



Lee Kornegay Intermediate School Playground

Health Impact Assessment





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The following individuals and entities generously contributed their time and expertise in the development of this HIA:

LEE KORNEGAY SCHOOL HEALTH IMPACT ASSESSMENT STEERING COMMITTEE:

Sherry Dorothy, Miami USD 40 Superintendent

Darryl Dalley, Mayor, Town of Miami

Mary Gooday, MUSD

Neal Jensen, Cobre Valley Regional Medical Center

David Pastor, Lee Kornegay School Principal

Evelyn Vargas, Cobre Valley Regional Medical Center

Bethany Cheney, Gila County Health Department

Nick Renon, Tri-City Fire

Alexis Followill, Student MUSD

Lisa Foster, Capstone Pinto Valley Mine

ARIZONA DEPARTMENT OF HEALTH SERVICES

Anissa Jonovich, Community Planner

Gertrudes Rodriguez, Community Health Strategies Manager

Deborah Robinson, Office Chief of Community Innovations

Melanie Homec, Active Living Specialist

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Contents

0. SUMMARY	1
HIA Purpose And Goals	1
Summary Of Findings	1
Recommendations To Leverage The Playground To Promote Good Physical Health	3
Design	3
Recommendations To Leverage The Playground To Promote Good Social Health	4
Recommendations To Leverage The Playground To Promote Good Mental Health	5
Public Engagement	5
00. ABOUT	7
The Project	7
Health Impact Assessments (HIA)	9
The HIA Process	10
1. SCREENING	11
Introduction	11
Screening Summary	11
Context	11
Determinants Of Health	13
Relationship Of A Playground To Determinants Of Health	15
4. SCOPING	17
Introduction	17
Relevance Of This Project To Community Health	17
Health Outcomes	19
Specific Health Outcomes Evaluated In This Assessment	21
Data Resources	21
Public Engagement	22
Time Frames And Potential Usefulness Of This HIA	22

5. ASSESSMENT	23
Introduction	23
Socio-Economic Overview.....	23
Gila County.....	26
Health Reporting	29
Community Input.....	35
Health Factors Considered In This Assessment	35
Potential Public Health Impacts Of A Playground And Planned Trail.....	36
Impacts Of The Playground And Planned Trail On Physical Health	36
Impacts Of The Playground And Planned Trail On Mental Health.....	38
Social Health.....	39
7. REPORTING	41
Introduction	41
Implementation Entities.....	41
Presentations.....	41
7. RECOMMENDATIONS	43
Introduction	43
Recommendations.....	43
Recommendations To Leverage The Playground To Promote Good Physical Health:.....	43
Recommendations To Leverage The Playground To Promote Good Social Health.....	47
Recommendations To Leverage The Playground To Promote Good Mental Health.....	47
Monitoring.....	49
7. MONITORING AND EVALUATION.....	49
Recommendation.....	49
Responsible Entity.....	49
Suggested Timing.....	49
EVALUATION	51
Impact Evaluation	51
Process Evaluation.....	52
APPENDIX A: ABOUT CHRONIC DISEASES	57
APPENDIX B: STAKEHOLDER ENGAGEMENT PLAN	59

FIGURES

Figure 1: Project Site Map.....	8
Figure 3: Pathways Diagram.....	18
Figure 4: School District Boundaries.....	24
Figure 5: Miami School District 2010 Age Distribution.....	25
Figure 6: Gila County CCDs	26
Figure 7: 2014 3Rd Quarter Unemployment	27
Figure 8: Depression Rates By Employment Status (2013).....	28
Figure 9: Weekly 2014 Wages Arizona Counties	28
Figure 10: Percent Of Employment In Mining/Manufacturing (2014).....	28
Figure 11: Percent Of Population Receiving Snap (2010)	29
Figure 13: Gila County Health Ranking Summary.....	31
Figure 14: Percent Of Population With Diabetes (2014)	31
Figure 15: Drug Poisoning Deaths Per 100,000 Pop. (2014).....	32
Figure 16: Percent Of Adult Population Obese.....	32
Figure 17: Perceived And Diagnosed Health Concerns	33
Figure 18: BMI Indices For Children And Teens.....	34
Figure 19: Percent of School Students Obese, Overweight, And Underweight (2014-2015).....	34
Figure 20: Incidents Associated With Playground Equipment	37
Figure 21: 12-Month Prevalence Of Major Depressive Episode Among U.S. Adolescents	38
Figure 22: Reporting	41
Figure 22: Playground Facilities.....	44
Figure 23: Implementation Responsibility And Timing.....	49

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0. Summary

HIA PURPOSE AND GOALS

This project evaluates the health impacts that would result from the construction of a school playground with swings and a school garden and a future trail at the Lee Kornegay Intermediate School (Figure 0: Project Context Map). The playground is envisioned to serve middle school students during school hours. During non-school hours, the playground is envisioned to be a community resource. The future trail is planned to provide a place for walking and to connect to other trails planned within the immediate area. This Health Impact Assessment (HIA) was developed at the request of the School District Superintendent with the goal of developing community awareness of the health benefits of a playground and providing data that could be used as the School District applies for funding to construct and design the playground. The HIA is funded by the Arizona Department of Health Services (ADHS) with a grant from the Centers of Disease Control (CDC).

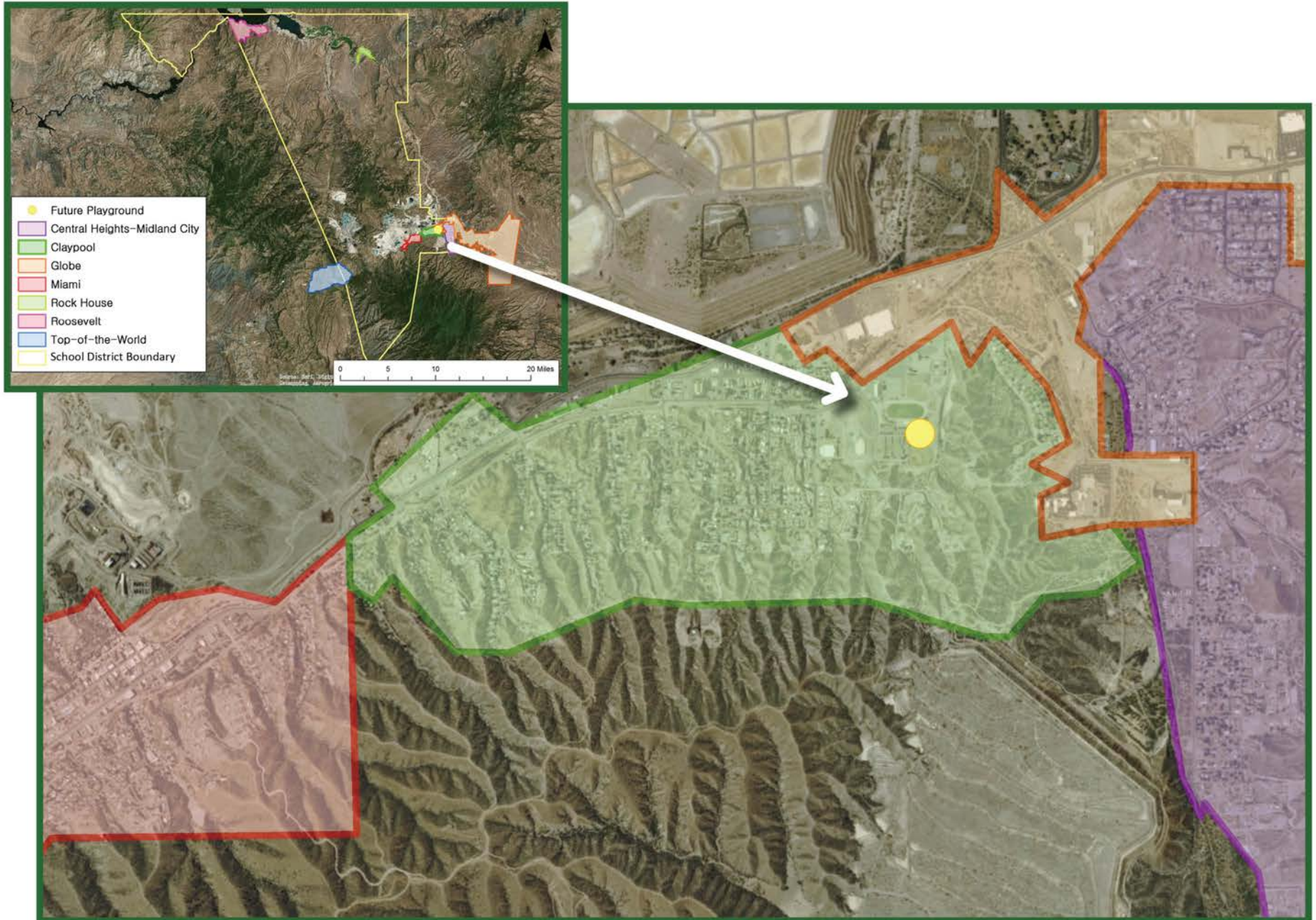
SUMMARY OF FINDINGS

A playground and planned trail could positively impact the health of the surrounding community. A well designed playground will providing a venue for physical activity and could help reduce the incidence of chronic diseases including hypertension, diabetes, obesity. Increased exposure to sunlight and air that could occur from use of the playground could help to reduce depression, but could also result in an increase in UV exposure. By becoming a destination outside school hours, the playground could enhance the sense of community by providing places for social interaction, family gatherings and community events. Children and others traveling to the playground by bicycle and foot could be at increased risk for collisions with vehicles on U.S. 60 or Ragus Road. Should the planned trail connect to the north side of U.S. 60, trail users could also be at increased risk for collisions with vehicles.

To maximize the potential positive and minimize potential negative health benefits of the proposed playground, it should be designed to:

- Support school and community activities
- Connect to non-motorized connections, such as planned or existing bike paths and trails
- Include active play areas that encourage physical activity
- Encourage healthy eating through edible landscaping or a school garden
- Provide interpretation about physical activity and individual health
- Be safe in management, surveillance, and design.

Figure 0: Project Context Map



Specific recommendations are provided for design, construction, and maintenance in three Community Health areas; Physical Health, Social Health, Mental Health. These recommendations are below:

RECOMMENDATIONS TO LEVERAGE THE PLAYGROUND TO PROMOTE GOOD PHYSICAL HEALTH:

DESIGN

- The playground should be accessible from planned and existing bicycle paths, trails, and other non-motorized facilities
- **To maximize physical health benefits, ensure** the area planned for the playground has adequate room for multiple device play facilities and active play areas. While swings could certainly be an important feature, other facilities that encourage active play and social interaction, such as multiple device play-structures with could provide more health benefits and reduce accidents.
- Until funding is available for a trail, consider creating a stabilized surface walking path around the perimeter of the playground to encourage use of this space by community members for walking. Including exercise equipment around the walking path would enhance its use by the community and provide additional opportunities for physical activity.
- To limit UV exposure, shade should be provided over all play structures (excluding swings) and over any picnic tables or gathering areas.
- Consider providing a water fountain at the playground to prevent dehydration. If a water fountain is not possible work with local retailers (such as WalMart) to provide bottled water that is available to children as they leave the classroom to access the playground. Educate the community about the importance of staying hydrated to physical health with singing at the playground about the importance of staying hydrated.
- Provide signing around the playground about the benefits of physical activity related to health. For example, create questions such as, "15 minutes of play can burn XY calories. A soda is XY calories. How many minutes of play would it take to burn off a soda?"
- To prevent automobile collisions, consider providing a striped bike lane along Ragus Road to the playground. Additionally consider signing, striping, and a pedestrian signal across Ragus Road and U.S. 60 at the intersection of Ragus Road and U.S. 60.
- Ensure all facilities are ADA accessible.

CONSTRUCTION

- To enhance safety, and protect against falls from collisions and other accidents, an engineered wood or rubber playground surface should be included in the playground. Playground surfaces are important to safety and the quality of the playground. A 2012 study² completed for the U.S. Access Board by the National Center on Accessibility rated a variety of playground surface types and found that the surface should be selected based on the environment, use, and cost considerations. Additionally the quality of installation and maintenance will impact longevity and quality.
- Many playground equipment vendors provide installation for their products. Construction of the playground can be completed by licensed contractors or others with adequate experience in playground construction. Use only commercially constructed equipment.

OPERATION

- To ensure the playground remains attractive and used, Create a capital fund and deposit 10% of the total playground cost into each year to pay for ongoing maintenance and equipment replacement.

RECOMMENDATIONS TO LEVERAGE THE PLAYGROUND TO PROMOTE GOOD SOCIAL HEALTH

DESIGN

- Edible plants as landscape could be used to teach students and residents about healthy eating. Landscaping the playground could be achieved as a school or community project, with certified and capable supervision. To ensure the garden is maintained, consider surveillance.
- The playground should be designed to be easily visible from the parking area allowing surveillance by local police and other safety personnel during non-school hours.
- Informational signs understandable to middle school age and adult users should clearly describe playground rules, regulations, and consequences. Emergency contact information should be included on the sign. Consideration could be given to working with the town of Miami on creating ordinances that could be used to enforce playground etiquette.
- Consider maintenance in the design of the playground. For example, should trees be provided, consider watering and trimming (many children climb trees and damage them). Consider interactions between users and vegetation (no plants with thorns, no poisonous plants). Develop a maintenance plan and budget to ensure the playground continues to be attractive to the community and students.

CONSTRUCTION

- When possible and practical, use locally sourced materials to support the local economy.
- Consider working with the mines for basic site preparation services, such as grading, drainage, electric, lighting, and fencing.

OPERATION

- To educate the community about the benefits of healthy cooking and eating, work with the Globe Miami Farmer's Market to extend the market to create a school garden and hold events (such as cooking and canning demonstrations) related to the garden.
- Work with the town of Miami or Gila County to provide surveillance during non-school hours either through the parks department or police departments (or both). Alternatively, work with a non-for profit to program and manage the playground during non-school hours. Consider a partnership where a portion of the school and playground is leased to a program provider during summer or school breaks, and use the revenues to support maintenance and improvements for the playground.
- Develop a playground management plan to ensure constant surveillance during school hours.
- Work with the School Nurse or local health providers to identify safe practices with regards to UV exposure. Educate teachers regarding the use of sunscreen prior to playground use. Include these in management plan for the playground.
- Work with the Town of Miami and Gila County to program events, such as festivals, Farmer's Markets, and fairs at the playground. Promote these events through school and town communications networks. For example, consider holding a 4th of July Festival at the playground and charging for vendor booths and games (such as bouncies). Use this money to fund playground maintenance and facilities.

RECOMMENDATIONS TO LEVERAGE THE PLAYGROUND TO PROMOTE GOOD MENTAL HEALTH

DESIGN

- The playground should be designed to support school and community activities that provide an opportunity for people to meet neighbors and take pride in their community and school.
- To promote social interaction, include ramadas in the playground design. Depending on the extent to which the school envisions the playground being used by the community, ramadas could include electric for lighting and evening use; barbeque's, and trash receptacles. Should the playground include community facilities, it is important that management during non-school hours be provided either through an agreement with the town of Miami or Gila County Parks Department, or by the School District itself. Should the quality of the playground decline, or should it be perceived as unsafe, the extent to which it is used by the community will also decline².

PUBLIC ENGAGEMENT

This Health Impact Assessment was developed with the guidance of a Steering Committee. The Committee met three times to provide input on the Pathways Diagram, preliminary scoping (health findings), and the Health Impact Assessment recommendations. To solicit broader community input, a website (www.schoolplayground.mindmixer.com) was developed and advertised on the school website, through fliers distributed to the community by the Stakeholder Committee, and on the District Facebook Page. Additional input was obtained by asking students to get on the website during their computer class.

Regular updates on the progress of this Health Impact Assessment were provided to the Arizona Alliance for Livable Communities, a stakeholder group of health agencies and other entities working to raise awareness about the relations between community design and health in Arizona.

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00. About

THE PROJECT

This project evaluates the health impacts that would result from the planned construction of a school playground and a school garden and trail at the Lee Kornegay Intermediate School. The playground is envisioned to serve middle school students during school hours. During non-school hours, the playground is envisioned to be accessible as a community resource. The future trail is planned to provide a place for walking and to connect to other trails planned within the immediate area. (Figure 1: Project Site Map.) This Health Impact Assessment (HIA) was developed at the request of the School District Superintendent. The HIA is funded by the Arizona Department of Health Services (ADHS) with a grant from the Centers of Disease Control (CDC).



Currently the school uses an adjacent softball field for recreation activities. Plans to fence this field for girls softball provides an opportunity to create a playground out of unused land on the west side of this field.

Figure 1: Project Site Map



HEALTH IMPACT ASSESSMENTS (HIA)

A Health Impact Assessment (HIA) helps communities and others make informed choices about improving public health through community policies and design. By conducting a HIA, a community can leverage the health benefits of a proposed plan, policy, program, or project by objectively evaluating the potential health impacts or outcomes before it is built or implemented. An HIA can provide recommendations to increase positive health outcomes and minimize adverse health outcomes. The HIA process brings public health issues to the attention of persons who make decisions about areas that fall outside of traditional public health arenas, such as transportation or land use³.

