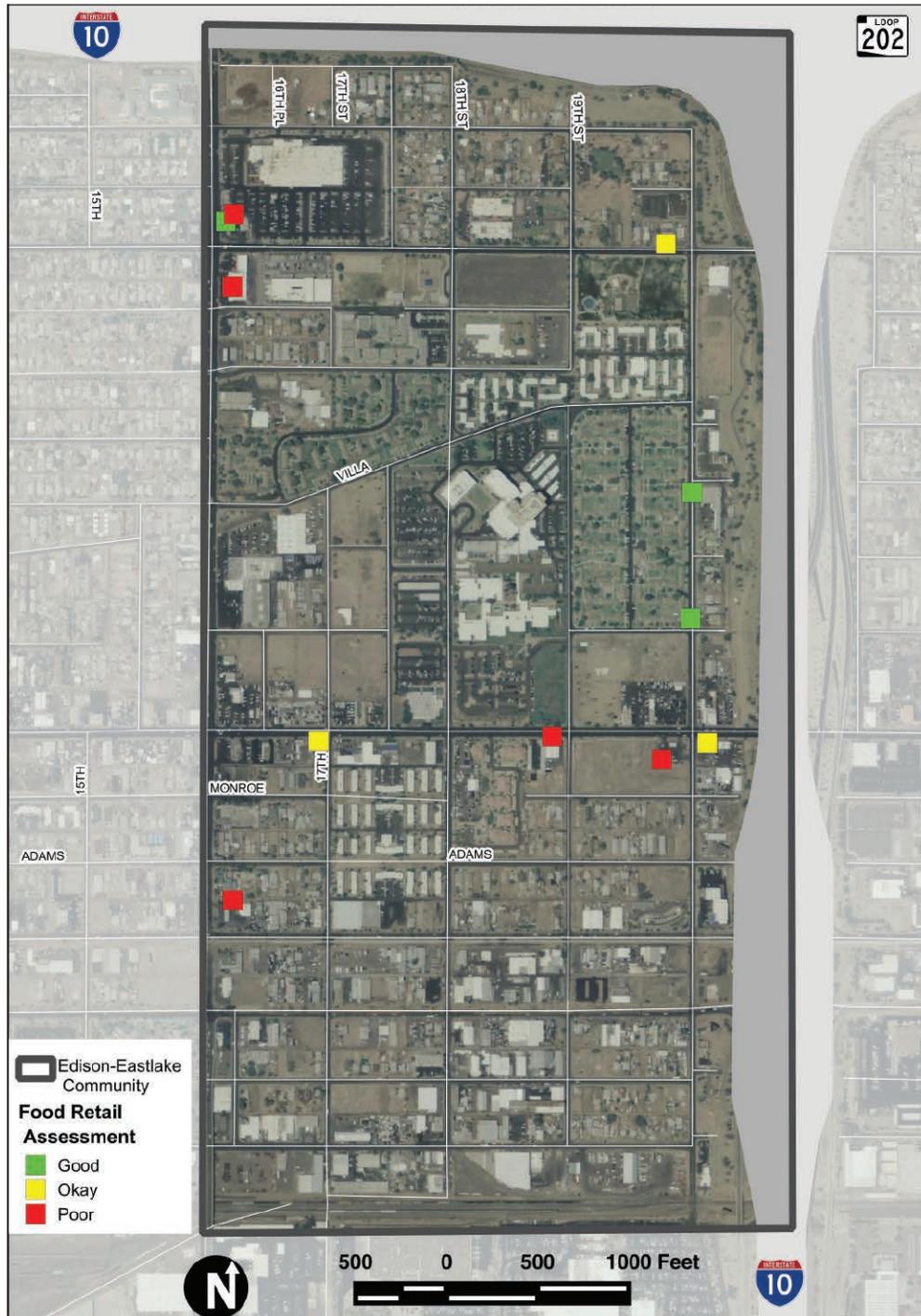
### Food Retail

The EEC has 11 food retail outlets, largely composed of convenience stores. There is one supermarket or large-scale grocery store, Ranch Market, located at 16th Street and Roosevelt. Baiz is a small-scale grocery store located on 20th Street between Van Buren and Roosevelt Streets. Both Ranch Market and Baiz are ethnic grocery stores specializing in Hispanic and Middle Eastern foods, respectively. The nine other food retail outlets are convenience stores.

**While the EEC does not meet the technical definition of a food desert, the district does face serious barriers to accessing healthy and affordable food.**

We analyzed the healthfulness of the food retail outlets using the SCAT form found in Appendix B. Only three of the 11 food retail outlets, Ranch, Baiz and Patty's Market received good scores. The least healthful outlets were the convenience stores that tended to have less variety of fresh produce. It was also noted the convenience stores were all off-premise liquor stores with liquor advertisements displayed.

FIGURE 9 **FOOD RETAIL ASSESSMENT**

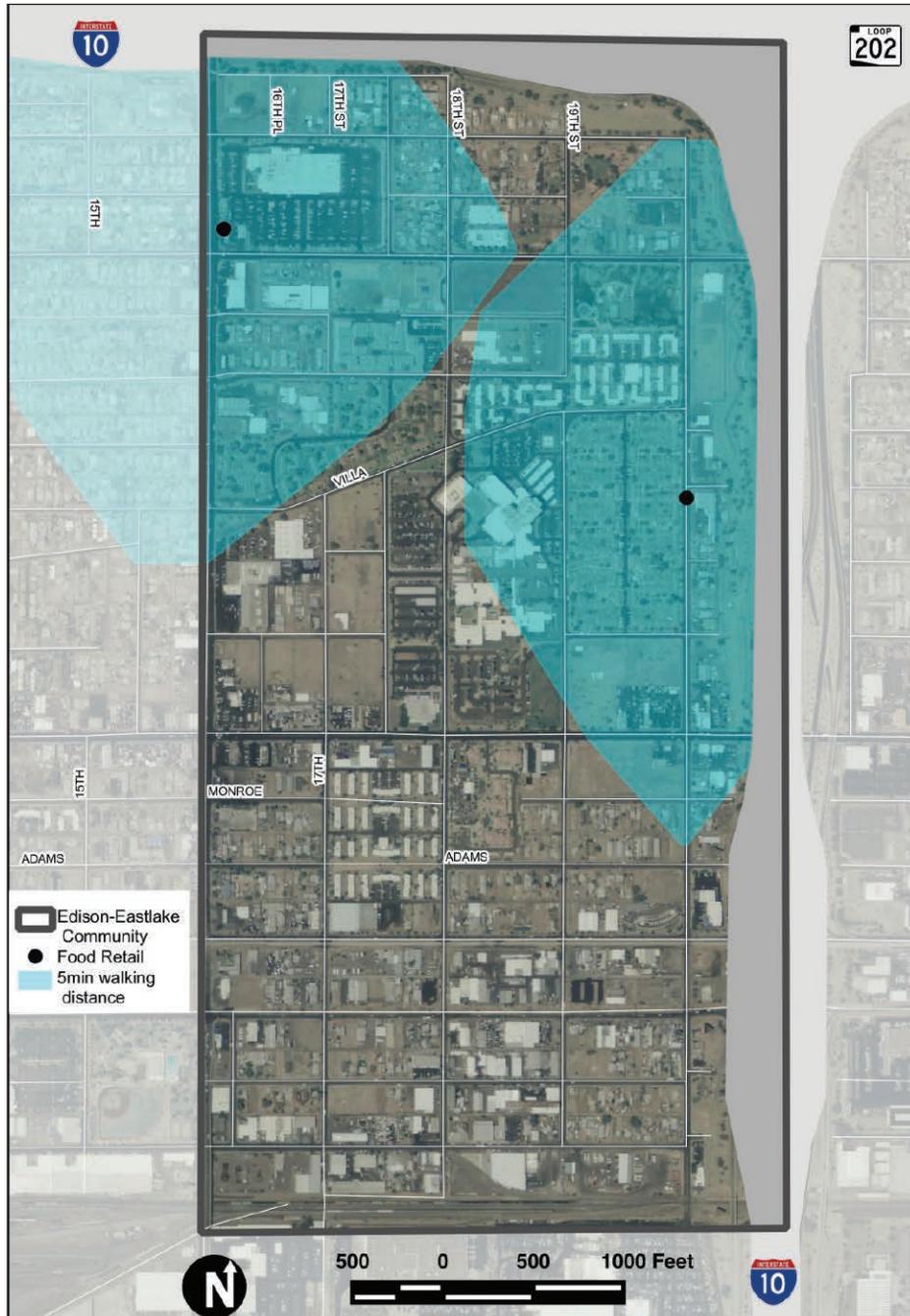


Map Source Elements: Esri World Imagery, QGIS and QGIS community

The resident survey indicates that only 42% of residents have access to their own vehicle. As such, many residents report walking, using public transportation, or getting a ride from someone to access resources, such as grocery stores. With 45% of residents reporting that walking is often used as their mode of transportation, we analyzed walking distance to the food outlets with a good SCAT score in the neighborhood. Analysis from the National Household Travel Survey indicates that most people who walk

for food or meals tend to walk shorter distances than if walking for recreation purposes (Yang & Diez-Rouz, 2012 ). With the added challenge of summertime heat, we used a five-minute walk as our standard and found that only 15% of the residents live within a five-minute walk of Ranch Market, 37% live within a five-minute walk of Baiz Market and 31% live within a five-minute walk to Patty's Food Mart. Sidney P. Osborn residents have the least access to healthy food retail outlets in walking distance.

FIGURE 10 RANCH AND BAIZ WALKING MAP



Map Source Elements: Esri World Imagery, QGIS and QGIS community

## Food Shopping Experience

Residents are not satisfied with the food retail outlets in their neighborhood. Residents voiced the need for another large-scale grocery store through the community workshops, surveys, RLC, and resident interviews. Seventy-two percent of residents surveyed rated access to grocery stores as good or excellent, however, this is also the number one business (54.1%) they'd like to see more of in the neighborhood. The employee survey revealed similar findings with 55.6% of employees working in the neighborhood indicating that grocery stores are the business they'd like most to see more of in the community. The resident survey revealed that Ranch Market is used frequently, but residents also travel to Walmart located over four miles away to grocery shop to obtain "lower prices and better quality." The RLC and resident interviews shared concerns about pricing and the quality of food, particularly the meat and produce section at Ranch Market. No one interviewed shopped at Baiz Market. Resident interviews revealed that, when possible, residents chose to grocery shop at the Walmart on 38th Street and Thomas Road or the Fry's at 30th Street and Thomas Road. Convenience stores are also frequented by residents, likely due to proximity to residents, where the food options tend to be limited and less healthy.

TABLE 8 **FOOD RETAIL OUTLETS FREQUENTED BY RESIDENTS**

FOOD RETAIL OUTLET	OFTEN	SOMETIMES	NEVER
Ranch	58%	37%	6%
Dollar Stores	48%	41%	11%
Walmart	41%	48%	10%
Fry's or other grocery store	37%	45%	18%
Convenience Stores	36%	40%	24%
Church	13%	33%	54%
Food Pantries	12%	35%	53%
Costco/Sam's Club	9%	29%	62%

Source: Resident Survey

According to the resident survey, 84% received SNAP benefits and many were concerned about running out of food. Over half of the survey respondents indicated that they were often or sometimes worried that they would run out of food and that they would not have money to buy food when it ran out. Research shows that SNAP participants juggle multiple priorities when food shopping. SNAP participants value nutrition and taste as much as other consumers, but their time and money constraints complicate the task of making healthy food choices. Compared to higher income shoppers, SNAP participants place more importance on price and convenience. This is not surprising given budget constraints trying to meet rent, utilities, transportation, etc. Compared to higher income shoppers, SNAP shoppers are less likely to shop weekly and more likely to shop once a month or less. This may be related to the monthly distribution of SNAP benefits or to having a more difficult time getting to the grocery store — 14 % of SNAP respondents reported that it took them more than 30 minutes to get to a grocery store, whereas eight percent of higher income shoppers needed that much travel time (Mancino & Guthrie, 2014).