The National Research Council⁴ defines HIA as “a systematic process that uses an array of data sources and analytic methods, and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population. HIA provides recommendations on monitoring and managing those effects.”

COMMUNITY DESIGN AND LAND USE

The Centers for Disease Control and Prevention recognizes several significant health issues related to community design and land use. Some of the issues related to this project include:

Accessibility

Poorly designed communities can make it difficult for people with mobility impairments or other disabling conditions to move about their environment; consequently, people with a disability often are more vulnerable to environmental barriers.

Children’s Health and the Built Environment

Healthy community design can benefit children in many important ways. Much is now known about designing, building, and renovating schools to promote children’s health and school performance. Planning parks can be invaluable as part of a strategy of community design that is healthy and nurturing for children.

Older Adults’ Health and the Built Environment

Older adults interact with the built environment in ways that reflect changing lifestyles and changing physical capabilities. After retirement, people have more time to enjoy parks, recreational activities, and other community facilities.

Injury

One of the critical public health challenges related to community design, particularly transportation planning, is the interaction between motorized and non-motorized transportation.

Mental Health

The effects of the community design choices we make and the opportunities those choices afford or deny us are only just now beginning to be understood. Such effects not only can influence community members’ physical health but their mental health as well.

Physical Activity

According to the 1999 U.S. Surgeon General’s Report on Physical Activity and Health, people of all ages who are generally inactive can improve their health and well-being by becoming even moderately active on a regular basis.

Respiratory Health and Air Pollution

Transportation-related pollutants are one of the largest contributors to unhealthy air quality. Many of these common air pollutants, such as ozone, sulfur dioxide, and particulate matter, are respiratory irritants that can aggravate asthma either alone or in combined action with other environmental factors. In addition, recent research findings are beginning to point to a potential link between some air pollutants and the initial onset of certain respiratory conditions.

Social Capital

The fabric of a community and the community pool of human resources available to it is often called its “social capital.” This term refers to the individual and communal time and energy that is available for such things as community improvement, social networking, civic engagement, personal recreation, and other activities that create social bonds between individuals and groups.

THE HIA PROCESS

The HIA process includes five steps:

- Screening
- Scoping
- Assessment
- Recommendations
- Reporting
- Monitoring

Screening is the first step of the process. During the screening process, a determination is made if the project is related to the determinants of health and if conducting an HIA will have value to decision makers. Information about determinants of health is located in the Screening chapter of this Assessment.

Scoping identifies the determinants of health and specific health topics that will be addressed in the HIA, and identifies data sources available to conduct the HIA. During scoping, the types and extent of the public engagement process are also outlined in a public engagement plan. The public engagement plan for this HIA is located in Appendix B.

The **Assessment** phase of an HIA is where the baseline health indicators related to the project or policy are described and where the potential health effects of the proposed project or policy are identified.

Recommendations are specific actions included in the HIA that could benefit community health with regards to the proposed project or policy.

Reporting includes activities to inform the community of the HIA recommendations and process.

The **monitoring and evaluation** section includes information on ways the process could have been improved, and potential indicators that could be used to monitor the impact of the project and recommendations.



1. Screening

INTRODUCTION

The Screening is the first phase of a Health Impact Assessment (HIA). During this phase, the value of examining the impact of a proposed project or policy is assessed. The assessment is based on the extent to which the proposal could impact determinants of health. Using the findings of the Screening, a determination is made whether to conduct a HIA.

SCREENING SUMMARY

The proposed playground will affect several factors that are identified as determinants of health by multiple organizations and consequently, could influence the overall health of children attending the Lee Kornegay Intermediate School and residents of the Miami and Claypool areas. These factors include the built environment, influencing how people and school children play, social support networks and the economic environment within the Miami and Claypool areas, and ultimately individual behaviors within Miami and Claypool.

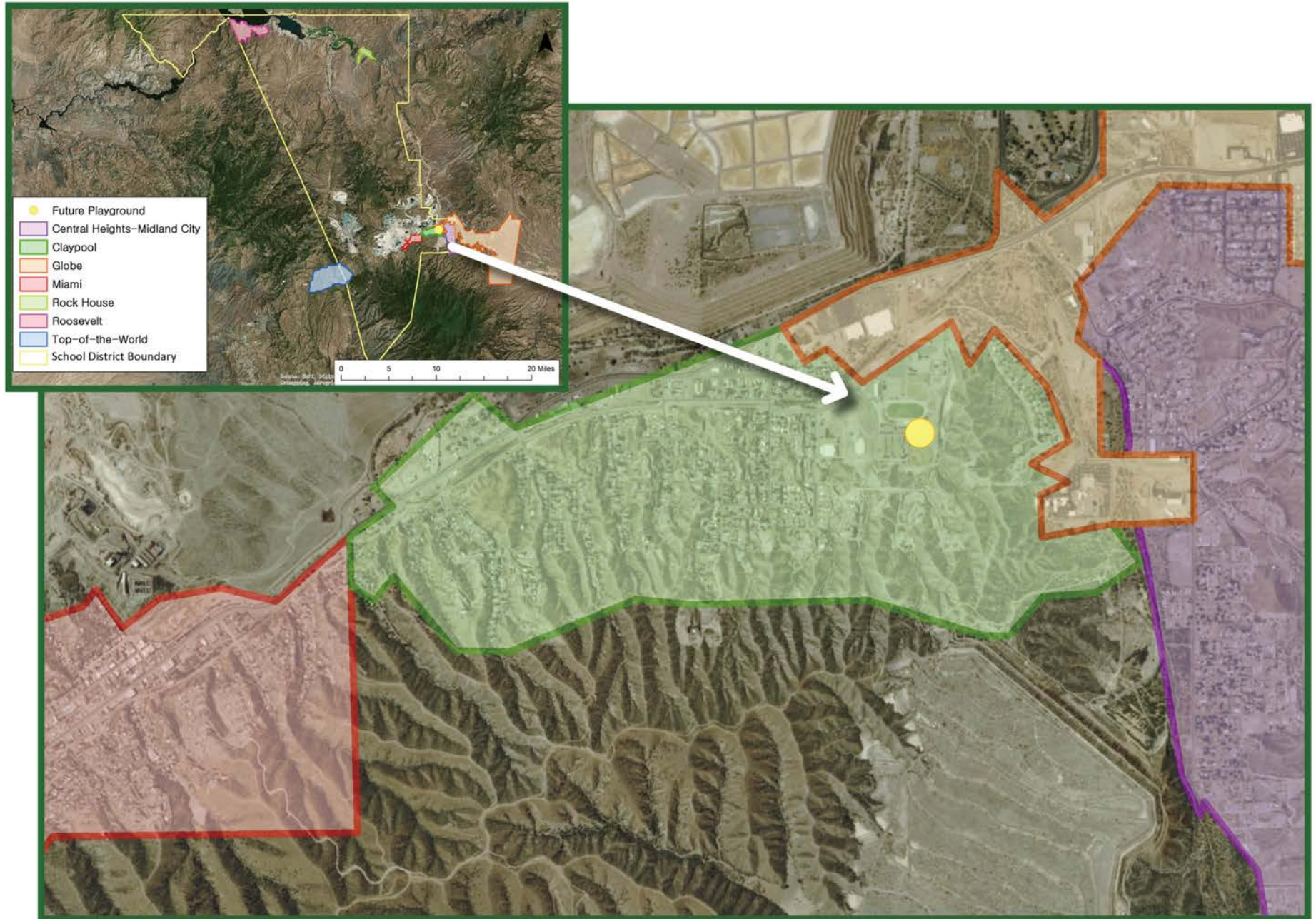
CONTEXT

The Lee Kornegay Intermediate School is located on the Miami Unified School District Campus in Miami, Arizona. The School District Campus is approximately 60 acres located in unincorporated Claypool, just east of the town of Miami municipal limits. Miami is located approximately 60 miles east of central Phoenix, on the east side of the Pinal Mountains in central Arizona. US 60 is the main road through town, and connects Miami to Phoenix to the west and Globe, a sister mining community immediately to the east. East of Globe, and also within Gila County, is the Fort Apache Reservation, a subdivision of the White Mountain Apache Indian Reservation.

The school district is extensive and includes several mining and rural communities surrounding the Miami Copper open-pit copper mine, smelter and rod mill. (Figure 2: Project Context Map.)

The School District campus includes an elementary, middle and high school. The site is hilly and steep. The high school is on the lowest part of the site, the middle school is above the high school, and the elementary school is located east of the middle school and separated from the middle school by an access road. The proposed project is located between the middle school parking lot and girls softball field.

Figure 2: Project Context Map



DETERMINANTS OF HEALTH

Different organizations engaged in promoting health nationally and internationally have different ways of describing what factors determine health. While these descriptions differ, they all generally focus on three general categories: physical environment; social environment; and individual behaviors. To a large extent, individual behavior is influenced by physical and social determinants.

Healthy People 2020, which operates under the auspices of the National Institute of Health Office of Disease Prevention and Health Promotion identifies physical and social determinants of health. Social determinants identified by Healthy People 2020 directly relevant to the playground include:

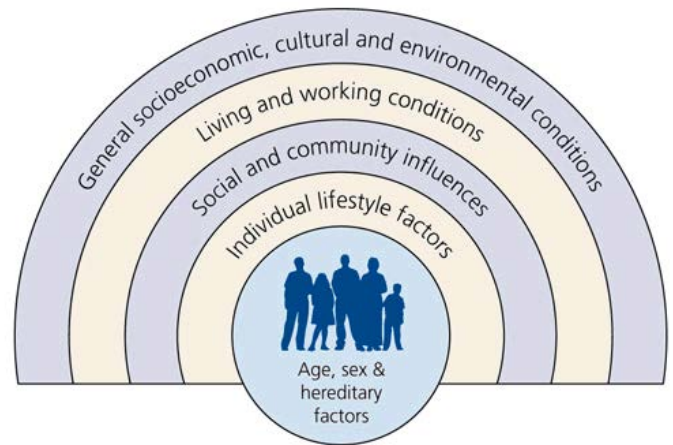
- Availability of community-based resources in support of community living and opportunities for recreational and leisure time activities

Physical determinants include two directly related indicators:

- Worksites, school, and recreational settings
- Housing and community design⁵.

The Centers for Disease Control (CDC)⁶ defines determinants of health, as factors that may be biological, socioeconomic, psychosocial, behavioral, or social in nature. The CDC identifies five general areas including:

- **Biology and genetics.** Individual behavior. Examples: alcohol use, injection drug use (needles), unprotected sex, and smoking
- **Social environment.** Examples: discrimination, income, and gender
- **Physical environment.** Examples: where a person lives and crowding conditions
- **Health services.** Examples: Access to quality health care and having or not having health insurance⁷.



Source: GlobalHealthHub.org. <http://www.globalhealthhub.org/2011/07/18/sdh-determinants/>

HEALTHY PEOPLE 2020

Social Determinants of Health

- Availability of resources to meet daily needs (e.g., safe housing and local food markets)
- Access to educational, economic, and job opportunities
- Access to health care services
- Quality of education and job training
- Availability of community-based resources in support of community living and opportunities for recreational and leisure-time activities
- Transportation options
- Public safety
- Social support
- Social norms and attitudes (e.g., discrimination, racism, and distrust of government)
- Exposure to crime, violence, and social disorder (e.g., presence of trash and lack of cooperation in a community)
- Socioeconomic conditions (e.g., concentrated poverty and the stressful conditions that accompany it)
- Residential segregation
- Language/Literacy
- Access to mass media and emerging technologies (e.g., cell phones, the Internet, and social media)
- Culture

Examples of physical determinants include:

Physical Determinants of Health

- Natural environment, such as green space (e.g., trees and grass) or weather (e.g., climate change)
- Built environment, such as buildings, sidewalks, bike lanes, and roads
- **Worksites, schools, and recreational settings**
- **Housing and community design**
- Exposure to toxic substances and other physical hazards
- Physical barriers, especially for people with disabilities
- Aesthetic elements (e.g., good lighting, trees, and benches)

Source: Healthy People 2020. *Determinants of Health*. <http://www.healthypeople.gov/2020/about/foundation-health-measures/Determinants-of-Health>. Access Date: June 22, 2015

A playground at the Lee Kornegay Intermediate School would change the physical environment by providing facilities for active recreation during school and a facility for community activities and active recreation during non-school hours. The planned trail could provide an opportunity to enhance the built environment by improving a current “cattle track” with signing, safety facilities, and a stable surface for walking, running, cycling and other activities.

The World Health Organization's (WHO) primary role is to direct and coordinate international health within the United Nations' system. WHO supports countries as they coordinate the efforts of multiple sectors of the government and partners to attain their health objectives and support their national health policies and strategies⁸. Who identifies ten determinants of Health. These determinants include the built environment, social support networks, social and economic Environment, and individual characteristics and behaviors. A playground and planned trail at the School would affect the social and economic environment, the built environment, and contribute to building richer social support networks. By providing more opportunities for individual play, recreation, and family and community activities, the playground and trail could affect individual behaviors.

WORLD HEALTH ORGANIZATION

DETERMINANTS OF COMMUNITY & INDIVIDUAL HEALTH

The Social And Economic Environment - Availability and access to community organizations and employment affects all aspects of our physical and mental health.

The Built Environment - How we live affects our health. Communities designed to encourage physical activity result in lower rates of obesity and diseases related to physical inactivity. Physical activity increases the production of certain hormones and chemicals that have been shown to prevent depression and other mental illnesses. Communities that are designed to encourage interactions between their residents also help to foster a sense of community. A sense of community has been found to increase individual well being. Communities that are designed to be safe can prevent accidents that can cause personal injuries.

Income And Social Status - Higher income and social status are linked to better health. The greater the gap between the richest and poorest people, the greater the differences in health.

Genetics - Inheritance plays a part in determining lifespan, healthiness and the likelihood of developing certain illnesses. Personal behavior and coping skills – balanced eating, keeping active, smoking, drinking, and how we deal with life's stresses and challenges all affect health.

Social support networks – Greater support from families, friends and communities is linked to better health. Culture- cus-

toms and traditions, and the beliefs of the family and community all affect health.

Individual Characteristics & Behaviors - How a person behaves has a direct impact on individual and community health. A person that engages in high risk activities can endanger the health of themselves and others.

The Physical Environment – Safe water and clean air, healthy workplaces, safe houses, communities and roads all contribute to good health. Employment and working conditions – people in employment are healthier, particularly those who have more control over their working conditions.

Education- Low education levels are linked with poor health, more stress and lower self-confidence.

Health services - Access and use of services that prevent and treat disease influences health

Gender- Men and women suffer from different types of diseases at different ages.

SOURCE: World Health Organization. Health Impact Assessment. <http://www.who.int/hia/evidence/doh/en/> Access Date: June 19, 2015.

Working with the US Department of Health and Human Services Partnership For Action, the Arizona Department of Health (ADHS) is working to educate the community about factors that influence health. ADHS supports the Partnership for Action focus on recognizing the “underlying risk factors that contribute to health disparities (that) are the result of where we live, learn, work and play.” The Partnership further states that “Eliminating health disparities will necessitate behavioral, environmental, and social-level approaches to address issues such as insufficient education, inadequate housing, exposure to violence, and limited opportunities to earn a livable wage.⁹” A playground at the Middle School would enhance students opportunity to play, and enhance opportunities for the entire community to be physically active during non-school hours.

RELATIONSHIP OF A PLAYGROUND TO DETERMINANTS OF HEALTH

Currently, Lee Kornegay Intermediate School students do not have access to a playground. The school includes a softball field, unmaintained basketball courts and abandoned racquetball courts. A playground could provide an opportunity for unstructured play for middle school children ages six through nine. This project would have an effect on the following Determinants of Health:

Built Environment - A playground and associated facilities will allow middle school students an opportunity to be physically active. Currently, students are not in physical education classes daily, and there are no facilities to encourage unstructured active play during school recess and lunch at the school. The CDC recommends a minimum of one hour each day of physical activity for children ages 6-8.¹⁰ The future trail could provide enhancements to the current “cattle track” that runs east of the playground and adjacent softball field. Trail improvements, including signing, stabilized surfaces, and connections to other trails within the area could provide a place for the entire community to walk, run and cycle.

Social Support Networks - Miami offers a swimming pool in its downtown, a ballfield, and a linear park along US 60. The pool is only available during the summer. During non-school hours, a well-designed playground at the school could provide a place for family activities, for students to socialize, and for community events. The future trail could support community activities such as running and walking clubs.

Social and Economic Environment - A well designed playground can enhance the quality of life for Miami and Claypool residents and make the area a more attractive place to live. Many people working at the mines and in the Miami Claypool area live in the east Phoenix metropolitan area and commute. Enhancing the quality of life in the area could entice new residents to Miami and Claypool. The future trail could be the locus of 5K runs and other events that attract people to Miami who would spend money at local businesses.

Individual Characteristics and Behaviors - The school playground would be located outside of the Miami Municipal limits in unincorporated Claypool. County parks or recreation facilities are not located in Claypool. The availability of a close, well designed playground and future trail could provide a place and destination that encourages people to walk and engage in physical activity.

AFFECT ON VULNERABLE POPULATIONS

The playground will be available for use by the entire community. Construction of the playground would occur on land that is presently vacant, unprogrammed, and not used by other groups. Construction of the playground would not adversely affect vulnerable populations. Miami does not offer public transit or a local transit service. As a result, the benefit of this playground be more available to those living within walking distance of the school or those who have access to the playground outside school hours.

Determination of Health Impact Assessment Relevance

A Health Impact Assessment (HIA) is warranted for this project. The proposed playground will affect several factors that are identified as determinants of health by multiple organizations and consequently, could influence the overall health of children attending the Lee Kornegay Intermediate School and residents of the Miami Claypool area. These factors include the built environment, influencing how people and school children play, social support networks and the economic environment within the Miami and Claypool areas, and ultimately individual behaviors within Miami and Claypool.

4. Scoping

INTRODUCTION

This chapter establishes the framework for understanding the scope of this Assessment. In this chapter, information sources about the communities of Miami and Claypool are identified, and a Pathway Diagram is presented. The Pathways Diagram helps determine the range of health related topics relevant to the construction of a playground that will be evaluated in this assessment. This chapter also identifies specific groups that will be included in the Assessment process and the specific outreach techniques that will be used to engage them.

RELEVANCE OF THIS PROJECT TO COMMUNITY HEALTH

A new playground and a planned trail at the Lee Kornegay Elementary School provides a variety of opportunities to influence community health. Stakeholders identified direct benefits and a variety of health determinants that could result from the construction of a playground and trail. These determinants were then connected to key health indicators using a pathways diagram. (Figure 3: Pathways Diagram)

ABOUT

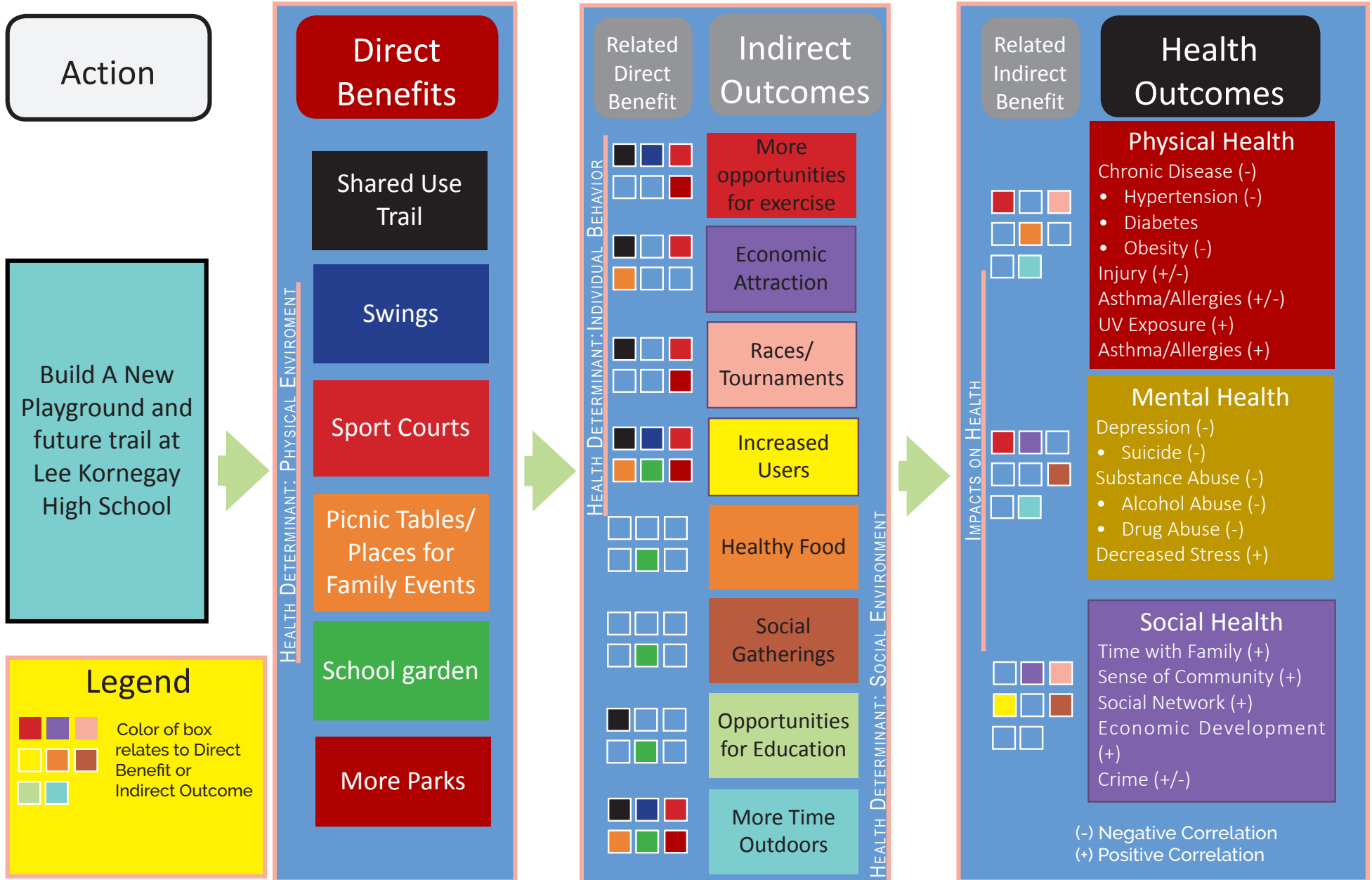
PATHWAY DIAGRAMS

A Pathway Diagram maps out the causal pathways by which health effects might occur. In general, this approach describes effects directly related to the proposal (such as changes in air emissions) and traces them to health determinants (such as air quality) and finally to health outcomes (such as asthma). The first step in the framework is typically a determinant of health, such as air pollution, traffic, employment, or noise. Logic frameworks can be used as part of stakeholder engagement to develop a shared understanding of how a project will develop and the outcomes that can be expected.

Source: Improving Health in the United States: The Role of Health Impact Assessment. National Research Council (US) Committee on Health Impact Assessment.

Washington (DC): National Academies Press (US); 2011. <http://www.ncbi.nlm.nih.gov/books/NBK83540/>. Access Date: June 25, 2015.

Figure 3: Pathways Diagram



The direct benefits from a new playground impact the physical environment. The Physical Environment is a determinant of health. The impacts from a playground and planned trail could include the availability of a variety of specific facilities, including a walking trail, sports courts, a school garden, a family gathering space, and venue for educational programs and activities. The Steering Committee identified changes to the Individual Behavior and Social Environment as indirect or intermediate outcomes from a new playground and planned trail. Changes to individual behavior could include increased levels of exercise for students and the broader community, spending more time outdoors, and access to healthy food and healthier eating habits that could developed as a result of a school garden planned as part of the playground. Changes to the social environment include increased opportunities for social interaction, enhanced social networks that could grow from informal and unplanned face to face interactions at the playground, and job opportunities and community pride that could result from events that could be held at the playground and along the trail (such as races and fairs) and the economic activities they generate.

HEALTH OUTCOMES

The Physical Environment, Social Environment and Individual Behavior health determinants are connected to the following health outcomes:

- | Physical Health | Mental Health | Social Health |
|---|--|--|
| <ul style="list-style-type: none">• Obesity• Chronic Disease• Hypertension (blood pressure)• Injuries/Safety• Exposure to Sunlight and Air• Asthma/Allergies | <ul style="list-style-type: none">• Suicide• Substance Abuse• Depression | <ul style="list-style-type: none">• Time with Family• Sense of Community• Economic Development |

Based on the Pathways Diagram, a playground and planned trail could have effects on physical, mental and social health. By providing a place for children and adults to physically active, the playground could have a positive effect on reducing obesity and obesity-related chronic diseases.

PHYSICAL HEALTH

Chronic Diseases are long-lasting conditions that can be controlled but not cured and include, but are not limited to diseases such as diabetes, obesity and overweight, hypertension (high blood pressure) and heart disease. As described by the Centers for Disease Control, chronic disease is the leading cause of death and disability in the United States. It accounts for 70% of all deaths in the U.S., which is 1.7 million each year⁴¹.

A playground could also increase exposure to sunlight and air and negatively impact other chronic diseases such as Allergies, and Asthma. The playground could have a positive or negative affect on injuries. Including a school garden in the playground could provide opportunities for healthy food and education about nutrition. By increasing the amount of time outside, a playground could impact chronic diseases, such as asthma and allergies.

MENTAL HEALTH

A playground could increase physical activity for Lee Kornegay Intermediate School students and the community. The strongest evidence suggests that physical activity and exercise probably alleviate some symptoms associated with mild to moderate depression. The evidence also suggests that physical activity and exercise might provide a beneficial adjunct for alcoholism and substance abuse programs; improve self-image, social skills, and cognitive functioning; reduce the symptoms

of anxiety; and alter aspects of coronary-prone (Type A) behavior and physiological response to stressors¹².

SOCIAL HEALTH

Additionally, by providing a place where informal interactions can occur, a playground could reduce social isolation and contribute to positive mental health. Individuals who lack social connections or report frequent feelings of loneliness tend to suffer higher rates of morbidity and mortality, as well as infection, depression, and cognitive decline¹³.

Public spaces, if properly managed, can provide opportunities for community activities that can enhance resident pride in place, and support events that bring visitor dollars into a community. The playground and trail could be a venue for community, school, and civic events such as races (along the trail), family celebrations such as birthdays and other events, and community events, such as a 4th of July celebration.

SPECIFIC HEALTH OUTCOMES EVALUATED IN THIS ASSESSMENT

Based on community opinion and the pathways diagram, the specific health areas of focus in this assessment are Physical Health indicators (chronic diseases such as obesity, diabetes, heart disease, asthma, and allergies, Hypertension), Mental Health (suicide, depression), and Social Health (economic Impacts).

DATA RESOURCES

The Lee Kornegay School population is from the Miami Unified School District. The School District includes a geographic area that is larger area than Miami. The Miami School District includes the town of Miami, and portions of Gila County including unincorporated Claypool, and the City of Globe. In addition to the town of Miami and the City of Globe, the incorporated communities of Hayden, Payson, Star Valley and Winkleman are located within Gila County as well as includes portions of the Apache Reservation. Payson is a resort and retirement community with a substantially different demographic and revenues than many other incorporated areas. Globe is the county seat and a regional hub and is economically more diverse than Miami. As a result, Gila County data may only generally represent the School District population.

Most social, demographic, and health data sources are only available for Gila County.

The following data sources were identified for this project:

- Cobre Valley Health Needs Assessment (2013)
- Gila County Community Health Assessment (2012)
- U.S. Census 2010 data
- American Community Survey Data
- Robert Wood Johnson Foundation County Health Rankings and Road maps
- Arizona Department of Health Services/Bureau of Health Statistics reports on community and individual health
- Centers for Disease Control Reports on Health
- Public Available Studies on Health
- Lee Kornegay Intermediate School 2014-2015 Health Screening

PUBLIC ENGAGEMENT

Engaging the community for this Assessment was accomplished through:

- A Steering Committee
- On-line outreach
- In School participation

Public engagement is detailed in the public engagement plan located in Appendix B. The Steering Committee included representatives from the city of Miami, Gila County, Tri-city Fire, Lee Kornegay Intermediate School, the student body, local health providers, and the mines. The stakeholder committee met three times during the development of this HIA.

On-line outreach was through mysidewalk®.com. The website included videos describing the health benefits of a trail, and explaining community health benefits. Community members were informed of the site via notices sent home with every middle school student, fliers distributed within the community by Steering Committee Members, and links on the school district web and Facebook pages.

In school participation was through mysidewalk® during computer classes.

TIME FRAMES AND POTENTIAL USEFULNESS OF THIS HIA

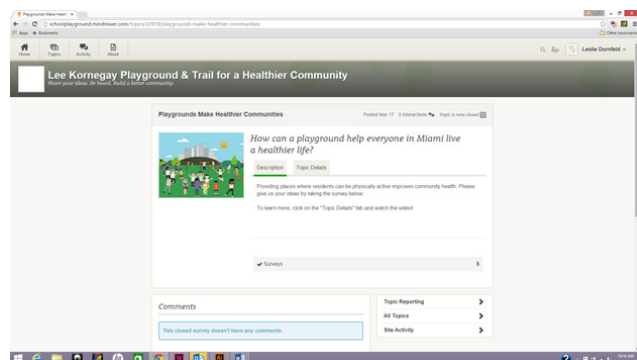
This Health Impact Assessment is not required for a funding deadline. However, it will be used to support grant requests and partnerships with the city and county for funding and management of the playground and planned trail.

Miami HIA Steering Committee

- Sherry Dorathy, Miami USD 40 Superintendent
- Neal Jensen, Cobre Valley Regional Medical Center
- Evelyn Vargas, Cobre Valley Regional Medical Center
- David Pastor, Lee Kornegay School Principal
- Mary Gooday, MUSD
- Melanie Homec, Arizona Department Of Health Services
- Anissa Jonovich, Arizona Department Of Health Services
- Bethany Cheney, Gila County Health Department
- Nick Renon, Tri-City Fire
- Darryl Dalley, Mayor Town of Miami
- Alexis Followill, Student MUSD
- Lisa Foster, Capstone Pinto Valley Mine



The Miami Steering Committee . Photo Credit: PLAN*et



A website was designed to encourage widespread community input into the HIA.

5. Assessment

INTRODUCTION

The Assessment includes data and findings that describe the current health of the community, and how a playground could affect community health. This chapter includes a variety of health information related to the project area and Gila County.

SOCIO-ECONOMIC OVERVIEW

The Leek Kornegay School District includes the eastern portion of the Town of Miami and the unincorporated areas of Claypool, Central Heights/Midland City, Roosevelt, and a portion of western Globe. (Figure 4: School District Boundaries)

THE TOWN OF MIAMI

While the school district serves a larger area than the Town of Miami, Miami residents account for a large portion of students at Lee Kornegay Intermediate School (the School District estimates more than half its students live within the town of Miami.). Miami was founded in 1907. With high quality copper deposits in nearby Globe dwindling, and new processes that made it more profitable to extract copper from ore, the Miami Copper Company initiated activities along the Miami Wash/Pinto Creek area in 1906. Anticipating the need for labor associated with mining activities, Cleve Van Dyke purchased the area that is now downtown Miami. He started selling lots in October 1909; two days after the newly constructed Gila Valley, Globe & Northern railroad, built to serve the Globe and Miami area mines, first arrived in Miami. By the 1910 federal census, 1,390 residents lived in the Miami. Miami continues to be a mining town through today.

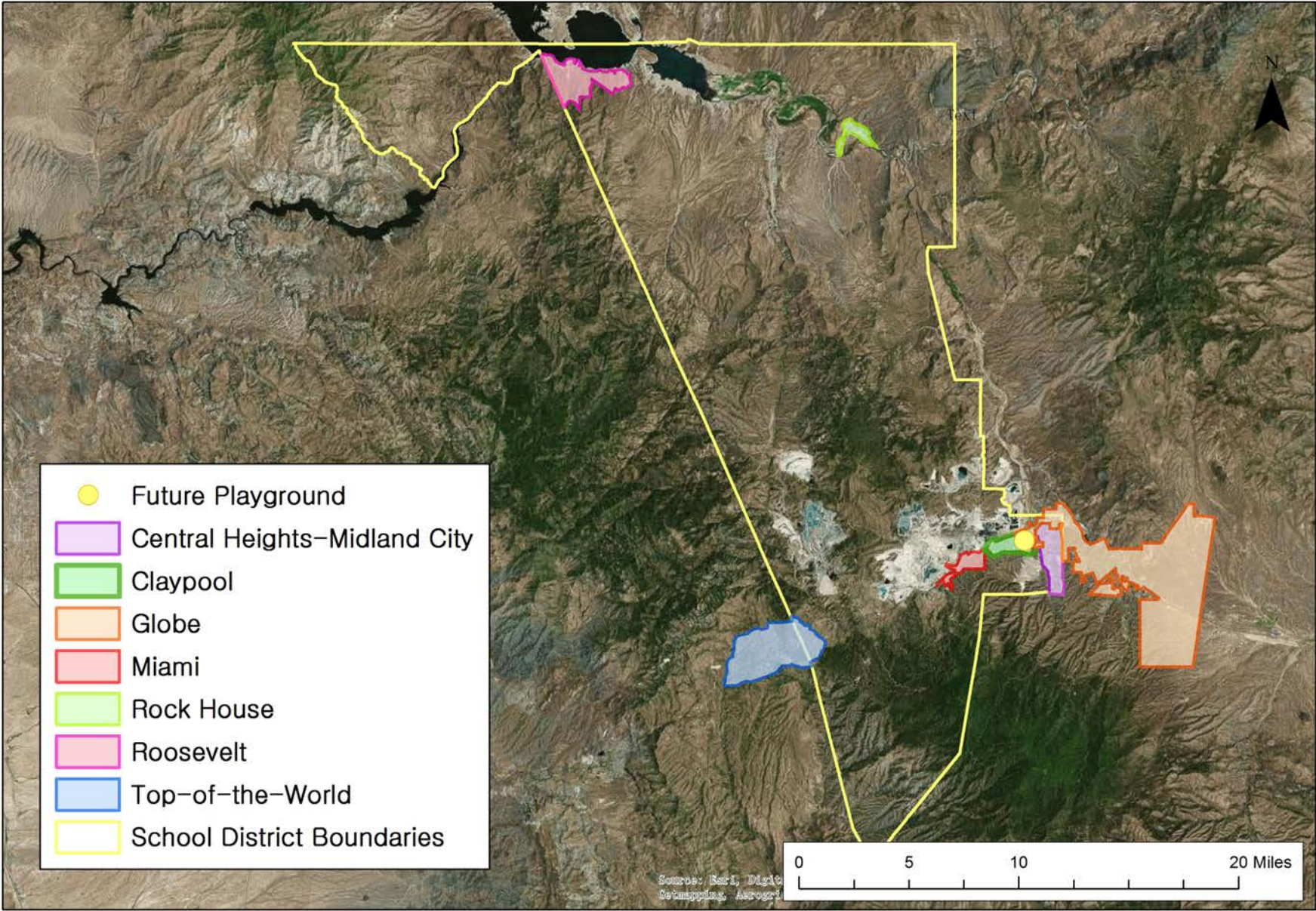
UNINCORPORATED CLAYPOOL

Claypool is an unincorporated area located between the Town of Miami and the City of Globe in unincorporated Maricopa County. The 2010 Census reported 1,538 residents. Approximately 15% of all Claypool residents were between the ages of 5 and 14 years old in 2010, and 45% of all residents were over 62 years old.