## Other Food Options

There is one mobile vendor, Fresh Express, that brings fresh fruits and vegetables to the public housing sites. Fresh Express serves Sidney P. Osborn residents every other Tuesday from 9am to 10am and as of August 2017 serves Frank Luke and A.L. Krohn residents every other Tuesday from 1pm to 2pm. Fresh Express accepts SNAP and offers Double Up Food Bucks Arizona. Double Up Food Bucks AZ is a fruit and vegetable incentive program operated by Pinnacle Prevention and modeled from the Fair Food Network Double Up Food Bucks Program. The goal of is to make purchasing locally grown fruits and vegetables more affordable for those most in need. For every SNAP dollar spent at a Double Up Food Bucks site, like Fresh Express, participants receive a dollar for dollar match, up to \$20 additional dollars per day to buy locally grown fruits and vegetables. Research shows that when Double Up is in place, SNAP recipients shop more often and eat more produce (Fair Food Network, 2016).

There are two community garden locations in the EEC. One is located on Aeroterra property and requires a key card to access it. The other is on Sidney P. Osborn where there is a small plot dedicated for residents to garden that was installed in 2012 with the Let's Grow Phoenix Gardens Program. Today, it is not well used by residents. Resident interviews and the RLC identified a few barriers to the garden. The location of the garden made it hard to keep eyes on the space, and residents report that it was frequently vandalized possibly by the youth living in Sidney P. Osborn. One resident continues to maintain a raised bed, and there are a few fruit trees still growing. The RLC and community members attending community workshops expressed interest in community gardens to grow their own food. Sixty percent of residents indicated that community gardens are very important improvement they would like in the neighborhood and an additional 30% thought they are somewhat important.

## Evaluating Health Impact

Although this community is not identified as limited supermarket access area, there are clear challenges to accessing healthy and affordable food to support a healthy diet. With the community's high reliance on public transportation, walking and getting rides from others and getting to and from the grocery store is

When consumers shop less frequently, choosing foods that store well make a difference. These types of foods tend to have less nutritional value, leading to less healthy eating.

All food stores accept SNAP, but only Ranch Market accepts the Supplemental Assistance for Women, Infant and Children vouchers (WIC). From the standpoint of making healthy food affordable, WIC plays an important role. It provides food assistance to low-income pregnant or breastfeeding women or families with young children to purchase healthy food, such as milk and fresh fruits and vegetables. WIC has been shown to provide better health outcomes for infants, young children and their mothers, as well as improving the food environments in low-income neighborhoods (Carlson, 2017). With a higher proportion of young children ages zero to five living in EEC, WIC is an important resource for residents.

### PARTNER SPOTLIGHT: FRESH EXPRESS

Fresh Express by Discovery Triangle is a mobile produce market that provides access to high-quality, affordable produce to residents with little to no access to healthy food. We proudly serve individuals, families, school-age children, senior citizens, educators and many others in the Phoenix and Tempe regions. Our mission is to enhance the health of Valley residents by increasing access, availability, and affordability of fresh produce and providing health and wellness resources to empower community members to make healthy choices.

challenging for most residents. Most residents reported a preference for food shopping outside of the community at grocery stores that had better pricing and quality, from their perspective. In between grocery trips, residents are reliant on nearby food outlets, predominantly convenience stores with less healthy options. Improving the availability and affordability of healthy food, like fruits and vegetables, in the community's existing food outlets will support residents adopting a healthy diet and improving health outcomes.

During community workshops, interviews and surveys, residents in the community share an interest in urban agriculture. There are residents from cultures that value farming living in the public housing sites. However, spaces to garden, farm, or host a farmers market are limited to nonexistent in the community. Creating shared spaces to maintain and grow food will not only help increase the availability of fresh fruits and vegetables, but also provide opportunities to be physically active and connect with others living in the community (Centers for Disease Control and Prevention, 2010). Thus, urban agriculture has the potential to improve resident's physical and mental health.

Additionally, affordability of food is a concern for most residents due to limited incomes. Nutrition assistance programs, like SNAP and WIC, can help reduce the food price point for residents. Double Up Food Bucks Arizona can help reduce the cost of locally grown fruits and vegetables sold at farmers markets. Bringing in these programs and offering programming as requested by residents can help stretch food budgets and decrease food insecurity in the community. Improving the food environment and nutrition resources in the community can support healthy learners, healthy workers and a healthy community.

**Creating shared spaces to maintain and grow food will not only help increase the availability of fresh fruits and vegetables, but also provide opportunities to be physically active and connect with others living in the community.**

## Recommendations

The goal of these recommendations is to improve access to healthy and affordable food in the neighborhood. There are recommendations for policy adoption, infrastructure development and programming support. For best results, policy, infrastructure and programming recommendations should be adopted to maximize the health impact.

### Policy

- **Promote Urban Agriculture through zoning. Urban Agriculture includes community gardens, urban farms, farmers markets, community supported agriculture, and mobile produce vendors.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

Identify dedicated space for farmers markets and community gardens to operate in the neighborhood, possibly at parks, on housing site or on school grounds. Activate vacant lots for urban agriculture purposes. Partner with community based organizations, such as International Rescue Committee or TigerMountain Foundation, to empower residents in establishing and maintaining a community garden. This community is located in the Salt River Project Water District which may be able to offer low cost water solutions.

**Rationale:** Zoning allows or prohibits different types of land use. Including urban agriculture as a land use option will increase access healthy affordable foods for residents. It will also create opportunities for engagement and leadership in the community.

Removing barriers and costs to operate farmers markets in low-income and low food access communities will bring more fresh fruits and vegetables to those who are in most need.

- **Encourage the development of a Farmers Market by adopting supportive policies and practices.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

Streamline the vendor process and agreements to operate and manage a farmers market on public city space. This would include offering an open and rolling solicitation for individuals proposing to operate and manage a farmers market. Additionally, fees should be waived to operate in public city space, particularly in low food access designated communities or low-income census tract. Remove vendor maximum and allowable space requirements to allow markets to best meet community needs and remove requirements for the approval of City of Phoenix for any media or promotions of markets. Lastly, encourage community non-profits to participate in markets by removing non-vendor stipulations.

To reduce the price point of food sold at farmers markets, adopt a policy that requires all farmers markets to accept EBT or other nutrition assistance benefits, like WIC Farmers Market Coupons and Double Up Food Bucks AZ, as appropriate.

**Rationale:** Removing barriers and costs to operate farmers markets in low-income and low food access communities will bring more fresh fruits and vegetables to those who are in most need. Requiring markets to use tools to reduce the cost of food to low-income residents will help make healthy food more affordable.

## Infrastructure

- **Create a small business development initiative, Healthy Corner Store Initiative, to improve access to healthy and affordable food.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

Partner with residents, Local First Arizona and Maricopa County Department of Public Health to develop a Healthy Corner Store Assistance initiative to improve the existing corner store marketing, availability and quality of healthy food. With the RLC form a small resident committee to work with the grocery and corner store operator to receive complaints, monitor responses and make suggestions. When possible empower vendors to become WIC certified vendors.

**Rationale:** Making intentional efforts to decrease the time and travel costs of food shopping and increase the feasibility of shopping more frequently to alleviate concerns about how well food keeps and encourage SNAP shoppers to purchase increased amounts of healthy perishables, such as fresh fruits and vegetables. WIC requires certain healthy foods always be stocked in WIC approved stores. This helps improve the healthy food offerings in small stores.

- **Determine the market potential for an additional full-scale grocery store as a long-term strategy to create a community of choice.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

**Rationale:** While this is a long-term recommendation, the expansion of this supermarket to the area is particularly important given the residential units being proposed in the area. This will increase the number of people living in the area who will need access to healthy and affordable food.

## Program

- **Work with community-based organizations to develop a community garden association lead by residents, including youth.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

**Rationale:** To maximize the use and sustainability of a community garden, it is important for residents to learn to operate and manage the space. This is a leadership opportunity for both residents and youth living in the neighborhood which will lead to community buy-in and less vandalism. A community-based organization to help support residents and youth to formalize and develop a community garden association is critical for its success. Master gardener classes, offered through the University of Arizona Cooperative Extension, can help train a core group of residents and youth on how to plant, grow and maintain the garden.

- **Partner with residents to determine specific food preparation, food storage, and other nutrition education classes to offer at each housing site. Allow residents to lead classes when appropriate and bring partner organizations onsite to offer free classes to all residents.**

**Rationale:** Learning how to store, prepare and how to get and use food benefit programs such as SNAP, WIC and

Double Up Food Bucks Arizona to help make ends meet may result in increase in healthy food purchasing. Residents should be involved in identifying the type of programs that will meet their needs and be able to facilitate classes when appropriate. A potential partner organization is the Arizona Health Zone, operated by the Arizona Department of Health Services and its contractors. This program provides free nutrition education and support to SNAP-eligible adults and children.

- **Work with the local Walmart (36th Street & Thomas Road), Fry's (30th Street & Thomas Road) and Ranch Market (16th Street & Roosevelt Street) to introduce free shuttle buses for residents of EEC.**

**Rationale:** Residents are limited in accessing supermarkets due to distance and lack of car ownership. This shuttle service can be modeled on free shuttle services offered in underserved communities by local Walmarts in Michigan or the shuttle service study by University California Davis (Cassady & Mohan, 2004). Shuttle services may remove transportation barriers that prevent residents from shopping at locations that offer healthy food options. This is a short-term solution to offer while efforts are being made to develop and support a healthier community food environment.

### COMMUNITY SUCCESS SPOTLIGHT: GARFIELD'S GARDEN ON THE CORNER

Garfield's Garden on the Corner is a healthy hub within the city of Phoenix, Arizona. Located on the Garfield Elementary School campus, Garfield's Garden on the Corner integrates edible education across core middle school subjects during the school day and opens to the community after school hours. Students learn essential life skills through highly engaging project-based activities. Learning is brought to life in the garden through hands-on scientific investigations such as growing, tending, and harvesting seasonal produce while deepening students understanding of the world around them. In the kitchen, relevant and animated historic tales are told while consistent peer-to-peer engagement is experienced through shared meals. Through the garden and kitchen lessons, Garfield's Garden on the Corner empowers students to develop a healthy connection to food, themselves, and others.

Garfield's Garden on the Corner is open to Garfield Elementary School students, surrounding schools, parents, and neighborhood residents after school hours. Community activities such as tending the garden, harvesting produce, sharing a meal, listening to a story, practicing yoga, painting a mural, and celebrating special occasions empower the Garfield neighborhood with essential and culturally appropriate skills of self-sufficiency to transform their current behaviors to healthier, life-long habits. Community days aim to remove barriers of access and affordability to fresh, nutrient-dense food. By teaching practical life skills and encouraging others to do the same, Garfield's Garden on the Corner promotes mentorship and a true sense of collaboration.