CENTRAL HEIGHTS/MIDLAND CITY

Central Heights/Midland City is an unincorporated area located east of the school and includes 2,524 people. Children between the ages of 5 and 14 years old account for approximately 14% of all residents and 43% of all residents are over 62 years of age.

Figure4: School District Boundaries



THE MIAMI/CLAYPOOL/MIDLAND CITY/ CENTRAL HEIGHTS COMMUNITIES

An open-pit copper mine spans the Miami Claypool border. An operating smelter is located in Miami and a rod mill is located in Claypool. Other commercial development in Miami includes some retail and commercial development in the town's downtown, along Sullivan Street, and along U.S. 60. A WalMart and Safeway Grocery Store are located in Claypool at the intersection of U.S. 60 and South Ragus Road. South Ragus Road is the entrance to the School District Property and is located approximately 2.5 miles east of historic Miami and just east of the town of Miami incorporated limits.

MIAMI SCHOOL DISTRICT

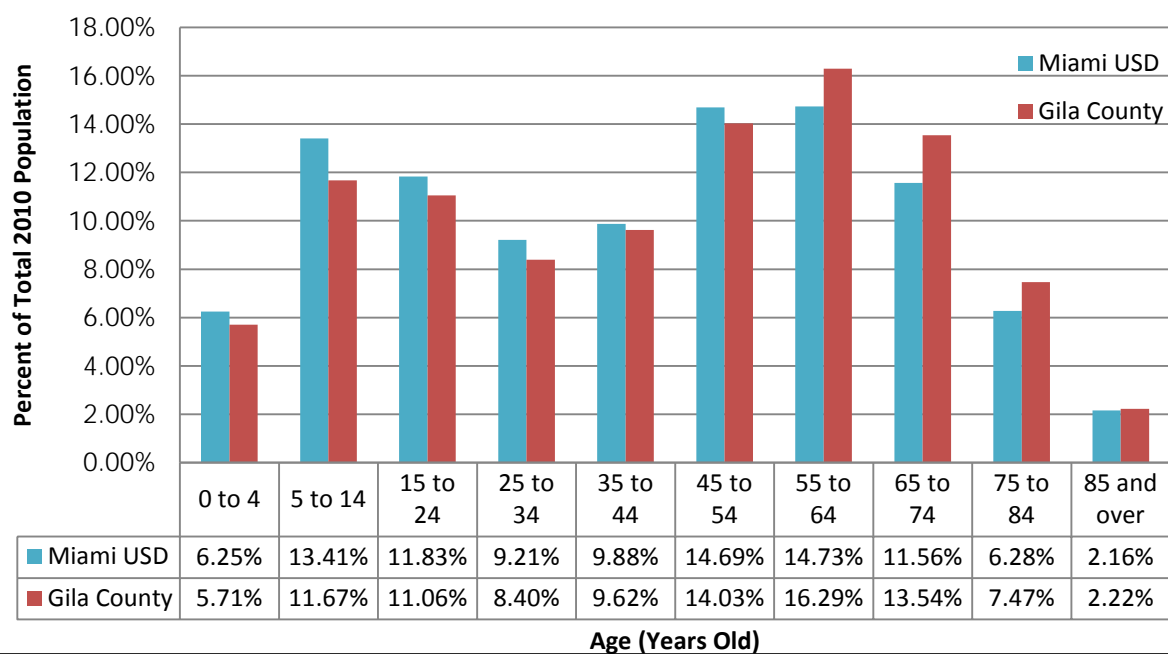
Population

The Miami Unified School District (Miami USD) is located in western Gila county, Arizona. This large, rural District includes the incorporated town of Miami, and unincorporated Claypool, Central Heights-Midland City, Roosevelt, Rock House, eastern of Top-of-the-World and the western part of the incorporated city of Globe. The total number of 2010 residents in the Miami USD is 7,500. The School District accounted for 14% of the total Gila County Population.

Age

Compared to Gila County, the Miami USD population is substantially younger with Gila County reporting larger percentages of over 55 years old residents than the school district. In fact, the median age of the county population at 47.9 years old is also substantially higher than Arizona as a whole, at 36.3 years old. While exact statistics are not available for the School District, the median age of residents falls within the 35 to 44 year old range, close to the state as a whole. (Figure 5: Miami School District 2010 Age Distribution.)

Figure 5: Miami School District 2010 Age Distribution



Source: 2010 Census

GILA COUNTY

Gila County is a predominantly rural county in central Arizona. The County encompasses an area of 4,752 square miles and is surrounded by 6 of the 15 counties in Arizona. These include Coconino, Navajo, Graham, Pinal, Maricopa and Yavapai counties. Additionally, Gila County encompasses three Native American Communities living on the Apache Reservation in eastern Gila County, the San Carlos Apache, a portion of the White Mountain Apache, and the Tonto Apache. The two largest populated areas in Gila County are Payson and Miami areas.

The geography of Gila County includes deserts, forests, mountains and several lakes with elevations ranging from 2,000 – 7,000 ft. Land ownership in Gila County is unique in that 3.7% of the county is held in private landownership. The remaining land ownership is divided among the U.S. Forest Service, Apache Tribes, Bureau of Land Management and the State of Arizona. In 2010 the county's population was estimated to be 53,514¹.

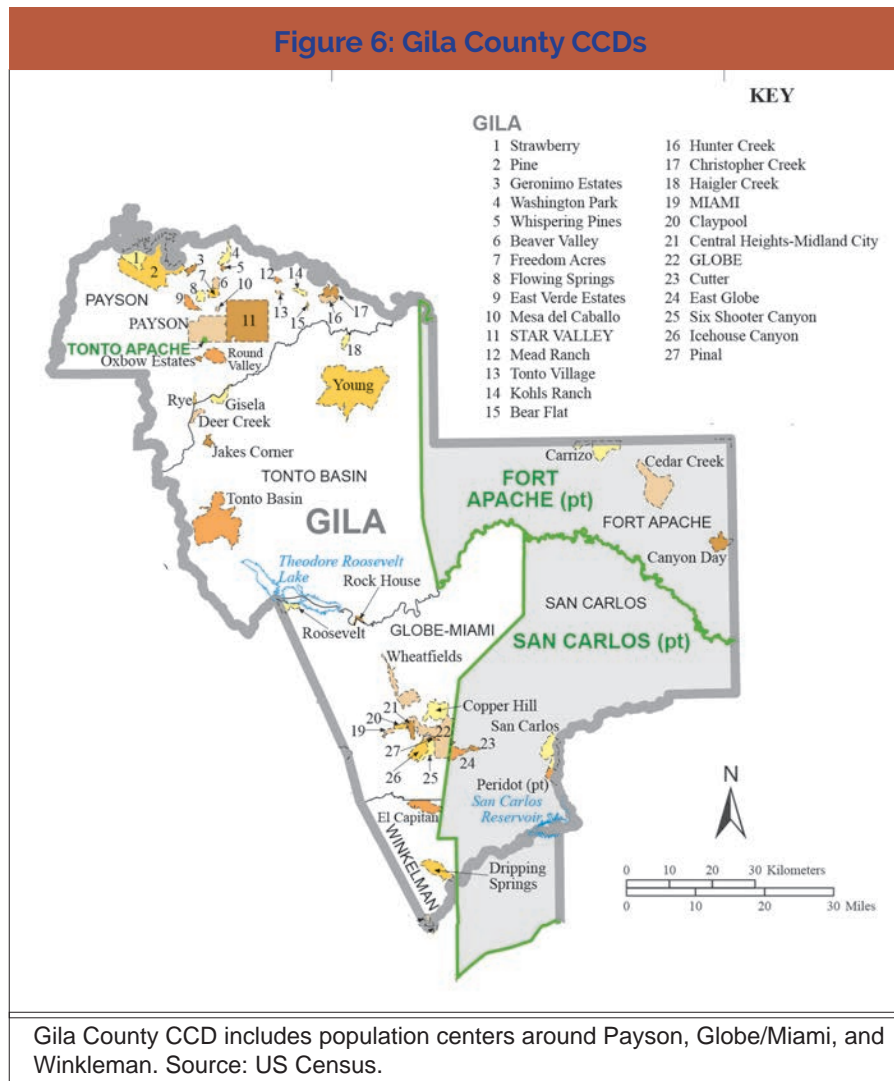
The U.S. Census divides Gila County into six CCD (County Census Districts). These include Payson, Fort Apache, Globe-Miami, San Carlos, Tonto Basin, and Winkleman. The Lee Kornegay Intermediate School is located within the Globe-Miami CCD. The largest CCDs are Payson and Globe-Miami. Together, these two CCDs account for 78% of the total Gila County Population. (Figure 6: Gila County CCDs.)

NORTHERN GILA COUNTY

Northern Gila County includes Payson, Star Valley, and a variety of unincorporated rim communities including Kohls Ranch, Pine, Tonto Village, and Christopher Creek. These communities are mostly growing retirement and vacation communities located on the Mogollan Rim. (The Rim is an escarpment that rises above the desert floor to over 4,500 feet and forms the southern boundary of the Colorado Plateau). Payson and Tonto Basin Census County Divisions (CCD) are within northern Gila County. The major industries in this area of the county are ranching and forestry.

The Payson CCD accounts for 44% of Gila County Population. Overall, these communities include an older active retirement population. Nine percent of the Payson CCD 2013 population is between the ages of 5 and 14, as compared to 14% in the Miami School District and 11% for the county as a whole. The Payson CCD also has more residents over the age of 62 (36%) than

1 U.S. Census.



Gila County as a whole (26%). While no income numbers for the Payson CCD are readily available, Payson 2010 annual median household income is \$44,661.00, approximately 12% higher than that of Gila County as a whole, and higher than that of Miami (\$40,286.00), Claypool (\$38,750.00) and Central City/Midland Heights (\$32,803.00) residents. Because Payson accounts for almost 1/3 of county residents and 2/3 of the Payson CCD residents, it is likely that overall, Payson is a comparatively more affluent community than those within the school district and Globe/Miami CCD. These differences between the Payson and Globe/Miami Areas should be considered when evaluating County-wide Data.

SOUTHERN GILA COUNTY

Southern Gila County (the Copper region) includes the Miami School District. This area is comprised of the Fort Apache, Globe-Miami, Winkleman, and San Carlos CCDs. The leading employment sector in southern Gila County is agriculture/forestry/fishing and hunting and mining which employs over 20% of the population. Although employment related directly to mining has declined from previous decades, it remains a vital staple of the local economy.

Southern Gila County is home to one of only three smelters in the entire United States. This processing facility is key to the entire copper mining industry in Arizona and the southwest.

Services related jobs represent over 50% of the county's economy. In terms of percentage, the fastest growing sectors of the local economy include agriculture/forestry/fishing, wholesale trade, and education/healthcare/social assistance. Major employers in Southern Gila County include Freeport-McMoRan, Capstone, BHP, Cobre Valley Medical Center, Globe School District and Gila Community College. In total, 19,328 people live in southern Gila County.

The City of Globe is the county seat, and the largest city in the county. The City of Globe had a 2012 population estimate of 7,457. The Town of Miami had a 2010 census population of 1,837. The 2012 population estimate for the Town of Winkleman is 348. A primary portion of the San Carlos Apache Reservation is also located in southern Gila County.

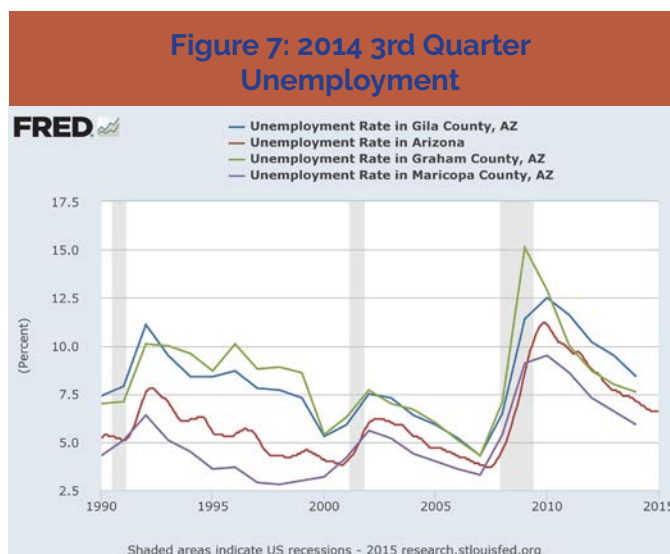
Healthcare Facilities

Gila County has three hospitals. The Northern region is served by Payson Regional Medical Center in Payson. The Southern region is covered by Cobre Valley Regional Medical Center in Globe. Indian Health Services serves the San Carlos Apache Community as well as other Native American Communities within the region. Gila County has six Long Term Care Facilities. Gila County has no Community Health Centers.

Employment and Income

In 2013, the U.S. Census estimates 21.6% of Gila County residents live in poverty. Poverty estimates are not available for the Miami School District.

Unemployment in Gila County is consistently higher than the state as a whole, and generally higher than in the neighboring Maricopa and Graham Counties. (Figure 7: 2014 3rd Quarter Unemployment.) While county has higher than state-average unemployment, employment trends generally mirror that of the state. The U.S. Census 2013 American Community Survey estimates that approximately one-quarter of



Source: Federal Reserve Bank of St. Louis. <https://research.stlouisfed.org/fredgraph.jpg?> Access date June 23, 2015.

Gila County residents over 16 worked at least part time during 2013¹⁴. Within the Globe-Miami CCD, 74% of all households included more than one worker in the 2012-2013 year¹⁵. A 2013 Gallup Poll found that employed people suffer less depression than those that are not employed, and seasonally unemployed or underemployed workers also suffer more depression than those that are employed full time. (Figure 8: Depression Rates by Employment Status.)

Weekly wages in Gila County are within the median wages for Arizona counties. Annual Gila County household income, however, is 20% lower than for Arizona as a whole, reflective of a high percentage of seasonal employment. Median annual 2013 Globe-Miami CCD earnings are estimated to be \$29,384; higher than Gila County as a whole (\$28,940) and lower than Graham County (\$32,367)¹⁶. (Figure 9: Weekly 2014 Wages Arizona Counties.)

Gila County has the 3rd highest percentage of employment in the mining and manufacturing industries of any county in the state. In 2014 approximately 8% of Gila County employment was in the mining industry (down from 10% in 2011). Within the Globe Miami CCD, 11% of the labor force was in the mining industry¹⁷, making this employment area the second largest in the CCD (behind office/administrative occupations). (Figure 10: Percent of Employment in Mining/Manufacturing.)

Mining is associated with a variety of respiratory diseases including and not limited to chronic obstructive pulmonary disease, coal-workers pneumoconiosis, and asthma¹⁸. The Arizona Comprehensive Lung Disease Control Plan shows that Gila County has the highest rate of death in the State (68.6/100,000) due to Chronic Lower Respiratory Diseases (COPD); and also states that "occupational exposures can cause COPD independently of tobacco smoking¹⁹" Gila County has the 3rd largest percentage of Supplemental Nutrition Assistance Program

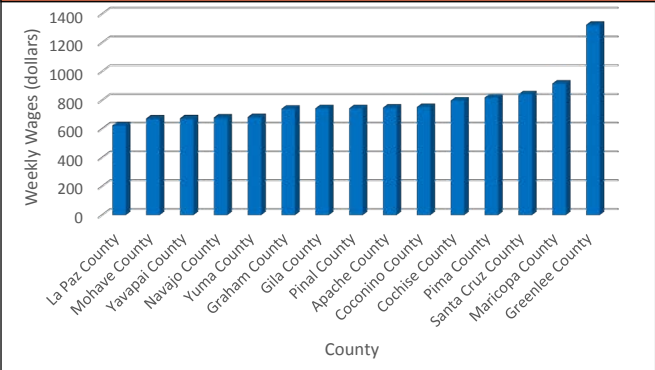
Figure 8: Depression Rates by Employment Status (2013)

	Depression rate
Not in workforce	16.6%
Unemployed	11.4%
Employed part time, want full time	10.6%
Employed part time, do not want full time	7.6%
Employed full time for employer	5.6%
Employed full time for self	5.1%

Jan. 1-July 25, 2013
Gallup-Healthways Well-Being Index

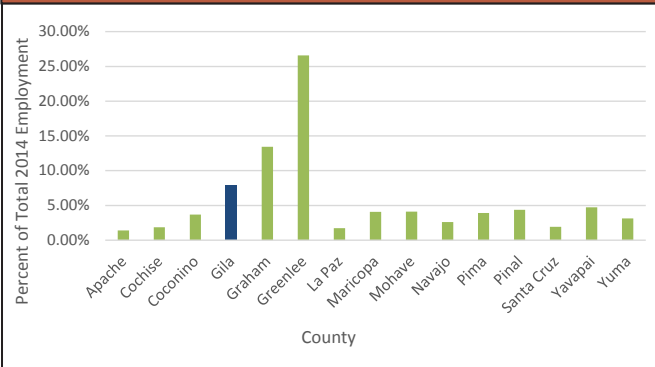
Source: Gallup Poll. <http://www.gallup.com/poll/164090/employment-linked-depression-free.aspx>, Access Date: July 3, 2015.

Figure 9: Weekly 2014 Wages Arizona Counties (3rd Quarter)



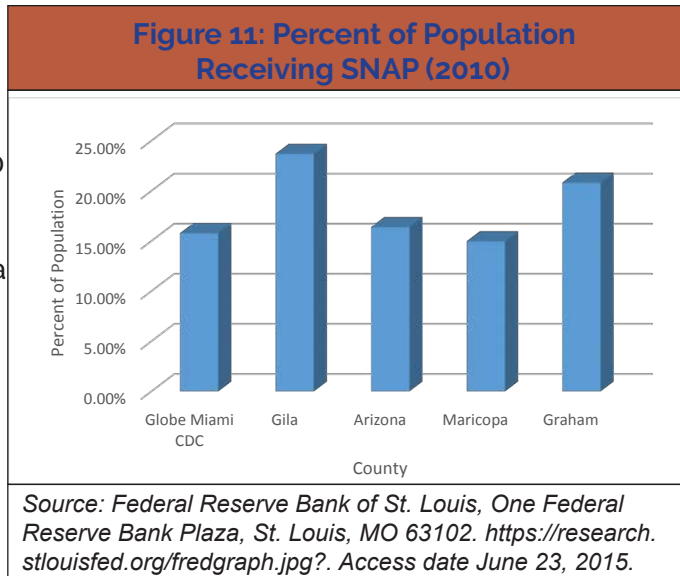
Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Figure 10: Percent of Employment in Mining/Manufacturing (2014)



Source: Arizona Office of Employment and Population Statistics

(SNAP) recipients in the State. (SNAP) is a cash assistance program that is designed to provide nutrition assistance to low income families. (Figure 11: Percent of Population Receiving SNAP.) The proportion of SNAP recipients in 2010 in Gila County (latest date for which statistics are available) is higher than that of neighboring Maricopa and Graham Counties and than Arizona as a whole. Within the Globe-Miami CCD, approximately 16% of all households were receiving food stamps in 2013²⁰. Furthermore, while households with children under 18 years old account for 27% of all households in this CCD, they account for more than half (56.2%) of all CCD residents receiving SNAP. (The Globe-Miami CCD does not include tribal areas, which typically have a higher percentage of poverty than non-tribal areas.) While results are mixed, some studies based on surveys of California residents receiving SNAP show obesity is prevalent in 30% more people receiving SNAP than those not on food assistance²¹. This could be accounted for by other factors related to education and access to food. Another study found younger female SNAP recipients more likely to be obese than non-snap recipients²².



HEALTH REPORTING

Limited health data for the school district, the town of Miami, the unincorporated areas of Claypool, Top of the World, or Roosevelt is available. Some statistics regarding height and weight from the Miami School District 2014-2015 school year screenings was made available for this study. Other study resources available include the 2012 Gila County Community Health Assessment, the 2013 Cobre Valley Regional Medical Center Community Health Needs Assessment and 2013 data from the Bureau of Health Statistics. To solicit community information, a website (www.schoolplayground.mindmixer.com) was created.

ARIZONA DEPARTMENT OF HEALTH SERVICES/BUREAU OF PUBLIC HEALTH STATISTICS

Gila County has the third highest rate of death from all causes of all Arizona Counties. Specifically, the county has the third highest rates of death from chronic liver disease and accidents than all Arizona Counties and the second highest rates of death from chronic lower respiratory diseases, as well as suicide, than all Arizona counties.

Gila County has a chronic disease morbidity rate of 7,197.9 per 100,000 persons, higher than all Arizona Counties. In comparison, the morbidity rate for Arizona is 4,503.7 per 100,000 persons²³. (Fig-

ure 12: Gila County Mortality and Morbidity Factors (2013)). Chronic Diseases include heart disease, stroke, cancer, diabetes, obesity, and arthritis and are among the most common, costly, and preventable of all health problems.

The county also has statistically higher rates of adult asthma, bacterial pneumonia, chronic obstructive pulmonary disease, congestive heart failure, and hypertension than the rest of the state. Death from unspecified drug and alcohol use is also higher in Gila County than in Arizona as a whole. According to the Arizona Department of Health Services (ADHS) Bureau of Public Health Statistics, in 2013 Gila County had 10,843 years of potential life loss for every 100,000 in population, compared to 6,850 for the state of Arizona²⁴.

Gila County is ranked second in highest number of residents with congestive heart failure of the 15 counties in the state of Arizona²⁵.

Figure 12: Gila County Mortality and Morbidity Factors per 100,000 Persons (2013)

Gila County	Indicator	Per 100,000	Rank in AZ	Main Cause
Mortality	All Death	898.5	3	
	Chronic liver disease	30.4	3	Alcohol abuse (Hopkins, 2015)
	Chronic Lower Respiratory Diseases	68.9	2	Tobacco smoke, outdoor air pollution (WHO, 2015)
	Intentional Self-harm(-suicide)	33.9	2	
	Accidents	86.4	3	
Morbidity	Adult Asthma	362.1	5	Heredity, Gender, Obesity (AAFA, 2005)
	Bacterial Pneumonia	420	2	Immune system (American Lung Association)
	Chronic Diseases	7197.9	1	Lack of exercise or physical activity, poor nutrition, tobacco use, and drinking too much alcohol (CDC, 2014)
	Chronic Obstructive Pulmonary Disease	1455.5	2	Tobacco smoke (National Institutes of Health, 2013)
	Congestive Heart Failure	219.7	2	Coronary artery disease, Alcohol abuse. (Kulick, 2014)
	Hypertension	610.7	1	Unhealthy food, alcohol, lack of exercise, obesity (HO, JM, & al., 2006)
	Vector Borne Zoonotic	30.4	1	Sanitation, drinking water and housing (WHO, 2014)
	Alcohol Use	1,602.7	4	
	Unspecified Drug Use	383.8	2	
	<i>Source: Bureau of Public Health Statistics, 2013</i>			

ROBERT WOOD JOHNSON COUNTY HEALTH RANKINGS AND ROAD MAPS

The Robert Wood Johnson Foundation reports annually on County Health indicators. The 2015 County Health Rankings and Road maps Report, which uses data from a variety of reputable sources such as the Behavioral Risk Surveillance System²⁶ and the National Center for Health Statistics²⁷, ranks Gila County 13th among the 15 Arizona Counties for rate of premature death; and last among all Arizona Counties for quality of life. Quality of life is based on a variety of factors including low birth weight, general health, and number of poor physical and mental health days (reported). (Figure 13: Gila County Health Ranking Summary).

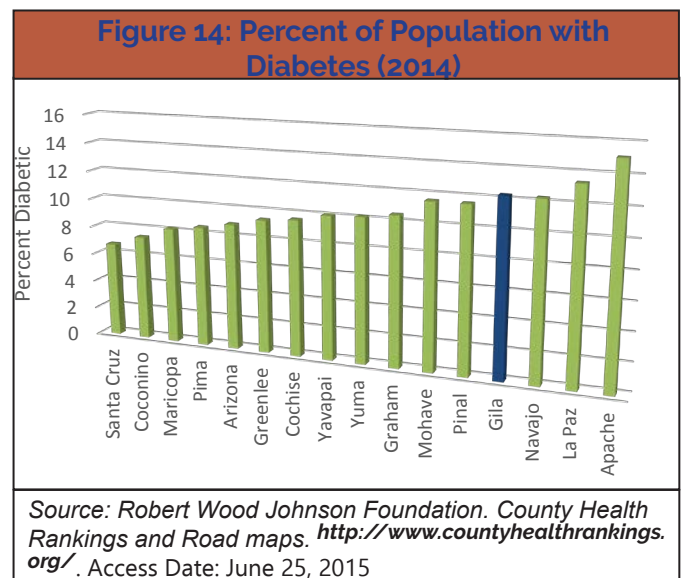
The report also found that Gila County reported the 4th highest rate of diabetes of all Arizona Counties in Arizona, and that Gila County has a higher percentage of population with diabetes than Arizona as a whole. (Figure 14: Percent of Population with Diabetes (2014).) The cause of Type 1 Diabetes is not known, but it may include genetic risk factors and environmental factors. People with Type 1 diabetes must take insulin every day to live. There is no known way to prevent or cure Type 1 diabetes, but it can be controlled by keeping blood glucose (sugar) levels within a normal range.

Type 2 diabetes is the most common form of diabetes. In Type 2 Diabetes, the body either doesn't make enough insulin or can't use its own insulin as well as it should. The risk of having Type 2 diabetes increases as a person gets older. The cause of Type 2 Diabetes is largely unknown, but genetics and lifestyle clearly play roles. Type 2 diabetes has been linked to obesity, genetic risk factors, and inactivity. Some racial and ethnic groups are at higher risk for Type 2 diabetes. These include American Indians, African Americans, Hispanics/Latinos, Asian Americans and Pacific Islanders. There is no known way to cure Type 2 diabetes, but it can be controlled by keeping the level of glucose (sugar) in the blood within a normal range²⁸.

Figure 13: Gila County Health Ranking Summary

Health Outcomes	15
Length of Life	12
Quality of Life	15
Health Factors	11
Health Behaviors	13
Clinical Care	4
Social and Economic Factors	11
Physical Environment	13

Source: Robert Wood Johnson Foundation. County Health Rankings and Road maps. <http://www.countyhealthrankings.org/>. Access Date: June 25, 2015



The County Health Rankings and Road maps report ranked Gila County 9th among Arizona's 15 counties with regards to length of life. One contributor to the county's high mortality rate is substance abuse. Gila County ranks 4th highest among Arizona counties for drug poisoning mortalities. (Figure 15: Drug Poisoning Death (2014)). Other factors that may account for the county's high death rate are high (in comparison to other counties) mortality rates due to injuries and motor vehicle crashes²⁹.

Gila County has a slightly higher percentage of population that is obese than Arizona as a whole, and the county's population that is obese reflects the median for obesity in Arizona. (Figure 16: Percent of Adult Population Obese).

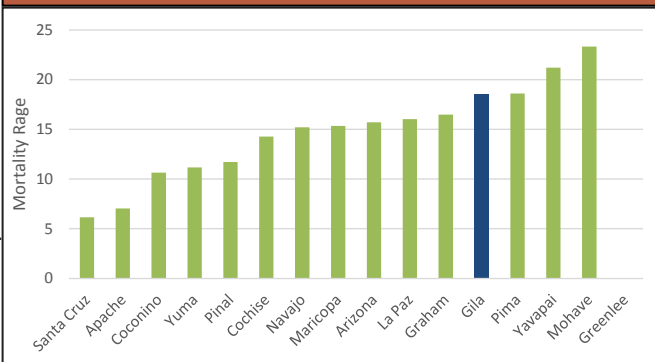
Both the 2015 and 2014 County Health Rankings put Gila County 15th out of 15 counties for overall health.

Gila County air quality (particulate matter (PM) 2.5 and less) is fifth cleanest in Arizona. The county is not required to prepare air quality plans and its air quality is acceptable according to federal standards. Poor air quality can contribute to lung disease and asthma.

The County Health Rankings also examine the food environment. The Food Environment ranking measures access to and acquisition of healthy, affordable food and is based on factors such as access and proximity to a grocery store; number of food stores and restaurants; expenditures on fast foods; food and nutrition assistance program participation; food prices; food taxes; and availability of local foods. The Gila County Food Environment ranking is 6.5 (0 being the worst, 10 being the best). The highest ranked county is Maricopa at 7.6.

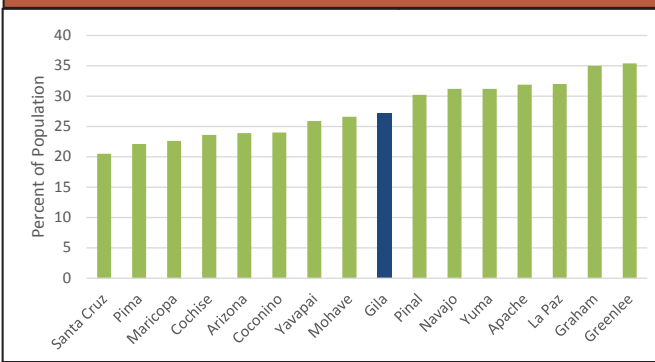
Using data from The National Diabetes Surveillance System, the CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau's Population Estimates Program, Gila County is found to have the fourth most inactive population, with 26% of all residents reporting no physical activity during the year.

Figure 15: Drug Poisoning Deaths Per 100,000 Pop. (2014)



Source: Robert Wood Johnson Foundation. County Health Rankings and Road maps. <http://www.countyhealthrankings.org/>. Access Date: June 25, 2015

Figure 16: Percent of Adult Population Obese



Source: Robert Wood Johnson Foundation. County Health Rankings and Road maps. <http://www.countyhealthrankings.org/>. Access Date: June 25, 2015

GILA COUNTY COMMUNITY HEALTH ASSESSMENT

In 2012, the Gila County Health Department conducted a Community Health Assessment (CHA) to measure physical, mental and social health status in Gila County. The CHA was developed based on input from focus groups and 387 paper and on-line surveys distributed through survey monkey.

The CHA found that the top perceived physical health concerns included diabetes, overweight, and hypertension. The top perceived mental health concerns included substance abuse, alcohol abuse, and prescription drug abuse. The top perceived social health concerns included substance abuse, teen pregnancy, and domestic violence. Comparatively, the top diagnosed physical health concerns were overweight, hypertension, and high cholesterol. The top diagnosed mental health concerns were depression, panic disorder, and alcohol abuse. The highest rate of impact of social health concerns were bullying, domestic violence, and teen pregnancy.³⁰ (Figure 17: Perceived and Diagnosed Mental Health Concerns)

Figure 17: Perceived and Diagnosed Health Concerns					
Physical Health Concerns		Mental Health Concerns		Social Health Concerns	
Perceived	Diagnosed	Perceived	Diagnosed	Perceived	Diagnosed
Diabetes	Overweight	Substance Abuse	Depression	Substance Abuse	Bullying
Overweight	Hypertension	Alcohol Abuse	Panic Disorder	Teen Pregnancy	Domestic Violence
Hypertension	High Cholesterol	Prescription Drug Abuse	Alcohol Abuse	Domestic Violence	Teen Pregnancy

Source: Gila County Community Health Assessment. 2012.

The CHA Gila identifies the main opportunities for improvement as:

- Access to Care (especially in the fields of mental and behavioral health and specialty medicine.)
- Access to healthy foods
- Prevalence of unhealthy body weight, diabetes and cardiovascular disease.

Top prioritized health concerns identified in the CHA are Diabetes, physical activity, access/cost for healthy food, hypertension, depression, coronary heart disease, stroke, cancer and anxiety.

COBRE VALLEY COMMUNITY NEEDS HEALTH ASSESSMENT (2013)

The Cobre Valley Community Needs Health Assessment uses data from the 2013 Gila County Health Assessment. Additionally, the Assessment includes an independent survey of its service area participants conducted from October 10th, 2013 to November 1, 2013. While this survey is not scientific; and there is no information on the number of surveys distributed or to whom the survey was distributed, 432 responses to the survey were received. Sixty-nine percent (69%) of the survey respondents were from the Cobre Valley Primary Service Area (Globe, Miami and Roosevelt). This survey found residents have a concern with a variety of health determinants, including and not limited to obesity and physical fitness, lack of education about healthy lifestyles and, lack of personal responsibility.

SCHOOL HEALTH SCREENING

The Miami Unified School District completes annual health screenings of its middle school students. The screenings mostly focus on height and weight. The 2014-2015 school were used to determine BMI and examine the extent to which middle school students were overweight or obese. Figure 18: BMI Indices for Children and Teens shows BMIs that are considered healthy, underweight and overweight.