Directed by the Mollen Foundation in partnership with Phoenix Elementary District, this shared use space includes gardens and fruit trees, a learning kitchen, regional and nutrition integrated food education, fitness activities, volunteer opportunities, art murals and special events always coupled with an appreciation for good food.

# ENVIRONMENTAL QUALITY

## Why it Matters

Where we live matters to our health in part due to the physical environment. The air we breathe, the water we drink, and the land and buildings around us impact and influence our ability to live a healthy life (Centers for Disease Control and Prevention, 2017).

## Urban Heat Island

Extreme heat is considered a public health threat and while it can impact anyone, specific groups are more vulnerable to heat than others. Older adults, infants and children, low-income communities, people with chronic disease, and people working or being active outdoors for work or sports are more likely to be impacted by extreme heat than other groups (Centers for Disease Control and Prevention, 2017).

In more populated urban environments, where natural environments are replaced with roads and buildings, heat islands — or areas that are hotter than nearby rural areas — form (Environmental Protection Agency, 2008). The surfaces of buildings and pavements that replace natural vegetation absorb solar radiation and become extremely hot, which in turn warm the surrounding air. Cities that have been “paved over” do not receive the benefit of the natural cooling effect of vegetation (Akbari, 2005). On a hot, sunny summer day, the sun can heat dry, exposed urban surfaces, like roofs and pavement, to temperatures 50 to 90°F (27 to 50°C) hotter than the air, while shaded or moist surfaces remain close to air temperatures (Environmental Protection Agency, 2008). Heat islands can increase energy demand particularly during summertime peaks increasing air conditioning costs, contributing to poor air quality and greenhouse gas emissions, water quality and heat-related illness and mortality.

**The air we breathe, the water we drink, and the land and buildings around us impact and influence our ability to live a healthy life.**

## Outdoor Air Quality

Outdoor air quality contributes to respiratory and cardiovascular health. Asthma and other respiratory diseases, such as chronic obstructive pulmonary disease, are affected by outdoor air pollutants. Air pollutants can contribute to the development of childhood asthma and other respiratory symptoms, such as difficulty breathing and asthma attacks (Centers for Disease Control and Prevention, 2014). Research shows that air pollution can trigger heart attacks, stroke, and irregular heart rhythms — especially in people who are already at risk for these conditions. This includes men over the age of 45, women over the age of 55, anyone with family history of heart disease, anyone overweight or not physically active and all cigarette smokers (Environmental Protection Agency, 2016).

The EPA identifies two key outdoor air pollutants, ozone and particulate matter, that can affect asthma. Ozone, found in smog, tends to be worse on hot days in the afternoon and evening. Particulate matter found in haze, dust and smoke can be bad any time of year, but particularly on calm weather days. Small particulate matter is also the key pollutant that is the greatest concern for cardiovascular health (Environmental Protection Agency, 2017). Traffic is also a major source of both pollutants, as well as other known health hazards such as carbon monoxide and nitrogen oxides. Exposure to traffic-related pollution is linked to asthma and other respiratory symptoms, development of childhood asthma, cardiovascular disease and death (National Heart, Lung, and Blood Institute, 2007).

## Vacant Lots

Vacant lots, unoccupied housing and substandard housing are correlated with lower pre-kindergarten literacy, stunted physical development in children, poor mental health status, loss of social networks, less healthy behavior like exercise habits, and more chronic disease. It contributes to the feelings of being unsafe in a neighborhood, real and perceived, which also contributes to disinvestment in neighborhoods. Furthermore, some researchers attribute the breakdown in social capital to vacant lots and abandoned buildings. This results in a less organized and engaged community that is willing to step in to help each other or prevent crime. Vacant lots are also associated with increased community stress that negatively impacts health (De Leon & Schilling, 2017).

## Water Quality

Water quality is critical for public health. Poor water quality can lead to disease outbreak and adverse health effects, including gastrointestinal illness, reproductive problems and neurological disorders. Infants, young children, pregnant women, the elderly and people whose immune systems are compromised because of AIDS, chemotherapy or transplant medications, may be especially susceptible to illness from some contaminants (Centers for Disease Control and Prevention, 2017).

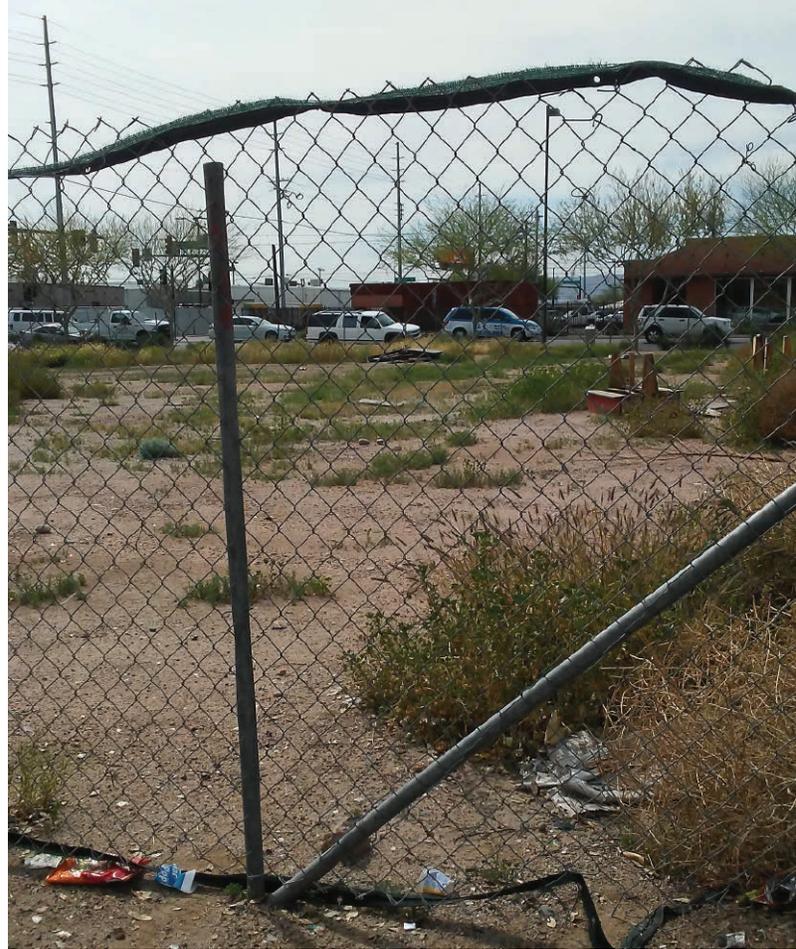
## Methodology

### Urban Heat Island

Heat experts at Arizona State University provided three data sources to assess the urban heat island impact in the EEC:

- **Air temperature records:** Maricopa County Air Quality Department (MCAQD) maintains an air quality monitoring site, Central Phoenix station, within the community boundaries that also records meteorological data. Standard meteorological temperatures are available dating back to 2006. We used a ten-year monthly average temperature to compare with other nearby MCAQD monitors in the area to assess heat.
- **Surface temperature data:** Satellite images at the scale of 100-meters and finer are available from NASA spanning 30 years of observations. Arizona State University collected approximately 100 recent images at 100-meter scale from which comparison of surface temperature across the community can be made.
- **Vegetation data:** The satellite images from NASA can also be used to calculate an index of greenness called Normalized Difference Vegetation Index (NDVI). This quantifies vegetation by measuring the difference between near-infrared (which vegetation strongly reflects) and red light (which vegetation absorbs). Arizona State University provided maps of the NDVI for the neighborhood and nearby communities for analysis.

We also reviewed the Reinvent PHX HIA that addressed urban heat island in the area.



## Outdoor Air Quality

MCAQD maintains an air quality monitoring station in the EEC. Particulate Matter 10 (PM 10) is monitored at this station but not Particulate Matter 2.5. Using PM 10 measurements, we examined the number of days the EPA's Air Quality Index (AQI) would have designated the air days as "moderate," "unhealthy for sensitive groups" and "unhealthy" over a three-year time between 2013-2015. The EPA's AQI was designed to help people understand how local air can impact health. The AQI is divided into six categories from good to hazardous and the thresholds for each category differ based on the pollutant. For PM 10, an AQI of 100 or "unhealthy for sensitive groups" is equivalent to 150 micrograms per cubic meter (Environmental Protection Agency, 2014). A literature review was used to assess traffic-related air pollution.

## Water Quality

To assess the impact of the Motorola Street Superfund (M52) Site, an environmental expert reviewed the Environmental reports, the Community Information Group Webinar Meeting by the U.S. Environmental Protection Agency (EPA) on October 26, 2016 and the Environmental Phase 1 reports completed by the City of Phoenix recently.

## Vacant Lots

City of Phoenix provided data and maps on vacant lots and land ownership for our analysis. Resident feedback and literature were used to assess the health impact of vacant lots.

## Assessment

### Urban Heat Island

In Phoenix where ambient temperature can be as high as 120°F with a relative humidity of less than 20%, the excess of hardscape exacerbates the urban heat island effect. The nighttime temperature can stay above 90°F (Balling & Brazel, 1987). Central Phoenix Station records the hottest average monthly temperature for all months except August when it becomes the second hottest station. Temperatures at Central Phoenix range from about 2°F higher than the regional average during the peak of the summer to more than 3.5°F higher than the regional average in the winter months. See Table 9 for more information.

TABLE 9 10-YEAR MONTHLY AVERAGE FOR SELECT MARICOPA COUNTY AIR QUALITY MONITORING STATIONS (2006-2015)

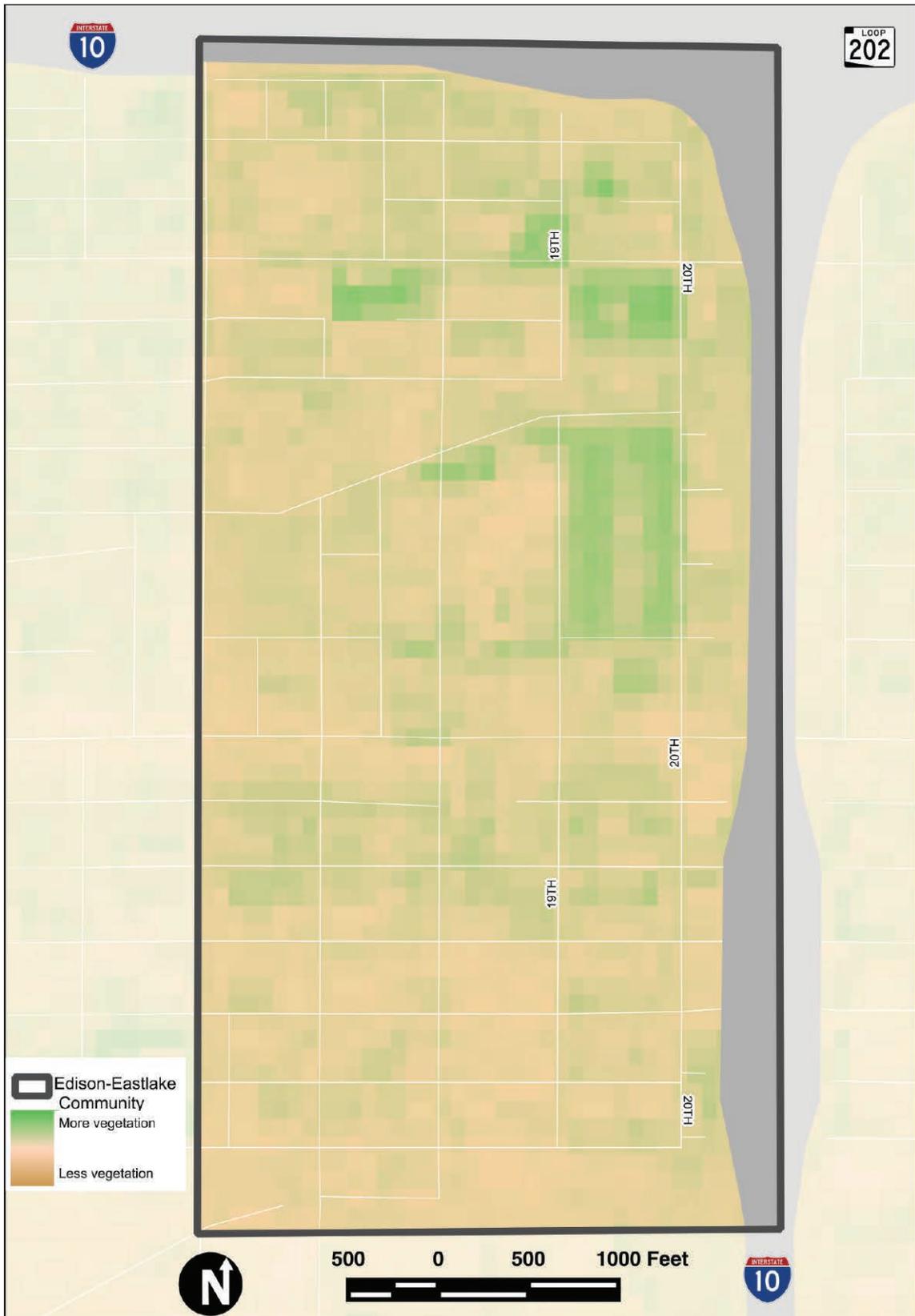
MCAQD STATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC
West 43rd Ave	53.49	57.63	66.13	73.00	82.01	92.72	95.71	94.22	88.14	75.42	62.35	52.16
West Phoenix	53.81	57.75	65.53	72.54	81.47	92.12	95.00	93.93	88.03	75.12	62.82	52.40
North Phoenix	54.13	57.49	65.01	71.70	80.51	91.04	94.10	92.93	87.37	74.79	62.93	52.29
Dysart	54.38	57.56	64.95	71.75	80.54	91.05	94.22	93.09	87.36	75.07	63.09	52.60
South Phoenix	54.95	59.02	66.73	73.58	82.83	93.02	95.70	94.54	88.64	75.87	63.53	53.20
Durango Complex	55.42	59.48	67.27	74.11	82.86	93.38	96.01	95.15	89.34	76.66	64.60	53.84
<b>Central Phoenix</b>	<b>57.96</b>	<b>61.01</b>	<b>67.85</b>	<b>74.98</b>	<b>83.33</b>	<b>93.67</b>	<b>96.06</b>	<b>95.10</b>	<b>89.55</b>	<b>77.66</b>	<b>65.85</b>	<b>56.03</b>

Source: Maricopa County Air Quality Monitoring Stations

Reinvent PHX did a temperature analysis on February 15, 2013 in five locations. Three sites have little or no shade: 20th Street between Roosevelt and Van Buren Streets, and Roosevelt Street between 16th and 18th Streets. The remaining two sites were at Edison Park, one under a tree and the other in an unshaded area of a grassy sports field. At the hottest times of the day, the shade at Edison Park reduced temperatures by as much as 28°F when compared to unshaded sidewalks along busy streets. Even the unshaded grass at Edison Park was enough to reduce temperatures by as much as 10°F, creating a cooler environment for pedestrians and cyclists. Almost 25% of the total land acreage (74 acres) are used as paved surface parking lots, mostly attached to a business, government office, or other institutions. Research shows that paved surfaces can be a strong contributor to pavement warming and this warming has the potential to impact the urban heat island effect in those built environments that experience hot weather and are large enough to generate a heat island (U.S. Department of Transportation, 2017).

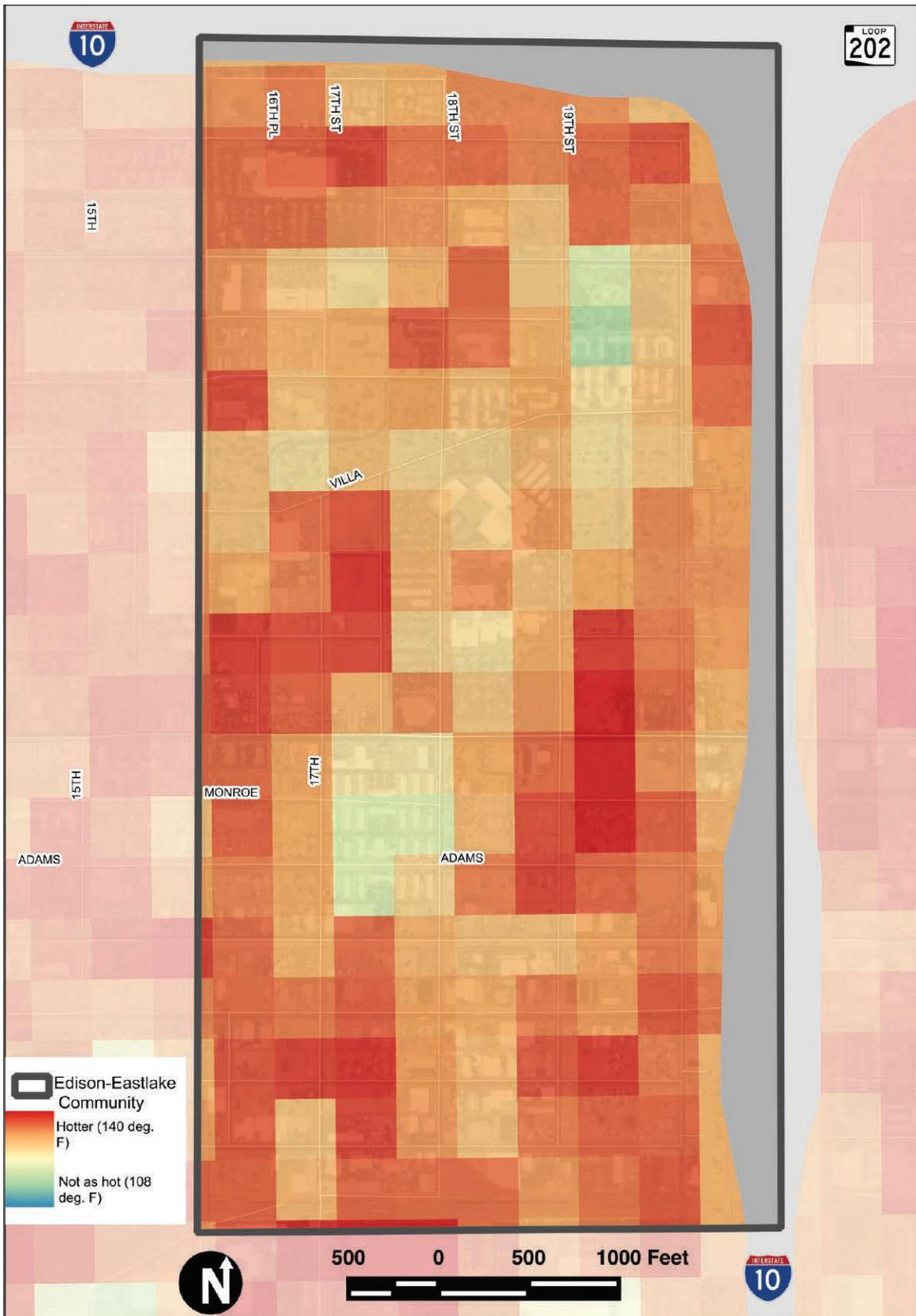
Looking at vegetation and surface temperature maps, the area around Sidney P. Osborn neighborhood has higher surface temperatures and less vegetation which can contribute to greater heat island impact. Hotter areas can also be found around Van Buren and 19th Streets, along Madison Street and 17th Street adjacent to St. Luke's Medical Center where there is a large vacant lot. The coolest area in the neighborhood is at Edison Park that has irrigated grass and shade trees.

FIGURE 11 **VEGETATION INDEX**



Map Source Elements: Esri World Imagery, NASA Modis NVDI / ASU

FIGURE 12 SURFACE TEMPERATURE



Map Source Elements: Esri World Imagery, NASA GISS / ASU

## Outdoor Air Quality

Based on 2013 through 2015 PM 10 data, the EPA’s Air Quality Index would have designated 38 days as “moderate,” three days as “unhealthy for sensitive groups” and one day as “unhealthy.” Compared to other areas throughout Maricopa County, the EEC neighborhood is in the middle when it comes to PM 10 levels. Areas closer to the edge of the urban area where there are more dust sources or at low elevations tend to have higher PM 10 levels.

**TABLE 10 2013-2015 MARICOPA COUNTY AIR QUALITY DEPARTMENT PM 10 DATA AT SELECT PHOENIX STATIONS**

	CENTRAL PHOENIX	WEST PHOENIX	NORTH PHOENIX	SOUTH PHOENIX
Number of observations	1089.0	1092.0	1093.0	1093.0
Maximum concentration	329.2	255.6	200.3	294.6
Minimum concentration	4.0	3.7	2.3	4.5
Mean concentration	31.0	33.6	25.0	35.9
# of days with AQI 51-100 (55-154 ug/m3)	38	97	27	110
# of days with AQI 101-150 (155-254 ug/m3)	3	4	1	5
# of days with AQI 151-200 (255-354 ug/m3)	1	1	0	2

Source: Maricopa County Air Quality Monitoring Stations

The northern and western boundary of the EEC is the I-10 freeway, the main freeway used to get in and out of Phoenix. Additionally, Van Buren Street is a major roadway that also sees heavy commuting during the morning and evening rush hour. With traffic a major contributor to hazardous air pollution, this is concerning for residents in the EEC. One study estimated that 8% of childhood asthma cases in Los Angeles County, California could be partly attributed to living close to a major road (Perez L, 2012). Living near a major road also has been associated with decreased lung function in adults with asthma (Balme JR, 2009). Increasing the distance from the road to more than 150 meters, or approximately 500 feet, might decrease concentrations of some air pollutants by at least 50% (Karner AA, 2010).



## PARTNER SPOTLIGHT: NATURE'S COOLING SYSTEMS PROJECT

The Nature Conservancy's Nature's Cooling Systems Project is funded by Vitalyst Health Foundation and is intended to address heat at the landscape and neighborhood level. Project partners include Maricopa County Department of Public Health, ASU's Urban Resilience to Extremes Sustainability Research Network and the Central Arizona Conservation Alliance. The project approach involves integrating heat mitigation into key tools and plans for use by County planners as well as developing Heat Action Plans (HAP) in three neighborhoods. Neighborhoods were selected based on a variety of criteria to select some of the hottest and least vegetated areas where health is regularly affected by heat. HAPs involve co-designing "cool and resilient" futures with residents, modeling outcomes on thermal comfort and proposing that the HAPs are adopted into redevelopment plans, Village Plans and other City plans for heat mitigation. One of the selected neighborhoods is the Edison-Eastlake neighborhood, where the redevelopment process provides an ideal opportunity to optimize shade, wind paths, cool islands with trees and vegetation, storm water and surface and building materials for a more comfortable and livable community.