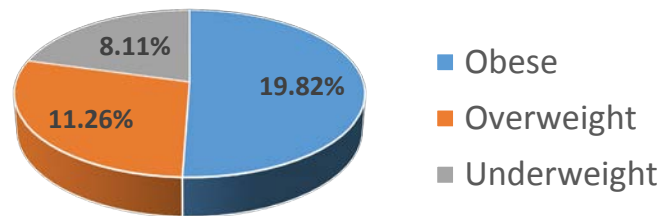
Based on the Health Screening Data, a slightly lower percent of children at Lee Kornegay are Obese than the adult Gila County Population. It should be noted that over eight percent of the children at Lee Kornegay are classified as underweight, based on BMI. This is higher than the 2007-2010 national average (7.1%) for adolescents ages two to 19 years old³¹. The percent of underweight children could reflect access to food, poverty, and other factors that affect body weight. The National Conference of State Legislators³² reports that 19.8 percent of Arizona children ages two through 19 are obese (BMI 95th percentile and over) and 16.9% are overweight (BMI 85th to 95th percentile and over). While obesity statistics for Arizona children ages five to nine are not available, Arizona ranks 25th (1 is the best) in the nation for childhood obesity in children ages 10 to 17³³. (Figure 19: Percent of Lee Kornegay Intermediate School Students Obese, Overweight, and Underweight.)

One interesting note with regards to the school screenings; a larger percentage of older students were obese than younger students. This may indicate that as students get older, they spend less time being active, and are more able to self-select food that may not be healthy.

Figure 18: BMI Indices for Children and Teens	
Weight Status Category	Percentile Range
Underweight	Less than the 5th percentile
Normal or Healthy Weight	5th percentile to less than the 85th percentile
Overweight	85th to less than the 95th percentile
Obese	Equal to or greater than the 95th percentile

Source: Lee Kornegay Intermediate School 2014-2015 Health Screening Data

Figure 19: Percent Of Lee Kornegay Intermediate School Students Obese, Overweight, and Underweight (2014-2015)



Source: Lee Kornegay Intermediate School 2014-2015 Health Screening Data

COMMUNITY INPUT

A website, advertised with fliers sent home with students, on the school website and Facebook page, and with fliers distributed throughout the community by stakeholders was used to solicit public comments. The website included videos about community health and the benefits of parks to community health. Visitors to the website were asked to share their ideas about what would make a playground right for the community. Response to the website was poor. However, the website did provide some input on the types of facilities desired by residents. These include:

1st Priority

- Swings
- Play Structure
- Shade Trees

2nd Priority

- Restrooms
- Grass Play Area

3rd Priority

- Water Fountain

4th Priority

- Benches
- BBQs
- Pond
- Tether Ball Area
- Outdoor Stage
- Climbing Bars

The survey also asked for ideas about what would make a great trail. Two people responded to this question. Their responses included (in priority order) a shared use trail for walking, bicycling and strolling that included benches and rest areas (most important), landscaping, shade, and lights.

HEALTH FACTORS CONSIDERED IN THIS ASSESSMENT

Based on the above research, the following factors were determined to be relevant to construction of a new playground and planned trail at Lee Kornegay Intermediate School.

Physical Health

- Obesity
- Chronic Disease
- Hypertension (blood pressure)
- Injuries
- Exposure to Sunlight and Air

Mental Health

- Suicide
- Substance Abuse
- Depression

Social Health

- Safety (Car Accidents)
- Time with Family
- Sense of Community

The following assessment is based on information presented earlier in this chapter.

POTENTIAL PUBLIC HEALTH IMPACTS OF A PLAYGROUND AND PLANNED TRAIL

The playground and planned trail has implications for community health.

IMPACTS OF THE PLAYGROUND AND PLANNED TRAIL ON PHYSICAL HEALTH

Chronic Disease - Chronic Disease is a long-lasting condition that can be controlled but not cured. Chronic illness affects the population worldwide. As described by the Centers for Disease Control, chronic disease is the leading cause of death and disability in the United States. It accounts for 70% of all deaths in the U.S., which is 1.7 million each year³⁴. Diabetes, obesity, asthma, addiction, hypertension, and heart disease are considered chronic diseases. Gila County has high morbidity rates for many chronic diseases that could be affected by physical activity including diabetes, hypertension, and obesity. Each of these is discussed below.

- **Obesity** - Obesity rates for middle school students in the Miami School District are comparable with Arizona averages. However, a higher percentage of older middle school students were found to be obese. The Centers For Disease Control recommend healthy lifestyle habits, including healthy eating and physical activity to lower the risk of becoming obese and developing related diseases. It also states that schools play a particularly critical role by establishing a safe and supportive environment with policies and practices that support healthy behaviors. Schools also provide opportunities for students to learn about and practice healthy eating and physical activity behaviors³⁵.

A well-designed school playground and planned trail will provide a venue for middle school students to be independently active. Should a school or school garden be included with the playground, students could learn about healthy eating and lifestyles as part of the school curriculum.

- **Hypertension (High Blood Pressure)** - Hypertension in childhood is often associated with a family history of hypertension or cardiovascular disease (CVD). The strong association of high blood pressure with obesity and the marked increase in the prevalence of childhood obesity indicate that both hypertension and prehypertension are becoming a significant health issue in the young³⁶. A playground and planned trail could provide more time for physical activity while students are at school as well as during non-school hours. Involving the community and students in the design, construction and potential maintenance of the playground (trash pick up, watering vegetation) could provide additional physical activity and an opportunity for ongoing lessons about the importance of physical activity to health. The proposed school garden could provide a way to educate students on the benefits of a healthy diet.

- Injuries/Safety** - Gila County has a high rate of death due to auto accidents. While no data on playground injuries is available for Gila County or Arizona, there is national data. From 2001 to 2008 40 deaths due to playground injuries were reported in the U.S. to the Consumer Safety Product Commission (CPSC). In addition to the 40 deaths, 2,691 injuries from playground equipment were reported to the CPSC from 2001 to 2008. Of these injuries, between four and seven percent occurred at schools. Emergency Room reports found that 57% of injuries occurred at schools or parks, and 53% of the injuries were experienced by children ages 5 to 9 years old. The most common types of accidents were falls (44% of all injuries). Swings and slides account for most of the playground injuries recorded by the CPSC³⁷. A well designed playground with tested playground equipment poses a mild risk of injury and negligible risk of death. The Consumer Product Safety Commission offers guidance to help reduce safety risks on public playgrounds. A playground management plan can also help reduce playground risk of injury³⁸. (Figure 20: Incidents Associated with Playground Equipment 2001-2008.)

Trail safety, like playground safety, is a function of design and management. The American Trails Association provides extensive information on trail design and management³⁹.

An important consideration for both the trail and playground is community access during non-school hours. Ragus Road intersects with U.S. 60, and the majority of residents will use U.S. 60 to reach Ragus Road. U.S. 60 has narrow and intermittent sidewalks and no bike lanes. While the town limits speeds to 35 mph, the Ragus Road intersection is outside the town limits and speeds are higher. The Ragus Road intersection is also a main outlet for school traffic and residential development west of the school. There is no traffic signal or pedestrian crossings on U.S. 60 at the Ragus Road intersection. An increase in the number of cyclists and pedestrians at this intersection could pose a higher risk of accidents due to collisions with vehicles either turning from Ragus Road from or onto U.S. 60 as well as from vehicles traveling along U.S. 60. Additionally, Pinal Creek is on the north side of U.S. 60. Should the planned trail connect to the Pinal Creek Trail across U.S. 60, there is a higher risk of accidents associated with the trail crossing.

Several techniques exist to create a safe pedestrian and bicycle environment exist that reduces collisions between bicycles and vehicles. These include Bicycle lanes, signing, striping, pedestrian signals, dagmars, and special mid-block crossings. Additionally education about safe street crossings can also contribute to a reduction in collisions between pedestrians and bicycles and vehicles. Personal safety can be enhanced through call stations and lighting.

Figure 20: Incidents Associated with Playground Equipment 2001-2008

Equipment Type	Percentage
Swing	22%
Slide	17%
Climber	9%
Monkey Bars	9%
Steps	6%
Multiple Device Set	4%
Incidental	4%
Unknown/Not Specified	4%
Other	3%
Platform	3%
Sandbox	3%
Playground Surface	2%
Non-Play Structure	2%
Teeter Totter	2%
Jungle Gym	2%
Merry-Go-Round	1%
Safety Netting	1%
Glider Swing	1%
Tube, Horizontal	1%
Rope/Tire Swing	1%
Tube Slide	1%
Bars 23	1%
Zip Line	1%
Sliding Pole	1%
Total 2,691	100%

Source: Consumer Safety Product Commission.

- **Exposure to Light and Air** - The Phoenix Metropolitan Area has over 250 sunny or partly sunny days a year. Melanoma, the most serious form of skin cancer, is now one of the most common cancers among adolescents and young adults ages 15-29. While melanoma accounts for about three percent of skin cancer cases, it causes more than 75 percent of skin cancer deaths. UV exposure and sunburns, particularly during childhood, are risk factors for the disease. Not all melanomas are exclusively sun-related—other possible influences include genetic factors and immune system deficiencies⁴⁰. UV exposure on the planned playground can be limited by including sunshades over playground equipment, and providing sunscreen at school be applied prior to school play periods. Additionally limiting the amount of time permitted on the playground during school hours could also reduce UV exposure.

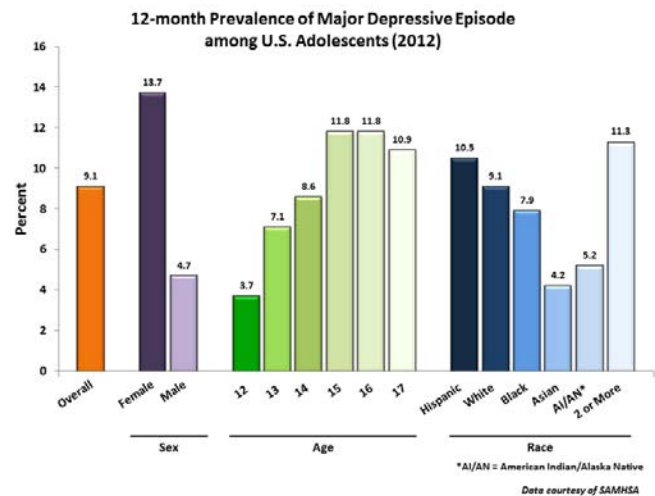
To reduce UV exposure along the trail, informational signing could help educate trail-users about the harmful effects of UV radiation, and shaded trail heads and rest stops could be provided at regular locations.

IMPACTS OF THE PLAYGROUND AND PLANNED TRAIL ON MENTAL HEALTH

Many factors contribute to mental health problems, including biological factors, such as genes or brain chemistry; life experiences, such as trauma or abuse; and family history of mental health problems⁴¹. (Figure 21: 12-month Prevalence of Major Depressive Episode Among U.S. Adolescents)

- **Suicide** - While there is no one cause of suicide, recent studies indicate that those who have attempted suicide may also have low levels of the brain chemical serotonin or defective serotonin receptors. Serotonin has been found in some experiments to be responsible for impulse control; and helps to regulate the impulse to self-harming activities, which includes suicide⁴². Regular exposure to sunlight and the outdoors that would result from a playground could help to ensure healthy serotonin levels in students; and opportunities for regular exercise outdoors that could result from the playground and planned trail could also help to increase serotonin levels in School District residents.

Figure 21: 12-month Prevalence of Major Depressive Episode Among U.S. Adolescents (2012)



Source: National Institute of Mental Health.

- **Substance Abuse** - While no empirical studies on humans have been done that document the relationship between exercise and substance abuse, studies on mice have shown that drug self-administration is reduced when exercise is available as an alternative non-drug reinforcer, and that exercise may also contribute to relapse prevention⁴³.
- **Depression** - Clinical Depression includes severe symptoms that interfere with the ability to work, sleep, study, eat, and enjoy life. While several studies cite the benefits of exercise and sunlight as ways to mitigate depression in adults, studies regarding the impact of exercise on depression in adolescents are mixed. One study found a reduction in depression for every additional hour of exercise per week, but cites more study is needed⁴⁴. While a playground and trail should not worsen depression in adolescents, it has other documented beneficial effects on contributing to reductions in some of the factors that may cause of depression, such as obesity, social isolation, and reduced levels of serotonin.

SOCIAL HEALTH

Social health is how you get along with other people, how other people react to you, and how you interact with society⁴⁵. A playground provides a venue for increased social interaction by school children as well as the communities. Numerous studies cite the benefits of social interaction in reducing disease and depressive disorders, as well as supporting individual behaviors that contribute to physical health⁴⁶.

The intent of this playground is to provide a community resource during non-school hours. Housing is located within walking distance of the park, and parking for those who live longer distances from the playground is available at the park. A planned trail will also enhance community access to the playground during non-school hours.

Safety - An article by the American Planning Association on the University of Illinois at Urbana-Champaign study about the impact of a parks adjacent to a public housing projects describes how parks can increase overall safety in a neighborhood. The study focused on four key points:

- Time spent in nature immediately adjacent to home helps people to relieve mental fatigue, reducing aggression.
- Green residential spaces are gathering places where neighbors form social ties that produce stronger, safer neighborhoods.
- Barren spaces are more frightening to people and are more crime prone than parks landscaped with greenery and open vistas.
- In order to make the best use of greenery and open space, it must be positively incorporated into a community's design⁴⁷.

Time with Family - While no studies were found that document increased correlating increased family time with parks; studies show that if a park is within walking distance, the amount of time people spend in it increases. Providing a park with areas for family events and activities may result in more families spending time together engaging in a common activity. A 2012 found that people living within 3/4 mile of a park are significantly more likely to use it than people living beyond those distances.

Opening the playground to the community during non-school hours will provide the only park for the community within 3/4 of a mile of the site. Encouraging neighborhood use could increase safety at the playground during non-school hours as a result of the additional surveillance that would occur from after school hours users. Studies have shown that people perceiving that a park can be accessed by foot and bicycle were found to be 10% more likely to use the park. Linking the planned trail to other non-motorized connections along Ragus Road (such as a bicycle path and safe crossing at U.S. 60 and a trail along the south side of U.S. 60) will substantially increase park use⁴⁸.

Sense of Community - Parks provide a sense of community and a focus for community events. The American Planning Association identifies three points with regards to parks and a sense of community:

- Parks are one of the quickest and most effective ways to build a sense of community and improve quality of life.
- Parks provide places for people to connect and interact in a shared environment.
- Parks channel positive community participation by getting diverse people to work together toward a shared vision⁴⁹.

Economic Development - The playground could be managed to contribute to economic development within Miami and Gila County, helping to increase employment and household incomes, potentially contributing to improved mental health. Mental health includes diseases such as depression. Depression is influenced by social ties, employment, and other factors. The areas served by the School District, Miami and Globe have few areas for community events and celebrations. Fairs and festivals are usually held on the main streets of Miami and Globe. Providing another venue for these events could broaden the types of events offered by the town.

One important regional celebration is the 4th of July, when the Pinto Mine provides a remarkable fireworks show that is a regional event. The fireworks are launched from the tailings pile almost due north of the school site. Currently, the WalMart parking lot (at the intersection of U.S. 60 and Ragus Road) is a popular location from which to watch fireworks. Until the show starts, children and families often site for over an hour on hot pavement.

A playground with ramadas and other facilities would provide a safe and attractive location from which to watch fireworks. Should the School District choose to do so, it could coordinate with the Miami or Gila County Parks and Recreation department to create a 4th of July event prior to the fireworks. Local vendors could vendors could set up in the parking lot adjacent to the playground and offer food and July 4th souvenirs (currently these individuals roam from parking area to parking area along U.S. 60). Should this event be popular the School District and the County or Town could coordinate to hold other events at the playground.

The School District could also rent and sell tickets to rides (i.e., bouncies etc.) and use this money for additional playground amenities and facilities.

The playground could also provide a great location for staging 5K and other races. Miami is well known for its mining history. Using this history as a theme for a run (potentially from the school to downtown Miami and back) could bring visitors to Miami who spend in the county and at local business.

7. REPORTING

INTRODUCTION

This chapter describes how the results of this assessment are disseminated to entities that will be responsible for implementation of the School Playground project. The primary mode to report the results of this study includes presentations to elected bodies (Miami Town Council) and appointed boards and commissions. With the exception of Reporting to the Steering Committee, reporting will be the responsibility of the Miami School District.

IMPLEMENTATION ENTITIES

The primary entity responsible for construction of a playground at the Lee Kornegay Intermediate School is the School District. Other entities that could support the school district in the construction, maintenance and management of the playground include the Town of Miami, Gila County (the school is not within the Town of Miami municipal limits), Cobre Valley Regional Health, and the Pinto mine. These entities are represented on the Stakeholder Committee.

PRESENTATIONS

A final report was presented to the Steering Committee on July 28, 2015. At this meeting Steering Committee members identified other opportunities to present the report and develop partnerships for implementation of the recommendations in the HIA and to construct the playground. These included additional presentations to the School District Board and Miami Town Council.

Figure 22: Reporting

Entity	Date	Report Provided By	Follow Up
Health Impact Assessment Steering Committee	July 28, 2015	PLAN*et Communities	Provide final report
Miami School District Board	September 14, 2014	School Superintendent	
Miami Town Council	School Superintendent to contact Mayor to schedule	School Superintendent	

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7. Recommendations

INTRODUCTION

This chapter includes recommendations regarding the playground and proposed trail relevant to individual and community health.