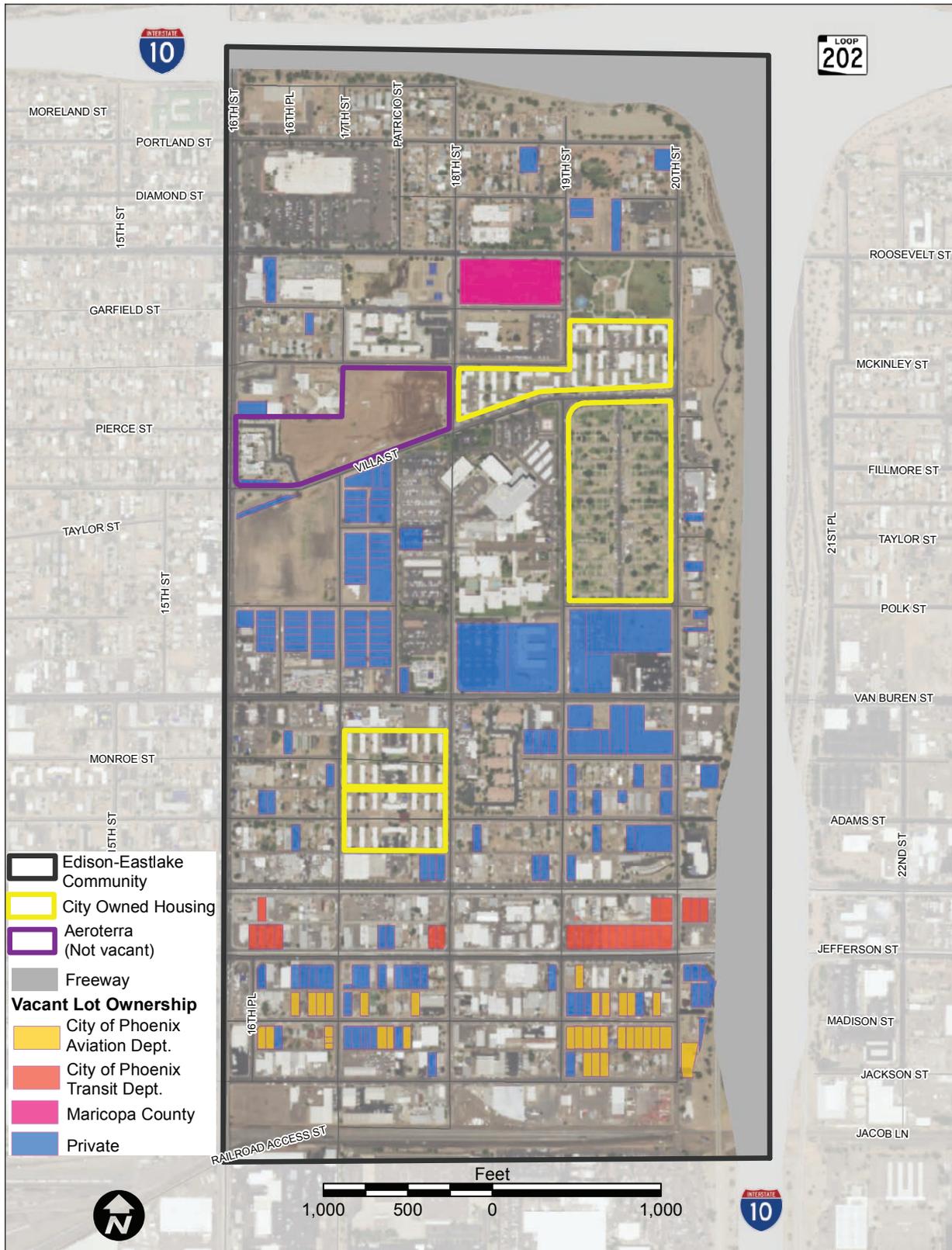
The Nature's Cooling Systems Project intends to provide examples of variation in cooling approaches at the neighborhood scale that should be considered in city- or county-wide resilience plans. Therefore, the project strategically coincides with The Cooler Phoenix project, a cooperative effort between the City of Phoenix and researchers at Arizona State University to provide a suite of evidence based solutions for the urban heat island effect and extreme heat events. A Heat Readiness Toolkit is being developed with the overarching goal of making Phoenix cooler and more comfortable for its residents and visitors. This work will culminate in a "Cooling Plan" that defines specific goals related to heat and its impact on health, well-being and productivity for the city, residents, businesses, institutions and visitors.

## Vacant Lots

Currently, approximately 21% of the total land area in the EEC is vacant and encompasses 265 parcels. A portion of this vacancy can be attributed to the overall loss of housing units, due in part to the demolition of homes located in the Phoenix Sky Harbor International Airport flight path in the southern portion of the neighborhood. The City of Phoenix Aviation Department is in the process of developing a plan with community partners and Federal Aviation Authority to activate the vacant lots in this neighborhood. Additionally, there is a large concentration of large vacant parcels surrounding St. Luke's Medical Center that have been held in anticipation of possible expansion of the medical center and/or development of additional medical facilities. Of the vacant lots, 74% are owned by private landowners, 8% by the City of Phoenix Aviation Department, 6% by the City of Phoenix Transit Department, 6% by the Arizona Department of Transportation and 5% by Maricopa County.



FIGURE 13 VACANT LOTS



Map Elements Sources: Maricopa County (2017), City of Phoenix (2017). Basemap sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## Water Quality

There is a known, federally managed superfund site (Motorola 52nd Street) that impacts a portion of EEC. This is a large area of contaminated groundwater extending from the former Motorola facility and other sources. Because of the size of the site, it has been divided into three areas called Operable Units (OUs) to better manage the cleanup efforts. The EEC is in the OU3 boundary.

**There is a known, federally managed superfund site (Motorola 52nd Street) that impacts a portion of EEC.**

According to information provided during the Community Information Group Webinar Meeting by the EPA on October 26, 2016, contaminated groundwater in this area is deeper than in other areas of the site. The EPA is responsible for ongoing testing to evaluate any possible vapor intrusion. Vapor intrusion occurs when there is a migration of chemical vapors from the contaminated groundwater through the soil and into buildings or homes in area (Environmental Protection Agency, 2017). The EPA stated that data collected to date indicates that vapor intrusion related to the superfund site has not been detected in OU3.

## Evaluating Health Impacts

EEC is home to many residents that are vulnerable to the physical environment they live in, and therefore, an opportunity to create a healthy neighborhood by improving the environmental quality of the community.

The redevelopment has a strong opportunity to mitigate the urban heat island effect in the community, creating a more comfortable environment for residents. Addressing the urban heat island, through housing designs, vegetation and land use could also help address air quality and vacant lot challenges in the neighborhood.

Given the hospital utilization for respiratory conditions in the community, particularly among children, improving exposure to outdoor air quality can greatly impact the health of the community. The assessment suggests proximity to high traffic volume roadways, like the freeway and Van Buren are large contributors to air pollution. The planned repurposing of Van Buren to reduce traffic lanes and traffic volume on the road will contribute positively to those living near the roadway. In addition, the redevelopment of the housing sites can locate residents most vulnerable to air pollution, such as children and seniors, further away from high traffic volume roadways. This could reduce the development of respiratory and cardiac conditions as well as reduce hospitalizations due to respiratory and cardiac events triggered by air pollution.

**The assessment suggests proximity to high traffic volume roadways, like the freeway and Van Buren are large contributors to air pollution.**

In the Phoenix area, drinking water is provided primarily through surface water (95%) and limited groundwater (5%) (City of Phoenix, 2017). (City of Phoenix, 2017) The Motorola 52nd Street Superfund site does not appear to be a health threat to the drinking water in the community. Given the absence of data to clearly indicate a vapor intrusion, it is unclear if there is an impact on health. Therefore, there are no recommendations in regards to water quality or the superfund contamination at this time. However, it should be noted that there is an American Standards for Testing and Materials (ASTM) vapor encroachment standard (E2600-10 Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions) that is potentially applicable and useful if consulted prior to new construction or property redevelopment. This approach is believed to be consistent with City of Phoenix Phase I Environmental Site Assessment reports completed for properties in the EEC and will provide additional health protection for residents living in the community.

The redevelopment will potentially provide opportunity to activate vacant lots in the community. The City of Phoenix Aviation Department is looking for non-residential uses for the vacant property owned by the department. Greening and beautifying the vacant properties in the community could potentially improve mental health and stress in the community. Depending on how the lot is activated, green infrastructure could also improve the urban heat island effect and potentially address air quality as well.

## Recommendations

The following recommendations are prioritized to address all areas of Environmental Quality. However, the top environmental challenge the recommendation seeks to address is named before each recommendation. There are recommendations for policy adoption, infrastructure development and programming support. For best results, policy, infrastructure and programming recommendations should be adopted to maximize the health impact.

### Policy

- **Urban Heat Island: Comply with the standards established in the Interim Transit Oriented Overlay Districts specifically as it relates to shade.**

The standard states that a minimum of 75% of the sidewalk should be shaded. Prioritize shading along Van Buren and 16th Streets where residents access public transportation routes.

**Rationale:** Increased shading, through trees or shade structures, can provide cooling effects to residents moving through the community.

- **Urban Heat Island: Adopt heat mitigation policies and strategies in the redevelopment of the urban form, including prioritizing the use of surfaces and building materials that provide cooling effects. Placement and orientation of buildings should also maximize cooling.**

**Rationale:** A variety of factors, including urban form, surface cover, heat release and climatic conditions interact to create the urban heat island effect. Work with Nature's Cooling Project to identify comprehensive strategies to best address the urban heat island effect in this neighborhood. While all strategies may not be immediately feasible during redevelopment or at the neighborhood scale, barriers to implementing comprehensive strategies should be identified and communicated to local and regional government, decision makers and to those most affected by increasing urban heat.

A variety of factors, including urban form, surface cover, heat release and climatic conditions interact to create the urban heat island effect.

### Infrastructure

- **Urban Heat Island and Air Quality: Increase greening and improve landscaping by adding trees, sod and other vegetation throughout the community to help improve the air quality and mitigate the urban heat island effect.**

Plants having low water use and low volatile organic compound (VOC) emissions should be selected. Consult with the Nature's Cooling Project and residents to identify the best placement and types of vegetation to use.

**Rationale:** It is critical to select the right vegetation to maximize shade coverage, allow heat to rise and use minimum water. Native low water-use trees with broad and dense canopies are one possibility, but trees should be selected only after consultation with heat mitigation experts working on the Natures Cooling Project. Some plants naturally emit VOCs which can contribute to poor air quality.

Trees should be selected only after consultation with heat mitigation experts.

- **Air Quality: Install high efficiency HVAC systems in housing units and community buildings. Advanced air filtration should be installed through air handling units for all sites.**

**Rationale:** HVAC systems provide effective indoor cooling during hot summer months. HVAC systems provide better filtration of air pollutants than current evaporative coolers. Properly ventilated units will reduce constant exposure to traffic-related air pollution and poor air quality.

- **Vacant Lots: With resident leadership, activate vacant lots for community benefits. This may include, but not limited to, urban agriculture, pop-up parks, green spaces, and art spaces.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

Complete Phase I Environmental Site Assessment on vacant lot prior to use. At a minimum, test soil for lead and arsenic, as these two contaminants are most often seen in our urban environment.

**Rationale:** Creating spaces on vacant lots for the public to use can address the negative health impact of blight. Residents expressed interest in murals, community gardens and safe places for children to play. Given the superfund site location and other potential environmental hazards, environmental assessments should be completed prior to determining best use for the vacant lot.



## Program

- **Urban Heat Island: Continue and expand programming for residents to enhance heat coping mechanisms and learn about heat-related illness. Empower residents to share their stories of coping with heat and their visions for improving the conditions.**

**Rationale:** Given the urban heat island impact in the community and the vulnerable population, it is important for residents to be aware of heat-related illness and how to stay healthy during the hot summer months. Providing residents opportunity to discuss and manage the heat in the community will increase the resilience of individuals and the community to stay healthy.

- **Urban Heat Island and Air Quality: Provide education to residents on how to best use new energy efficient appliances and HVAC systems.**

**Rationale:** In previous housing redevelopments, residents were used to keeping windows and doors open with evaporative cooling systems. This resulted in increased electric cost from increased demand on the new air conditioning units. Educating residents on how to best operate new appliances and systems will help residents keep energy costs low, reducing HVAC contribution to heat island impact and air pollutants.

- **Urban Heat Island and Vacant Lot: Support resident leadership throughout strategies used to address environmental quality. To support green infrastructure, allow residents with landscaping experience opportunity to provide maintenance of common spaces in exchange for housing stipend or community service hours. Support resident leadership to establish community clean-up and other neighborhood beautification efforts. Provide programming support for any activation of vacant lots.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

**Rationale:** Residents expressed interest in providing leadership, technical expertise and actual management of landscaping within the community. Using existing skills in exchange or community hours can be beneficial to both the residents and the property management. Providing opportunity for residents to lead efforts can create community ownership and decrease vandalism. It can promote community wellbeing through greening and reduction in blight. This can result in decreased cost of management of the grounds in the community.

Educating residents on how to best operate new appliances and systems will help residents keep energy costs low, reducing HVAC contribution to heat island impact and air pollutants.

# SAFE, ACTIVE NEIGHBORHOODS

## Why it Matters

**The Centers for Disease Control and Prevention recommendations for physical activity for adults is 150 minutes of moderate-intensity physical activity a week and for children and adolescents 60 minutes each day.**

Regular physical activity is important to both physical and mental health. It can help control weight, and reduce risk of chronic conditions such as cardiovascular disease, diabetes, and some cancers. It strengthens bones and muscles which prevents falls particularly in older adults. Regular physical activity reduces the risk of depression, help sleep and keep learning, thinking and judgment skills sharp (Centers for Disease Control and Prevention, 2015). The Centers for Disease Control and Prevention recommendations for physical activity for adults is 150 minutes of moderate-intensity physical activity a week and for children and adolescents 60 minutes each day.

Environments that make it easier for people to walk or bike helps increase physical activity as well as making neighborhoods better places to live. Some of the infrastructure include the presence and quality of sidewalks, pedestrian crossings, buffers to moving traffic, traffic volume and speed, shade and street furniture (Centers for Disease Control and Prevention, 2011).

## Methodology

### Street Audits

In addition to previous methodology discussed, new data was collected to describe the pedestrian experience of the streets in the community. To assess the quality and safety of the street infrastructure, 11 residents conducted walking audits. Using a tool developed by Vitalyst Health Foundation (Attachment C), they focused on primary walking routes either to school, food stores or bus stops. All major arterial streets (Roosevelt, Van Buren, Washington, Jefferson, 20th and 16th Streets) and several internal streets were audited. Street audit findings were compared to Reinvent PHX recommendations to measure any change over time.

### Existing Conditions

On the positive side 84% of adults surveyed reported participating in 20 minutes of moderately vigorous activities during the week.

Residents living in the EEC rely on walking and public transportation to move in and out of the community. Walking is the number one mode of transportation identified by residents, with 86% residents surveyed reporting they often or sometimes walk to get to places. School-age children in A.L. Krohn and Frank Luke walk to nearby Edison School, while children in Sidney P. Osborn take buses to various elementary schools. Adolescents in both neighborhoods take public buses to various public and charter high schools.

Residents living in the EEC rely on walking and public transportation to move in and out of the community. Surveys indicate only 58% of residents living in the EEC report have access to a personal vehicle or a ride from someone else. With most residents walking or using public transportation for their primary mode of transportation the need for multimodal access on streets within and around the neighborhood is important.

**Walking is the number one mode of transportation identified by residents, with 86% residents surveyed reporting they often or sometimes walk to get to places.**

TABLE 11 **MODE OF TRANSPORTATION**

MODE OF TRANSPORTATION	"OFTEN" USED
Walking	45%
Your own car/truck/vehicle	42%
Public transportation – bus	36%
Public transportation – light rail	24%
Ride from someone else	16%
Taxi	9%
Bicycle	7%
Uber or Lyft	2%
GRID Bike	1%

Source: Resident Survey

According to the resident survey, 84% of adults reported participating in 20 minutes of moderately vigorous activities during the week. Interviews with residents indicated that while residents are walking in the community, it is often for a purpose, such as getting groceries and accessing public transportation. Leisure-time physical activity, or activity done for recreation, exercise, and health is not commonly cited as the reason for walking in this community.

## Safe Streets

### Roosevelt Street

Roosevelt Street from 16th to 20th Streets was identified as having significant issues. During a five year period (2011-2015) 48 motor vehicle crashes were reported, including 19 with injuries. It is a busy two-lane street that some children must cross to get to Edison School located on the south side of Roosevelt and residents living in Frank Luke and A.L. Krohn housing must cross to access the grocery store. There are bike lanes and sidewalks on both sides of the street. While the sidewalks are generally in good condition there is no buffer zone between the street and sidewalk except in front of Ranch Market. Residents report inadequate lighting along the entire street and particularly near Edison Park which results in a perceived lack of safety. There is a cross walk at 18th Street. It is a 35 miles per hour speed limit but residents report that cars typically travel much faster.

There is a stop light at the intersection of 16th Street and Roosevelt but the signal light cycle is too short for individuals using strollers, walkers, or wheelchairs to cross safely.

The intersection of 20th and Roosevelt Streets has had 19 motor vehicle crashes with seven injuries. Reinvent PHX recommended installing a traffic light or a four-way stop. To date, the intersection only has stop signs controlling north and south traffic.

**The intersection of 20th and Roosevelt Streets has had 19 motor vehicle crashes with seven injuries. Reinvent PHX recommended installing a traffic light or a four-way stop. To date, the intersection only has stop signs controlling north and south traffic.**



### **20th Street**

20th Street is another very busy street. It is a two-lane street with parking on both sides of the street between Roosevelt and Van Buren on the west side of the street and between Roosevelt and Polk on the east side of the street. There are bike lanes in place between Roosevelt and Van Buren. The speed limit is 30 miles per hour between Van Buren and Polk and 35 miles per hour between Polk and Roosevelt, the residential area with lots of pedestrians and children. Much like Roosevelt, the speed limit is frequently exceeded and there is no traffic calming. The sidewalks between Roosevelt and Polk are wide and in good condition although there is no buffer on either side of the street. The sidewalks from Polk to Jefferson are absent, narrow and in poor repair. There is a lot of trash and weeds along the street.

### **McKinley Street**

McKinley between 18th and 19th Streets is one route children from Frank Luke and A.L. Krohn use to walk to school. The sidewalk on the south side of the street is well maintained; however, the north side is a different matter. The sidewalk is in poor condition with uneven paving and many cracks. There are weeds and trash along the fencing. The intersection of 18th Street and McKinley is very busy certain times of the day from children going to and from school and residents entering and exiting the neighborhood for work. There is only a two-way stop on McKinley.

### **18th Street**

18th Street south of Van Buren is a narrow street bordered by the Sidney P. Osborn project on the west and used car lots on the east. There is parking on both sides of the street which results in limited visibility when residents exit Monroe and Adams on to 18th Street.

### **16th Street**

16th Street is a very busy arterial street that parents cross when taking their children to Head Start located at 15th Street and Adams. The street lights are at Washington and Van Buren Streets, but most parents cross the street at Adams.

Finally, street lighting is generally poor throughout the neighborhood with lights typically on one side of street only and dim. Their findings along with crash data and the status of recommendations from Reinvent PHX are summarized in Table 12.

The City of Phoenix Streets Department is in the second phase of the Van Buren improvement project that will include 16th Street to 24th Street. As described by the City of Phoenix, “The primary focus of the Van Buren Street improvements project is to build off the various initial planning efforts that have been completed thus far and the positive features that exist in the corridor. This project is aimed at improving safety and developing a stronger pedestrian and bicycle environment along Van Buren Street that is accessible to future and existing development and all modes of transportation. The improvements will add bicycle infrastructure (per Phoenix’s Bicycle Master Plan) and help create a stronger pedestrian and business-friendly environment (Complete Streets Initiative).

This project is intended to modify the existing roadway configuration to provide buffered bicycle lanes and sidewalk improvements along Van Buren Street between 7th and 24th Streets. The bike lane buffer may be substituted in some areas to allow for on-street parking. Additionally, the current pedestrian access route will be upgraded to incorporate missing sections of sidewalks and construction of accessible curb ramps to meet all

Americans with Disabilities Act (ADA) requirements. Landscape features will be added at certain areas of opportunity along the project. Finally, some street lighting and signal modifications will be included in this project (City of Phoenix, 2017).

## Safety and Crime

Community safety emerged as one of the most significant issues. Resident surveys indicated that people using drugs (64%), people selling drugs (55%), shooting and violence (52%) and gangs (49%) were all big problems. Crime data from the City of Phoenix reports a violent crime rate over three times that of the City of Phoenix as a whole (20.4 per 1,000 residents vs. 6.1 per 1,000 residents) and drug offenses over twice the rate (15 per 1,000 residents vs. 5.8 per 1,000 residents). Residents living in the Frank Luke and A.L. Krohn housing describe more safety concerns, gang activity, drug use, and fear of retribution than residents at Sidney P. Osborn. Edison Park, adjacent to the Frank Luke and A.L. Krohn housing is known to residents as a public space that allows negative behavior to occur. This directly impacts the level of security and feelings of safety of those living nearby. City of Phoenix Police Department has a dedicated neighborhood officer that has been working in the community for multiple years. Safety is a top priority for this community and resident interviews revealed various levels of trust with police department and response times.