RECOMMENDATIONS

Construction of a school playground and planned trail will have a positive health outcome for the physical, social, and mental health of the community and its residents. To maximize these positive health benefits and minimize potential negative benefits, the following should be considered in the design, construction, and operation of the playground:

RECOMMENDATIONS TO LEVERAGE THE PLAYGROUND TO PROMOTE GOOD PHYSICAL HEALTH:

TO REDUCE OBESITY RELATED CHRONIC DISEASE, SUCH AS DIABETES, HYPERTENSION AND OBESITY:

- The playground should be accessible from planned and existing bicycle paths, trails, and other non-motorized facilities.
- The area planned for the playground should have adequate room for multiple device play facilities and active play areas. While swings could certainly be an important feature, other facilities that encourage active play and social interaction, such as multiple device play-structures with could provide more health benefits and reduce accidents.
- Until funding is available for a trail, consider creating a walking path around the perimeter of the playground to encourage use of this space by community members



A multiple device play set reduces the risk of injury and provides a variety of options for physical activity.

Figure 22: Playground Facilities

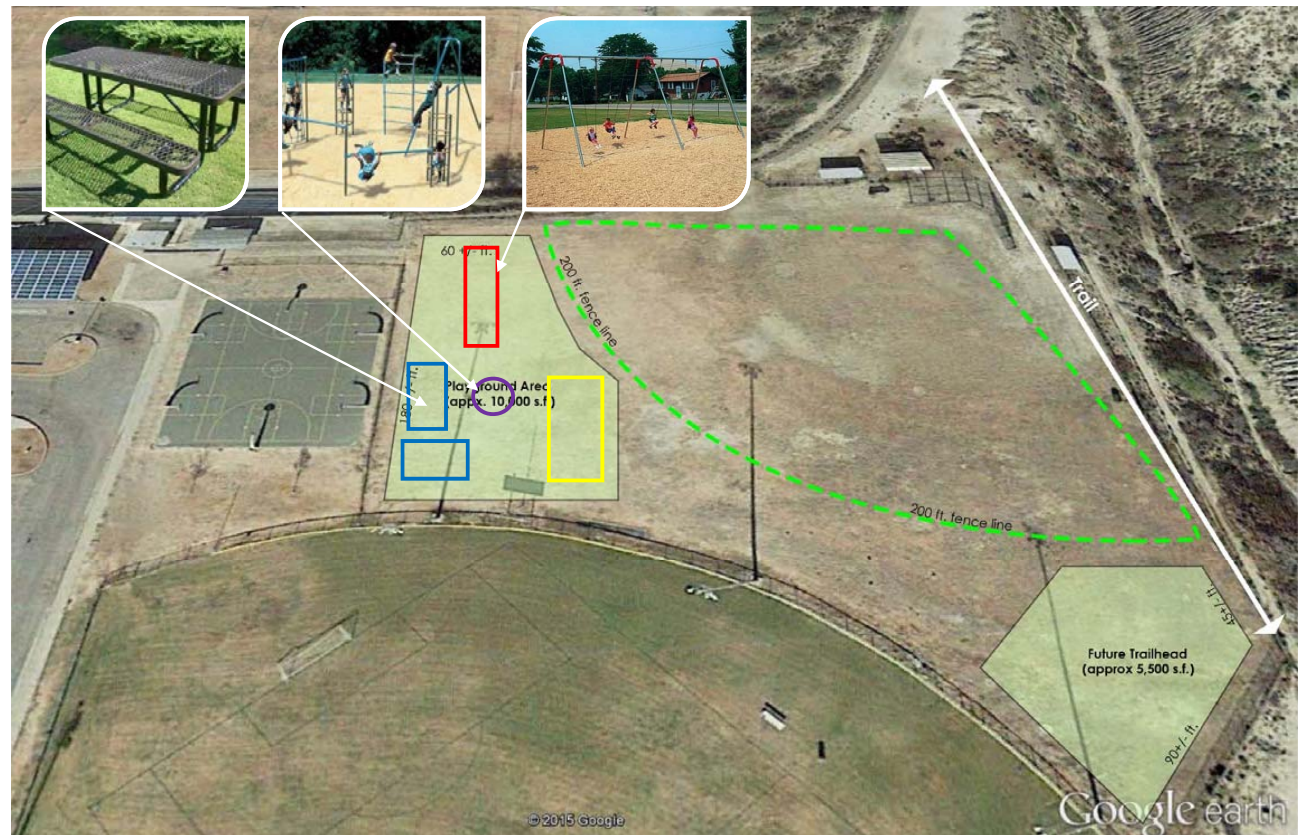
PLAYGROUND AREA –
Approx. ¼ Acre

TRAILHEAD AREA –
APPROXIMATELY 5,00 S.F.
(1/10 acre)

Opportunities:

- Garden Area
- Playground
Access/Seating Around
Basketball Courts

- Swings
- Picnic Tables
- Exercise Area
- Volleyball Court



Adequate area for a variety of play equipment exists within the playground.

for walking. Including exercise equipment around the walking path would enhance its use by the community and provide additional opportunities for physical activity.

- Provide signing around the playground about the benefits of physical activity related to health. For example, create questions such as, "15 minutes of play can burn XY calories. A soda is XY calories. How many minutes of play would it take to burn off a soda?"
- To educate the community about the benefits of healthy cooking and eating, work with the Globe Miami Farmer's Market to extend the market to create a school garden and hold events (such as cooking and canning demonstrations) related to the garden.
- Edible plants as landscape could be used to teach students and residents about healthy eating. Landscaping the playground could be achieved as a school or community project, with certified and capable supervision. To ensure the garden is maintained, consider surveillance.
- To ensure the playground remains attractive and used, create a capital fund and deposit 10% of the total playground cost into each year to pay for ongoing maintenance and equipment replacement.

TO REDUCE INJURIES:

- To prevent automobile collisions, consider providing a striped bike lane along Ragus Road to the playground. Additionally consider signing, striping, and a pedestrian signal across Ragus Road and U.S. 60 at the intersection of Ragus Road and U.S. 60.
- Stabilize the surface of all trails to reduce the potential for falls.
- Protect against falls from collisions and other accidents, an rubber playground surface should be included in the playground. Playground surfaces are important to safety and the quality of the playground. A 2012 study⁵¹ completed for the U.S. Access Board by the National Center on Accessibility rated a variety of playground surface types and found that the surface should be selected based on the environment, use, and cost considerations. Additionally the quality of installation and maintenance will impact longevity and quality.
- Many playground equipment vendors provide installation for their products. Construction of the playground can be completed by licensed contractors or others with adequate experi-



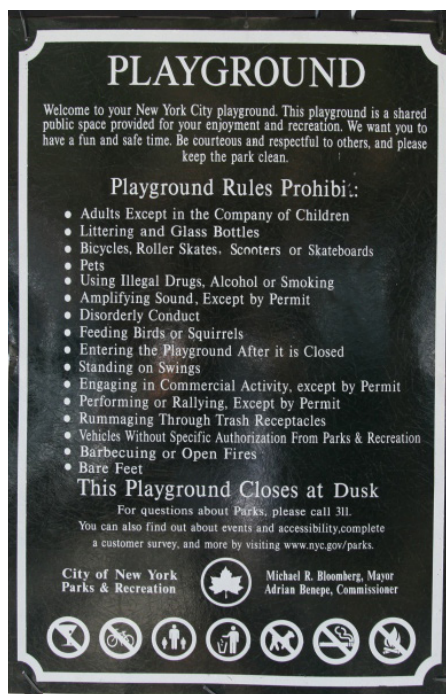
Rubber tiles could enhance safety and allow for access to those with disabilities. Source: Sinder & Associates advertisement.



A ramada can be used for family events during non-school hours and provide protection from UV rays.

ence in playground construction. Use only commercially constructed equipment.

- Informational signs understandable to middle school age and adult users should clearly describe playground rules, regulations, and consequences. Emergency contact information should be included on the sign.
- Consider maintenance in the design of the playground. For example, should trees be provided, consider watering and trimming (many children climb trees and damage them). Consider interactions between users and vegetation (no plants with thorns, no poisonous plants). Develop a maintenance plan and budget to ensure the playground continues to be attractive to the community and students.



A sign for a playground in NYC clearly explains rules, and includes contact information (left). A bilingual sign without enforcement information (right).

Source: Teachers pay Teachers Playground Poster. <https://www.teacherspayteachers.com>



TO REDUCE EXPOSURE FOR THOSE WHO HAVE ASTHMA OR ALLERGIES:

- Consider low pollen plants in the design and landscaping of the playground and nearby areas.

TO LIMIT UV EXPOSURE

- Provide shade over all play structures (excluding swings) and over any picnic tables or gathering areas.
- Work with the School Nurse or local health providers to identify safe practices with regards to UV exposure. Educate teachers regarding the use of sunscreen prior to playground use. Include these in management plan for the playground.



A community Garden in Goodyear Arizona. The garden is maintained by the neighborhood.

TO PREVENT DEHYDRATION:

- Consider providing a water fountain at the playground to prevent dehydration. If a water fountain is not possible work with local retailers (such as WalMart) to provide bottled water that is available to children as they leave the classroom to access the playground. Educate the community about the importance of staying hydrated to physical health with singing at

the playground about the importance of staying hydrated.

RECOMMENDATIONS TO LEVERAGE THE PLAYGROUND TO PROMOTE GOOD SOCIAL HEALTH

TO INCREASE TIME WITH FAMILY:

- To promote social interaction, include ramadas in the playground design. Depending on the extent to which the school envisions the playground being used by the community, ramadas could include electric for lighting and evening use; barbeque's, and trash receptacles.

TO HELP REDUCE CRIME

- Provide a place to lock bicycles at the playground.
- Consideration could be given to working with Gila County on creating ordinances that could be used to enforce playground rules.
- Should the playground include facilities available to the community, it is important that management during non-school hours be provided either through an agreement with the town of Miami or Gila County Parks Department, Gila County, or by the School District itself. Should the quality of the playground decline, or should it be perceived as unsafe, the extent to which it is used by the community will also decline⁵².
- The playground should be designed to be easily visible from the parking area allowing surveillance by local police and other safety personnel during non-school hours.
- Work with the town of Miami or Gila County to provide surveillance during non-school hours either through the parks department or police departments (or both). Alternatively, work with a non-for profit to program and manage the playground during non-school hours. Consider a partnership where a portion of the school and playground is leased to a program provider during summer or school breaks, and use the revenues to support maintenance and improvements for the playground.
- Develop a playground management plan to ensure constant surveillance during school hours.

RECOMMENDATIONS TO LEVERAGE THE PLAYGROUND TO PROMOTE GOOD MENTAL HEALTH

TO HELP REDUCE DEPRESSION:

- The playground should be designed to support school and community activities that provide an opportunity for people to meet neighbors and take pride in their community and school.

PUBLIC PLAYGROUND SAFETY CHECKLIST

- Make sure surfaces around playground equipment have at least 12 inches of wood chips, mulch, sand, or pea gravel, or are mats made of safety-tested rubber or rubber-like materials.
- Check that protective surfacing extends at least 6 feet in all directions from play equipment. For swings, be sure surfacing extends, in back and front, twice the height of the suspending bar.
- Make sure play structures more than 30 inches high are spaced at least 9 feet apart.
- Check for dangerous hardware, like open "S" hooks or protruding bolt ends.
- Make sure spaces that could trap children, such as openings in guardrails or between ladder rungs, measure less than 3.5 inches or more than 9 inches.
- Check for sharp points or edges in equipment.
- Look out for tripping hazards, like exposed concrete footings, tree stumps, and rocks.
- Make sure elevated surfaces, like platforms and ramps, have guardrails to prevent falls.
- Check playgrounds regularly to see that equipment and surfacing are in good condition.
- Carefully supervise children on playgrounds to make sure they're safe

Source: Consumer Product Safety Commission. <http://www.cpsc.gov/en/Safety-Education/Safety-Guides/Sports-Fitness-and-Recreation/Playground-Safety/Public-Playground-Safety-Checklist/>. Access Date: June 26, 2015.

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7. Monitoring and Evaluation

MONITORING

Implementing the recommendations of this HIA can be accomplished through partnerships and during design, construction, and operation of the playground. Figure 23: Implementation Responsibility and Timing outlines responsible entities and potential timing of the recommendations.

FIGURE 23: IMPLEMENTATION RESPONSIBILITY AND TIMING		
RECOMMENDATION	RESPONSIBLE ENTITY	SUGGESTED TIMING
The playground should be accessible from planned and existing bicycle paths, trails, and other non-motorized facilities.	School District, Town of Miami	At construction
The area planned for the playground should have adequate room for multiple device play facilities and active play areas.	School District	At construction
Until funding is available for a trail, consider creating a walking path around the perimeter of the playground.	School District, Gila County	Within one year of construction
Provide signing around the playground about the benefits of physical activity related to health.	School District partner with Cobre Valley Regional Health	At construction
Work with the Globe Miami Farmer's Market to extend the market to create a school garden and hold events .	School District with Globe Miami Farmer's Market	Within one year of construction
Use edible plants as part of landscaping.	School District with Arizona Nursery Association (azna.org)	During Design

FIGURE 23: IMPLEMENTATION RESPONSIBILITY AND TIMING

RECOMMENDATION	RESPONSIBLE ENTITY	SUGGESTED TIMING
Create a capital fund and deposit 10% of the total playground cost into each year to pay for ongoing maintenance and equipment replacement.	School District	At opening
Providing a striped bike lane along Ragus Road to the playground.	Town of Miami	By opening
Sign, stripe, and place a pedestrian signal across Ragus Road and U.S. 60 at the intersection of Ragus Road and U.S. 60.	ADOT	By opening
Stabilize the surface of all trails to reduce the potential for falls.	Gila County	With development of trail
Include a rubber playground surface in the design of the playground.	School District	During design and construction
Install informational signs understandable to middle school age and adult users that clearly describe playground rules, regulations, and consequences. Include emergency contact information on the sign.	School District with Cobre Valley Health	By opening
Consider maintenance in the design of the playground.	School District	During design.
Consider low pollen plants in the design and landscaping of the playground and nearby areas.	School District	During design
Provide shade over all play structures (excluding swings) and over any picnic tables or gathering areas.	School District	During design and construction
Work with the School Nurse or local health providers to identify safe practices with regards to UV exposure.	School District	Ongoing
Educate teachers regarding the use of sunscreen prior to playground use. Include these in management plan for the playground.	School District	Ongoing
Provide a water fountain at the playground to prevent dehydration. If a water fountain is not possible work with local retailers (such as WalMart) to provide bottled water that is available to children as they leave the classroom to access the playground.	School District	During design and construction

FIGURE 23: IMPLEMENTATION RESPONSIBILITY AND TIMING

RECOMMENDATION	RESPONSIBLE ENTITY	SUGGESTED TIMING
Educate the community about the importance of staying hydrated to physical health with singing at the playground about the importance of staying hydrated.	Cobre Valley Regional Health	Ongoing
To promote social interaction, include ramadas in the playground design.	School District with Pinto Valley Mine	During design and construction
To help reduce crime		During design and construction
Provide a place to lock bicycles at the playground.	School District with Pinto Valley Mine	During design and construction
Create ordinances that could be used to enforce playground rules.	School District with Gila County	During design and construction
Create after hours playground management agreements the town of Miami or Gila County Parks Department,	School District	During design and construction
The playground should be designed to be easily visible from the parking area.	School District	Design
Work with the town of Miami or Gila County to provide surveillance during non-school hours.	School District with town of Miami and Gila County	By playground opening
Develop a playground management plan to ensure constant surveillance during school hours.	School District	By playground opening
The playground should be designed to support school and community activities	School District, town of Miami, Gila County, Pinto Mine	Design and during operation

EVALUATION

The HIA evaluation⁵³ provides information on the HIA impact and process. The purpose of the evaluation is to contribute to the quality of future HIAs.

IMPACT EVALUATION

As an HIA is implemented, and if baseline information is established, it can be monitored and over time, the effectiveness of its recommendations can be evaluated. At the conclusion of an HIA, the assessment process can be also be evaluated. This evaluation focused on the HIA process. Once an HIA has been implemented, its effectiveness can be evaluated.

Meeting Objectives of HIA

The primary objective of this HIA was to provide information about the Health impacts of a playground that the School District could use in future grant and other funding applications. This objective was met.

A secondary objective of the HIA was to build community partnerships and support for the implementation of the playground. This objective was generally met; and as a result of this HIA the School District is working to build a partnership with the town of Miami, has moved forward its partnership with the Pinto Mine and Cobre Valley Regional Medical Center.

Acceptance of Recommendations

The HIA recommendations were presented at a meeting of the Steering Committee. The Steering Committee accepted the HIA recommendations, and acknowledged that the HIA recommendations would add to the construction cost of the playground. The Mayor of Miami and School Superintendent also acknowledged that where partnerships for implementation were required, current organizational structure and jurisdictional authorities could be challenging. In the future, where jurisdictional authority is required, separate meetings with those authorities to review and discuss capabilities and develop a commitment to implementation would be appropriate during the HIA process. Additionally, broader representation from the county (invited, but not a participant) and other entities could increase stakeholder commitment to implementing the recommendations. Consequently, the School Superintendent is now working to present the HIA and develop support for the additional cost increment to the playground that would result from its implementation.

EVALUATING THE IMPACT OF AN HIA

Evaluating the impact of an HIA includes asking the following questions:

- How and when were the recommendations accepted and implemented by the decision makers – and what factors contributed to this?
- What are the likely reasons why recommendations were rejected?
- Were the aims and objectives of the HIA met?
- What other impacts were associated with the HIA?