TABLE 12 **STREET SAFETY**

Source: Resident Walking Audits, Reinvent PHX HIA, City of Phoenix Collision Data

STREET SEGMENT OR INTERSECTION	REINVENT PHX RECOMMENDATIONS AND STATUS	SAFETY CONCERN	2011-2015 CRASH DATA	RECOMMENDATION
<b>Roosevelt St from 16th to 20th Sts</b>		Highly trafficked street especially in the mornings and evenings  Street lighting on north side of street  Park VERY dark after sunset	48 Motor Vehicle Collisions (MVC) 16th St – 11 18th St – 9, 8 injuries 19th St – 3, 4 injuries 20th St – 19, 7 injuries	Add traffic calming  Increase lighting on street and in park
<b>Intersection of 20th and Roosevelt Sts</b>	Recommended traffic light or four way stop – no change	Stop signs on north/south	19 MVC, 7 injuries	Add traffic light or 4-way stop
<b>Intersection of 16th and Roosevelt Sts</b>		North/south traffic light cycle is too short for individuals in wheel chairs to cross safely	11 MVC, 3 injuries	Increase crossing cycle and pedestrian countdown clock
<b>20th St from Roosevelt to Van Buren Sts</b>	Recommended bike lanes – in place  Recommended enforcing no parking zones – in place  Recommended traffic calming – no traffic calming	Busy street  From Roosevelt to Polk, sidewalks wide and in good repair  From Polk to Van Buren, narrow sidewalks, no sidewalks in some areas, lots of trash and weeds  Motorcycle club creates loud noises	50 MVC from Roosevelt to Jefferson St  18 MVC at Van Buren and 20th St	Add traffic calming on 20th St  Add, repair and widen sidewalks from Polk to Van Buren Sts
<b>20th St from Van Buren to Washington Sts</b>		Narrow sidewalks, none in some areas  Bushes, weeds and trash on both sides		Add, widen and repair sidewalks  Trim bushes and pick up trash
<b>McKinley and 19th Sts – route to school</b>		North side of street is a narrow street, no speed limit signs, no bike lane, no street lights. About half the sidewalk in poor repair with large cracks, gravel mixed with concrete, little shade. Broken glass and litter on south side of street  Better condition, but poor lighting  No crosswalk		Repair sidewalk on north side of McKinley  Pick up trash  Increase lighting
<b>McKinley and 16th St</b>	Recommended installing an enhanced crosswalk or HAWK – not implemented			
<b>19th St from Villa to Van Buren Sts</b>		Sidewalk on west side of street narrow and only wide enough for one person		
<b>18th St from Van Buren to McKinley Sts</b>		McKinley and 18th Sts very busy with vehicles and children walking  18th St goes through hospital parking lot making it unsafe to walk to bus stop at 18th and Van Buren Sts		Install a 4-way stop at McKinley and 18th St

STREET SEGMENT OR INTERSECTION	REINVENT PHX RECOMMENDATIONS AND STATUS	SAFETY CONCERN	2011-2015 CRASH DATA	RECOMMENDATION
Van Buren from 18th to 16th Sts		Stop light at 18th St too short to safely cross Van Buren if using a walker, stroller or wheelchair	MVC 11, 3 injuries (one pedestrian)	Increase crossing cycle and pedestrian countdown clock timing at 18th St crossing Van Buren St
Van Buren from 16th to 18th Sts		Pooled water from a leak on the south side of the street		
16th and Fillmore Sts and 16th and Portland Sts	Recommended increasing crossing cycle and pedestrian countdown clock – not implemented			
16th St between Roosevelt and Jefferson Sts		High traffic street Poor lighting, lots of graffiti, broken glass, trash. Large plants blocking sidewalk Homeless people. Sidewalks in disrepair No buffer between street and sidewalk. Little shading. Vacant buildings and poorly maintained properties		Widen sidewalks, buffers between sidewalk and street Trim trees and shrubs to increase visibility Brighter lighting Repair sidewalks
16th St at Adams St	Recommended installing an enhanced crosswalk or HAWK – not implemented	Pedestrians cross here to get to Booker T. Washington Head Start No crosswalk or other traffic calming		Install an enhanced crosswalk or HAWK
16th St at Monroe St	Recommended installing an enhanced crosswalk or HAWK – not implemented			
16th St and Washington	Signal is too short for pedestrians to safely cross			Increase crossing cycle and pedestrian countdown clock timing
17th St between Washington and Van Buren Sts		People drive carelessly, fast and do not stop for pedestrians Sidewalks on east side of street are not in good condition. There are cracks and holes. Little shade. There is an ongoing yard sale on a property between Monroe and Van Buren Sts There are no stop signs between Washington and Van Buren Sts		Add speed limit signs Install traffic calming Clear debris from sidewalks Repair sidewalks Enforce code violations
Adams and Monroe between 17th and 18th Sts		There is graffiti on south wall of property Car lots on east side of 18th St park cars on street decreasing visibility for traffic coming out of Sidney P. Osborn	MVC, Adams and 18th Sts, 2 with 3 injuries	Increase street lighting Paint mural on south wall of property Restrict parking on east side of 18th St Widen streets Add bike lanes Install traffic calming on 18th St

## Evaluating Health Impacts

Communities designed to support physical activity are often called active communities. The Guide to Community Preventive Services recommends three strategies to increase physical activity that are related to walkability — community-scale urban design, street-scale urban design, and improving access to places for physical activity, including providing maps and descriptive information (Centers for Disease Control and Prevention, 2011). Studies show more people bike and walk in communities where improvements have been made to biking and walking conveniences.

Improving the street infrastructure and safety can have a direct and indirect impact on the health of the residents in the neighborhood. Better signage and traffic control can reduce unintentional injuries caused by motor vehicle crashes. Indirectly, improving sidewalks and creating buffers between the sidewalks and street adds safety and improves the aesthetics of the community which, in turn, encourages walking. More people walking in the neighborhood offers opportunities for chance encounters, meeting neighbors and increasing social cohesion, in addition to increased physical activity levels.

The threat of real and perceived levels of violence in this community compromises residents' comfort in the use of Edison Park for recreation, physical activity and social connectedness. It increases the risk of anxiety and depression, especially among girls (White, Bruce, Farrell, & Kliewer, 1998).

The threat of real and perceived levels of violence in this community compromises residents' comfort in the use of Edison Park for recreation, physical activity and social connectedness.

## Recommendations

The following recommendations are intended to move the EEC to be an active, safe community. There are recommendations for policy adoption, infrastructure development and programming support. For best results, policy, infrastructure and programming recommendations should be adopted to maximize the health impact.

### Policy

- **Work together with the City of Phoenix Police Department to use Crime Prevention Through Environmental Design (CPTED) guidelines in the design of the properties, including the enhancements to Edison Park.**

**Rationale:** CPTED is a multidisciplinary approach based on the concept that proper design and effective use of the built environment can lead to a reduction in both the incidence and fear of crime while also improving the quality of life. Strategies include landscaping, real and symbolic fencing, lighting, public art, the effect of color, parking lot design, and park design. The redevelopment of this property is an opportunity to create a built environment that provides a deterrent to criminal activity. These strategies include approaches that bring residents out of their homes, creating “eyes on the street” that interferes with criminal activity.

- **Utilize the Active Design Guidelines in the neighborhood and housing redevelopment plan to incorporate multigenerational physical activity opportunities.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

**Rationale:** The active design guidelines outline urban design strategies for creating neighborhoods, streets, and outdoor spaces that encourage walking, bicycling, and active transportation and recreation in communities for all ages.

## Infrastructure

- **Implement specific street recommendations outlined in Table 12. Priority should be given to Roosevelt Street, the intersection of 20th and Roosevelt Streets, 20th Street, the intersection of 18th and Van Buren Streets, and 18th Street.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

**Rationale:** Adopting these recommendations have the potential to reduce motor vehicle crashes and unintended injuries creating a safer environment for pedestrian and bicyclists.

- **Work with the City of Phoenix Department of Transportation to design open space and pathways to assure connectivity to Van Buren Street and to the light rail from housing sites.**

Include trees and other shade structures in the design of sidewalks and open spaces as outlined in the Environmental Quality section.

**Rationale:** The Van Buren Street improvement project will create a safer, more walkable street that will allow residents better access to downtown resources. Creating safe access from the neighborhood will increase the use.

## Program

- **Support resident leaders to form walking clubs in housing areas.**

**Rationale:** Residents expressed interest in walking clubs and fitness trails. There are many benefits to walking clubs. There is little to no cost involved — a pair of walking shoes. Walking with a neighbor helps the individual to stay active. Walking in pairs or groups provides some safety which is very important in this neighborhood. Finally, it is a strategy for crime prevention. When residents in a community walk more there are “eyes on the street” which inherently discourages crime and vandalism.

- **Support programs and resident leadership to address the crime in the community. This includes supporting the community action program or the creation of one or more Block Watches. Also providing regular, organized recreation programs in Edison Park and enforce Edison Park hours with active police monitoring at night.**

*(Similar recommendation to Reinvent PHX HIA completed in 2013)*

**Rationale:** These recommendations all address the crime issue, particularly in the Frank Luke and A.L. Krohn area. Edison Park seems to be the hub of the criminal activities. These recommendations would create more “eyes on the park.” Like “eyes on the street,” it will discourage crime and vandalism. Resident feedback indicated that it was critical to enforce park hours since much of the negative activity is later at night.

Walking clubs are a strategy for crime prevention.  
When residents in a community walk more there are “eyes on the street”  
which inherently discourages crime and vandalism.

# MONITORING AND EVALUATION

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The monitoring and evaluation phase of an HIA, seeks to evaluate whether the HIA achieved its stated goals. Evaluations not only inform the impact of the HIA but also gather lessons learned to shape future HIAs. While funding is limited in implementing a long-term outcome evaluation of this HIA, monitoring of short- and medium-term impacts and effectiveness of process are possible.

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The recommendations of this HIA should be monitored to evaluate the impact of the HIA on the City's Transformation Plan and redevelopment of the EEC. When possible changes in short, medium and long-term health impacts as outlined in the pathway diagram (Figure 1) should be included in progress monitoring. The following are questions that should be considered to evaluate the impact of the HIA:

- 1) Is there evidence that decision makers used health information in their final decision?
- 2) Were the recommendations adopted in the Transformation Plan?
- 3) Were the recommendations implemented in the redevelopment of the EEC?
- 4) Did the HIA contribute to changes that reduced health inequities and inequities in the social and environmental determinants of health.

The monitoring and evaluation should also gather information about the effectiveness of the HIA process, including how the decision making process was informed, any new capacity built among partners to consider health in future housing and mixed-income planning decisions, and any new partnerships established as a result of the HIA. Key questions to be considered to evaluate the process of this HIA are:

- 1) Did the HIA Advisory Committee include all relevant stakeholders? How did HIA Advisory Committee contribute to the HIA?
- 2) What capacity was built for future HIA work in the City of Phoenix and other organizations?
- 3) Is there evidence that the community has a better understanding of the health needs in the EEC? Did the HIA process built the capacity and ability of communities facing health inequities to engage in future HIAs and in decision making more generally?
- 4) Have new partnerships formed because of the HIA?

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# APPENDIX A: EDISON EASTLAKE CHOICE NEIGHBORHOODS COMMUNITY



## APPENDIX B: RESIDENT LEADERSHIP COUNCIL MEMBERS

The following is a list of residents from the Resident Leadership Council (RLC) who served as the HIA advisory council. These residents gave their time, expertise and grounded the findings and recommendations in this HIA report.

### Resident Leadership Council Members:

Laura Felix	Francisca Labate	Jose Perea
Aaron Gipson	Beatriz Martinez	Teresa Perea
Paula Gipson	Lorena Mendez	Beatriz Rivera
Geraldine Harris	Flor Moreno	Roberto Sandoval
Imelda Hartley	Martha Ortiz	Emma Villanueva



*From left: Jose Perea, Roberto Sandoval, Lorena Martinez, Eva Olivas (Phoenix Revitalization Corporation), Martha Ortiz, Jessica Bueno (Phoenix Revitalization Corporation), Laura Felix, Imelda Hartley, Teresa Perea, Geraldine Harris*

## APPENDIX C: SHORT-FORM CORNER STORE AUDIT TOOL

### Short-form Corner store Audit Tool (SCAT)

Rater ID \_\_\_\_\_ Store ID \_\_\_\_\_ Date \_\_\_\_\_ Start time \_\_\_\_\_ End time \_\_\_\_\_

#### In-store version

Look for the presence of each of the following items:

1. Skim or 1% milk (unflavored)

Yes      No

5. Ground meat

Yes      No

2. 5 or more different types of fresh fruits

Yes      No

6. Refrigeration containing fresh fruits, vegetables,  
or ground meat

Yes      No      N/A

3. 5 or more different type of fresh vegetables

Yes      No

7. Does the store have WIC signs?

Yes      No

4. Frozen vegetables (any type)

*Without sauce, salt, or sugar*

Yes      No

Yes: 1 point      No: 0 points

Total score \_\_\_\_\_ Scoring: 7 total points possible

#### Notes

**1. Milk:** Any size unflavored skim or 1% cow's milk

**2. Fresh fruit types:** Must be a distinct fruit to count as a "type" (e.g., all apples count as 1 type, regardless of number of different varieties). *Do not* count lemons or limes.

**3. Fresh vegetable types:** Must be a distinct vegetable to count as a "type" (e.g., all onions count as 1 type, regardless of number of different varieties). *Do* count potatoes and onions.

**4. Frozen vegetables:** *Cannot* have any added ingredients such as salt, sugar, or sauces.

**5. Ground meat:** Any type, including beef, turkey, or chicken

**6. Refrigeration:** Must contain fresh fruits or vegetables, or ground meat. Do not include refrigeration for beverages only.

**7. WIC signs:** Signs on door, windows, near cash registers, and/or on shelves indicating that WIC vouchers are accepted.

## APPENDIX D: WALKING AUDIT TOOL

### Street Audit Report

#### Tips for Using the Street Audit Report

- Please think about your personal safety when conducting this audit, such as: don't go alone; be alert to potential danger; and don't go at night.
- Depending upon the weather, you may want to take some water and a hat, or use sunscreen. You may be outside for over an hour, so please take measures to keep yourself healthy.
- Pay attention to the street and your walk. You may have been on this street many times before, but look at your street again with extra attention to details.
- You may need to switch between sections or pages as you complete your street audit. Please review and be familiar with all of the sections and questions before you begin.
- We encourage you to take pictures of the street and to help us understand the condition of the street. Throughout the audit, we have included a camera icon as a reminder. Please make notes on this audit about the photos you have taken.



### Section A: Street Information

My Name: \_\_\_\_\_

Date (m/d/yr): \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Day of the Week: \_\_\_\_\_

Street Name (example: Oak Street): \_\_\_\_\_

Cross Streets (example: 3<sup>rd</sup> Avenue and 12<sup>th</sup> Avenue): \_\_\_\_\_

Approximate Temperature: \_\_\_\_\_ °F Weather:  Clear  Partly Cloudy  Rainy

Start Time: \_\_\_\_ : \_\_\_\_  AM  PM End Time: \_\_\_\_ : \_\_\_\_  AM  PM

## WALKING AUDIT TOOL — PAGE 2

### Section B: Street, Cars and Drivers

This section asks for general information about the street, its surroundings and its drivers.

As you answer questions, please keep the following definitions in mind:

**Good condition:** looks clean and maintained; for example, minimal rust or graffiti

For most of your walk, how many **lanes** are available for traffic? *Do not count the turning lane.*

\_\_\_\_\_

Do you see a posted **speed limit sign**?  No  Yes

*If yes ...* What is the posted **speed limit**? If there are different speeds along your walk, please list all. \_\_\_\_\_

What kind of **neighborhood** do you see on either side of this street? *Check all that apply.*

- Houses or apartments
- Businesses
- Institutions, like a school or hospital
- Industrial, for example a warehouse
- Vacant land
- Parks
- Abandoned buildings
- Highway or Interstate road, such as I-10

Do you see any **bus or light rail stops** along your walk?  No  Yes

*If yes ...* How many? \_\_\_\_\_ bus stops \_\_\_\_\_ light rail stops

What kind of **amenities** do you see at the stops? *Check all that apply.*

- Bench or other seating
- Covered shelter
- Trash can
- Public art

Were the amenities at the bus or light rail stop in **good condition**?

- All or most in good condition
- About half
- None or few in good condition

Did you see anyone **waiting** for a bus or light rail train?  No  Yes

*If yes ...* About how many people? \_\_\_\_\_

Would you **feel safe** waiting for a bus or light rail train right now?

- No
- Yes
- I don't know

*If no ... why?* \_\_\_\_\_

\_\_\_\_\_

Do you see any **bike routes or lanes**? *Check all that you see.*

- None
- Marked lane
- Designated route sign
- Share the road signs

## WALKING AUDIT TOOL — PAGE 3

What kind of **traffic signals or signs** do you see along your walk? *Check all that you see.*

- Stop sign    Traffic light    Speed bump    Painted or marked cross walk    Yield sign  
 Other: \_\_\_\_\_    Other: \_\_\_\_\_

During your walk, do you see any **drivers** doing the following:

- Not stopping for people crossing the street?  Yes, a lot    Yes, a little    None at all  
Driving faster than the speed limit?  Yes, a lot    Yes, a little    None at all  
Speeding up to make it through a yellow light?  Yes, a lot    Yes, a little    None at all  
Other dangerous driving habits?  Yes, a lot    Yes, a little    None at all

*If yes ... please describe:* \_\_\_\_\_  
\_\_\_\_\_

Does the street have **street lights or lamps**?  No    Yes

- If yes ... How much of the street could be lit?*    less than 25%    25% to 75%  
 more than 75%



### Section C: Sidewalks

This section asks detailed questions about sidewalks along this street. You will need to walk the entire route on both sides of the street. For example, if you are reporting on Oak Street, you will need to walk the entire route from 3<sup>rd</sup> Avenue to 12<sup>th</sup> Avenue on the north side (*Side 1*) of the street, and then 12<sup>th</sup> Avenue to 3<sup>rd</sup> Avenue on the south side (*Side 2*) of the street. *It is important to gather information about both sides of the street.*

As you answer questions, please keep the following definitions in mind:

**Good condition:** looks clean and maintained; for example, not much litter and no cracks in the sidewalk surface

## WALKING AUDIT TOOL — PAGE 4

### Side One

Which side of the street are you walking on? North South East West I don't know

Does this side of the street have a **sidewalk**? Yes, all or most of this side has a sidewalk  
About half None of this side has a sidewalk

*If no ... Where do people walk?* In the grass or dirt along the street On the street  
Other: \_\_\_\_\_ *If there is no sidewalk, please skip the following questions and go to **Side Two**.*

What is the sidewalk made of? *Check all that you see.* Concrete Asphalt Gravel Dirt  
Other: \_\_\_\_\_

Is the sidewalk in **good condition**? Yes, all or most of this side in good condition About half None of this side is in good condition



Is there a **“buffer”** between the sidewalk and the street, such as a grassy or dirt patch, trees or bushes? Yes, all or most of this side has a buffer About half None of this side has a buffer

Are there **major obstacles blocking** the sidewalk making it difficult to use? *Check all that you see.* Trees Large plants, weeds or bushes Utility or telephone poles Large cracks, bumps or holes Other: \_\_\_\_\_



About **how wide** is the sidewalk for most of your walk?

Only one adult can walk on the sidewalk Two adults can walk side-by-side on the sidewalk  
Three adults can walk side-by-side on the sidewalk Four or more adults can walk side-by-side on the sidewalk

If the sun was directly overhead, how much of this sidewalk would be **shaded**? less than 25% 25 to 75% more than 75%

## WALKING AUDIT TOOL — PAGE 5

### Side Two

Which side of the street are you walking on? North South East West I don't know

Does this side of the street have a **sidewalk**? Yes, all or most of this side has a sidewalk  
About half None of this side has a sidewalk

*If no ... Where do people walk? In the grass or dirt along the street On the street  
Other: \_\_\_\_\_ *If there is no sidewalk, please skip the following questions  
and go to **Section D**.**

What is the sidewalk made of? *Check all that you see.* Concrete or asphalt Gravel Dirt  
Other: \_\_\_\_\_

Is the sidewalk in **good condition**? Yes, all or most of this side in good condition About  
half None of this side is in good condition



Is there a **“buffer”** between the sidewalk and the street, such as a grassy or dirt patch, trees or  
bushes? Yes, all or most of this side has a buffer About half None of this side has a  
buffer

Are there **major obstacles blocking** the sidewalk making it difficult to use? *Check all that you  
see.* Trees Large plants, weeds or bushes Utility or telephone poles Large  
cracks, bumps or holes Other: \_\_\_\_\_



About **how wide** is the sidewalk for most of your walk?

Only one adult can walk on the sidewalk Two adults can walk side-by-side on the sidewalk  
Three adults can walk side-by-side on the sidewalk Four or more adults can walk side-by-  
side on the sidewalk

If the sun was directly overhead, how much of this sidewalk would be **shaded**? less than  
25% 25 to 75% more than 75%

# WALKING AUDIT TOOL — PAGE 6

## Section D: Appearance and Safety

This section will ask about the safety and appearance of the street. As you answer questions, please keep the following definitions in mind:

**Good condition:** looks clean and maintained; for example, minimal rust or graffiti

Do you see any of the following **safety or appearance concerns** along your walk? *Check all that you see.*

	I don't see any of this.	I see a little of this.	I see a moderate amount of this.	I see a lot of this.
<b>Poor lighting</b> , for example, absent or limited lighting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Graffiti</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Vandalism</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Broken glass</b>				
<b>Excessive litter</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Heavy traffic</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Excessive noise</b> , for example, noticeable sounds that are unpleasant or annoying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Vacant buildings or lots, or undesirable uses</b> , for example, abandoned houses or a liquor store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Poorly maintained properties</b> , for example, tall weeds in yard or broken windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Lack of eyes on the street</b> , such as absence of people, no houses or store fronts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## WALKING AUDIT TOOL — PAGE 7

	I don't see any of this.	I see a little of this.	I see a moderate amount of this.	I see a lot of this.
Evidence of threatening persons or behaviors, such as gangs, or alcohol or drug use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animal waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Undesirable odors, such as garbage or sewer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stray or unleashed dogs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

About **how many** of the following things did you see during your walk:



Other people walking \_\_\_\_\_

People biking on the sidewalk \_\_\_\_\_

People biking on the street \_\_\_\_\_

People biking in a bike lane \_\_\_\_\_

Benches (*don't count the ones at light rail or bus stops*) \_\_\_\_\_

*If there were benches, were they in **good condition**?*  All or most in good condition  About half  None or few in good condition

Trash cans (*don't count the ones at light rail or bus stops*) \_\_\_\_\_

*If there were trash cans, were they **overflowing** with trash?*  All or most overflowing  About half  None or few overflowing

Shade structures, like awnings or pergolas \_\_\_\_\_

*If there were shade structures, were they in **good condition**?*  All or most in good condition  About half  None or few in good condition

**WALKING AUDIT TOOL — PAGE 8**

Did you feel **safe** during your walk? No Yes

*If no ... Describe why you feel unsafe.*

**What can be done to make this street safer for people who walk?**

**If you have other observations or comments about this street, please describe them.**

***Thank you for your help!*** Please check that you have filled out the entire report.

**EDISON  
EASTLAKE  
COMMUNITY**

**CHOICE  
NEIGHBORHOOD  
INITIATIVE**

**HEALTH IMPACT  
ASSESSMENT**



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