Other Impacts/Outcomes

Other outcomes from this HIA include:

- An increased awareness of the benefits of a playground to the community
- Discussions between representatives of the town of Miami and the School for other partnerships to increase physical activity options for youth
- Interest on the part of teachers within the district on health related activities
- Awareness of some students about the role physical activity has in health as a result of their participating on the website and a student representative on the HIA Steering Committee
- Increased awareness of other entities (School District Board and Miami Town Council) of the health and other (i.e., potential economic and community) benefits of a playground due to presentations to these entities by the School District Superintendent.

PROCESS EVALUATION

Resources

This HIA was funded by the Arizona Department of Health Services through a CDC grant. This HIA was part of a pilot project to evaluate A rapid HIA process was used to develop this HIA. The HIA was conducted towards the end of the school year. The determination to conduct this HIA was made by the Arizona Department of Health Services based on a request by the Miami School District.

The HIA was conducted by a consultant in conjunction with the Miami School District. All meetings were held on site in Miami, and the Miami School District provided outreach for the HIA. Using the School District, which is also requested the HIA, to conduct outreach was successful, and key stakeholders were identified and engaged throughout the process. This was important because the relationships developed by the School District as a result of this HIA process will be helpful as the District moves forward with its plans to construct the playground.

Availability and Quality of Data

There is limited health data available for the School District and the Miami/Globe area of the county. When possible, CCD data was used, as well as other data from the school district health assessment. Generally, however, county-wide data was used to identify health inequalities. To help consider county-wide health data within the context of the wide range of social and economic conditions in Gila County, CCD data was used with data from the school district, and a discussion of the wide socio-economic conditions within Gila County is included in the report.

Formulation of Recommendations

The decision-making process was mostly influenced by the Steering Committee and the relative impact of recommendations that could impact health. Many of the recommendations in this Assessment are policy-based, and require partnerships between the School District and the county or town of Miami. These policy recommendations have a cost associated with them (i.e., hours for police surveillance) and are being discussed. Other recommendations regarding construction and design also have cost implications that may make them unattainable. However, the purpose of the HIA was to clearly demonstrate the health benefits that could accrue from this cost increment, and provide a foundation for soliciting additional funds to address it. In this respect, the School District feels that the HIA was successful.

The recommendations in this HIA were delivered to decision makers through the Stakeholder Committee, and the School District will continue to present the recommendations to the School District Board and town of Miami Council. The District is also planning to reach out to Gila County for help in some of the regulatory items, as well as with regards to the planned trail.

Process Efficacy

No documentation or surveys were conducted to formally assess how the Steering Committee felt about the effectiveness of the HIA process. However, at the final HIA meeting, when the recommendations were presented, the Stakeholders stayed afterwards and formulated a plan and tentative time line for presenting the recommendations to the School Board and Town Council. The School Superintendent and Stakeholder Committee stated that they enjoyed the process and believed the HIA process made them more aware of the many impacts and benefits a playground could have on the school district and wider community.

EVALUATING THE HIA PROCESS

Process evaluation can provide lessons about why and how the HIA worked, including:

- How was the HIA undertaken?
- What resources were used, and what was the associated opportunity cost?
- What evidence was used, and how did it inform the development of recommendations?
- How were health inequalities assessed?
- How were recommendations formulated and prioritized (what factors influenced this decision-making process)?
- How were the decision makers involved and engaged in the process, what were their expectations, and were they fulfilled with the limited resources available?
- How and when were the recommendations delivered to the relevant decision makers?
- What did those involved in the HIA think about the process used?

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NOTES

1. Skulski, Jennifer K. York, Sherril. A Longitudinal Study Of Playground Surfaces To Evaluate Accessibility: Year One Findings
2. Cohen, Deborah. The Paradox of Parks in Low-Income Areas: Park Use and Incivilities. Presentation at the 2015 Active Living Research Annual Conference. http://activelivingresearch.org/sites/default/files/2015_Parks_Cohen.pdf. Access Date: June 29, 2015.
3. Centers for Disease Control. www.cdc.gov
4. National Research Council. Improving Health in the United States: The Role of Health Impact Assessment (2011)
5. Healthy People 2020. <http://www.healthypeople.gov/2020/about/foundation-health-measures/Determinants-of-Health>. Access Date: July 30, 2015.
6. The CDC is one of the major operating components of the United States Department of Health and Human Services.
7. Centers for Disease Control and Prevention. <http://www.cdc.gov/socialdeterminants/Definitions.html>. Access Date: June 22, 2015.
8. About the World Health Organization. <http://www.who.int/about/en/>. Access Date June 22, 2015
9. US. Department of Health and Human Services Partnership for Action. <http://minorityhealth.hhs.gov/npa/templates/browse.aspx?lvl=1&lvlid=11#sd>. Access Date: June 22, 2015.
10. <http://www.cdc.gov/ncbddd/childdevelopment/positiveparenting/middle.html>. Access Date June 19, 2015
11. The Center for Managing Chronic Disease. What Is Chronic Disease? <http://cmcd.sph.umich.edu/>. Access Date: June 25, 2015.
12. C B Taylor, J F Sallis, and R Needle. The relation of physical activity and exercise to mental health. Public Health Rep. 1985 Mar-Apr; 100(2): 195–202. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1424736/>. Access Date: June 26, 2015.
13. Erin York Cornwell and Linda J. Waite. Social Disconnectedness, Perceived Isolation, and Health among Older Adults. J Health Soc Behav. 2009 Mar; 50(1): 31–48. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2756979/>. Access Date: June 26, 2015
14. 2009–2013 American Community Survey 5-Year Estimates. <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>. Access Date: June 24, 2015.
15. 2009–2013 American Community Survey 5-Year Estimates. Globe-Miami CCD.
16. Occupation By Sex And Median Earnings In The Past 12 Months (In 2013 Inflation-Adjusted Dollars) For The Civilian Employed Population 16 Years And Over. 2009–2013. American Community Survey 5-Year Estimates
17. U.S. Census. Occupation By Sex And Median Earnings In The Past 12 Months (In 2013 Inflation-Adjusted Dollars) For The Civilian Employed Population 16 Years And Over. 2009–2013 American Community Survey 5-Year Estimates
18. Scott, Douglas F. and Grayson, Larry R. Selected Health Issues in Mining. Spokane Research Laboratory, National Institute for Occupational Safety and Health, Spokane, WA. (undated). <http://www.cdc.gov/niosh/mining/UserFiles/works/pdfs/shiim.pdf>
19. Arizona Comprehensive Lung Disease Control Plan. **AZDHS**. <http://azdhs.gov/tobaccofreeaz/reports/pdf/lung-disease.pdf>. **Access Date: August 3, 2015.**
20. Southern Gila County Economic Development Corporation. http://sgcedc.com/?page_id=12. Access Date August 6, 2015.
21. Leung, CW, Villamor E.. *Is participation in food and income assistance programmes associated with obesity in California adults? Results from a state-wide survey*. Public Health Nutr. 2011 Apr;14(4):645–52. doi: 10.1017/S1368980010002090. Epub 2010 Aug 12. <http://www.ncbi.nlm.nih.gov/pubmed/20701819>. Access Date: June 20, 2015.
22. Ver Ploeg, Michele Ver Ploeg and Ralston, Katherine. Food Stamps and Obesity: What Do We Know? Economic Information Bulletin No. (EIB-34) 37 pp, March 2008.
23. Arizona Department of Health Services [ADHS], Bureau of Public Health Statistics, 2013
24. ADHS., Bureau of Public Health Statistics, 2013
25. Arizona Department of Health Services [ADHS], Bureau of Public Health Statistics, 2013.
26. The Behavioral Risk Factor Surveillance System (BRFSS) is the nation's premier system of health-related telephone surveys that collect state data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services. Established in 1984 with 15 states, BRFSS now collects data in all 50 states as well as the District of Columbia and three U.S. territories. BRFSS completes more than 400,000 adult interviews each year, making it the largest continuously conducted health survey system in the world. <http://www.cdc.gov/brfss/>. Access Date: June 24, 2015.
27. <http://www.cdc.gov/nchs/>

28. New York State Department of Health. What Cause Diabetes? <https://www.health.ny.gov>. Access Date: June 25, 2015.
29. Robert Wood Johnson Foundation. County Health Rankings and Road maps. <http://www.countyhealthrankings.org/>. Access Date: June 25, 2015
30. The Division of Health and Emergency Services - Gila County. *Community Health Assessment for Gila County, Arizona*. 2012. http://www.gilacountyaz.gov/gila/government/health_and_emergency_services/uploads/Community_Health_Assessment_FINAL.pdf
31. Fryar, M.S.P.H. Cheryl D., and Ogden, Ph.D. Cynthia L., Division of Health and Nutrition Examination Surveys. Prevalence of Underweight Among Children and Adolescents Aged 2–19 Years: United States, 1963–1965 Through 2007–2010. NCHS Health E-Stat. http://www.cdc.gov/nchs/data/hestat/underweight_child_07_10/underweight_child_07_10.htm. Access Date: July 3, 2015.
32. National Conference of State Legislatures. Childhood Overweight and Obesity Trends. <http://www.ncsl.org/research/health/childhood-obesity-trends-state-rates.aspx>. Access Date: June 25, 2015.
33. Child Policy Research Center. Data Center for Child and Adolescent Health Arizona State Fact Sheet. <http://www.childhealthdata.org/docs/nsch-docs/arizona-pdf.pdf>. Access Date: June 25, 2015.
34. Center for Managing Chronic Disease. <http://cmcd.sph.umich.edu/what-is-chronic-disease.html>. Access Date: June 26, 2015.
35. *ibid.*
36. U.S. Department Of Health And Human Services National Institutes of Health National Heart, Lung, and Blood Institute. *The Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents*. May 2005 (rev.) https://www.nhlbi.nih.gov/files/docs/resources/heart/hbp_ped.pdf. Access Date: June 26, 2015.
37. O'Brien, Craig W. *Injuries and Deaths Associated Playground Equipment 2001-2008*. U.S. Consumer Product Safety Commission. October 2009. <http://www.cpsc.gov/PageFiles/108596/playground.pdf>. Access Date: June 26, 2015.
38. For an example of a playground management plan see *School Playground School Playground Safety Guidelines*, Educational Service District 112, Vancouver, WA. <http://web3.esd112.org/docs/insurance-programs/playgrdgl-n1200.pdf>. Access Date June 26, 2015.
39. See American Trails Association at <http://www.americantrails.org/resources/safety/>. Access Date: June 26, 2015.
40. U.S. EPA. Health Effects of UV Radiation. <http://www2.epa.gov/sunwise/health-effects-uv-radiation>, Access Date: June 26, 2015.
41. U.S. Department of Health and Human Services. Mental Health. <http://www.mentalhealth.gov/basics/what-is-mental-health/>. Access Date: June 29, 2015.
42. All Things Considered. *The Biology of Suicide*. National Public Radio. April 29, 2015. <http://www.npr.org/programs/death/980429.death.html>. Access Date: June 29, 2015.
43. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3276339/>
44. Rothon, Catherine, Edwards, Phil, et. al. *Physical activity and depressive symptoms in adolescents: a prospective study*. BMC Medicine. <http://www.biomedcentral.com/1741-7015/8/32>. Access Date: June 29, 2015.
45. The Den. Autism Education Trust. *Friends and Relationships*. <http://www.autismeducationtrust.org.uk/the-den/friends%20and%20relationships/the%20facts/what%20is%20social%20health.aspx>. Access Date: June 29, 2015.
46. Umberson, Debra Karas Montez, Jennifer. *Social Relationships and Health: A Flashpoint for Health Policy*. J Health Soc Behav. 2010; 51(Suppl): S54–S66. doi: 10.1177/0022146510383501. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3150158/>. Access Date: June 29, 2015.
47. American Planning Association City Parks Forum Briefing Papers. *How cities use parks to Create Safer Neighborhoods*. <https://www.planning.org/cityparks/briefingpapers/>. Access Date: June 29, 2015.
48. JWalker, Jamie Rae and Crompton, John L. *The Relationship of Household Proximity to Park Use*. *Journal of Parks and Recreation Administration*. Vol 30. No 3. Fall 2012. <http://agrifecdn.tamu.edu/cromptonrpts/files/2011/06/article19.pdf>. Access Date: June 29, 2012.
49. American Planning Association City Parks Forum Briefing Papers. *How Cities Use Parks for Community Engagement*. <https://www.planning.org/cityparks/briefingpapers/>. Access Date: June 29, 2015.
50. Contact: Sarah Renkert, (928) 402-8589, 150 N. Pine St., Globe, AZ 85501
51. Skulski, Jennifer K. York, Sherril. *A Longitudinal Study Of Playground Surfaces To Evaluate Accessibility: Year One Findings*
52. Cohen, Deborah. *The Paradox of Parks in Low-Income Areas: Park Use and Incivilities*. Presentation at the 2015 Active Living Research Annual Conference. <http://activelivingresearch.org/paradox-parks-low-income-areas-park-use-and-incivilities>. Access Date: June 29, 2015
53. WHO. Evaluating Health Impact Assessment. <http://www.who.int/hia/evidence/en/practice.pdf>

Appendix A

ABOUT CHRONIC DISEASES

HEART DISEASE

The term “Heart Disease” encompasses several conditions of the heart. In the United States, coronary artery disease is the most common ailment of the heart, frequently causing heart attack, failure and arrhythmias (Centers for Disease Control and Prevention [CDC], 2009). Coronary artery disease is caused when cholesterol is deposited along the walls of the coronary arteries (the arteries which supply blood to the heart), creating a build up of plaque and narrowing the blood supply available to the heart (Centers for Disease Control and Prevention [CDC], 2013). As the buildup of plaque continues and the heart muscle continues to get insufficient blood supply, the heart will eventually stop pumping, which is commonly called a heart attack (Centers for Disease Control and Prevention [CDC], 2013).

Most heart disease can be prevented by eating a healthy, high fiber diet, consisting of plenty of fruits and vegetables, and foods low in sodium and saturated fat. Another equally important component to the prevention of heart disease is regular physical activity. Those engaging in the recommended 2.5 hours of physical activity per week will have a significantly lower risk of developing heart disease.

Source: Centers for Disease Control and Prevention [CDC], 2013

BMI

A healthy body weight is determined by ratio between height and weight, also called Body Mass Index (BMI.) A normal or healthy BMI for adults falls within a range of 18.5 – 24.9%. Adults with a BMI in the range of 25-29.9% are classified as overweight and those with a BMI of greater than 30% are classified as obese. BMI for youth is calculated as Obese individuals have a much higher risk for heart disease, stroke, type 2 diabetes and some types of preventable cancer. The aforementioned chronic health conditions are considered some of the leading causes of preventable death in the United States. Obesity and the resulting health conditions cost \$147 billion annually according to figures amassed in 2008. An individual’s likelihood of becoming obese is influenced by three main factors: genetic characteristics, individual behaviors and their living and work environments.

Because weight and height change during growth and development, as does their relation to body fatness, a child’s BMI must be interpreted relative to other children of the same sex and age.

Source: (Centers for Disease Control and Prevention [CDC], 2014)

DIABETES

In the United States Diabetes is the seventh leading cause of death and is responsible for a myriad of other health problems. Complications from diabetes include, neuropathy (nerve damage), problems with the eyes/blindness, heart disease, kidney disease, high blood pressure, stroke and lower extremity amputation (Centers for Disease Control and Prevention [CDC], 2015) (American Diabetes Association, N.D.). 9.3% of the population in the United States, or 29.1 million people currently have diabetes, with 8.1 % being undiagnosed and unaware of their condition.

Source: Centers for Disease Control and Prevention [CDC], 2014).

HYPERTENSION

Hypertension is often called the “silent killer” because it has no obvious warning signs or symptoms (Centers for Disease Control and Prevention [CDC], 2015). Gila County residents have more than twice the morbidity rate for Hypertension than any other county in the state. According to 2013 data, Gila County has 610.7 hypertensive residents per 100,000 persons, in comparison with the Arizona state average of 299.5 residents per 100,000

Source: Arizona Department of Health Services [ADHS], Bureau of Public Health Statistics, 2013

Appendix B

STAKEHOLDER ENGAGEMENT PLAN

HEALTH IMPACT ASSESSMENT STAKEHOLDER ENGAGEMENT PLAN

Miami Lee Kornegay Intermediate School Playground

HIA Stage	Stakeholder Engagement Activities	Format/ Methodology	Purpose/ Desired Outcome	Desired Participants	Proposed Date
<p>Process Oversight</p> <p><i>The oversight process is intended to be used throughout all the stages of the HIA</i></p>	<ul style="list-style-type: none"> Regular project meetings Monthly project updates 	<ul style="list-style-type: none"> Telephonic every other week Written, provided with invoice 	<ul style="list-style-type: none"> Ongoing project communication 	<ul style="list-style-type: none"> ADHS Miami USD Consultant 	<ul style="list-style-type: none"> Ongoing
<p>Screening</p> <p><i>Deciding whether an HIA is needed, feasible, and relevant</i></p>	<ul style="list-style-type: none"> Collaborate with MUSD School Administration Determine level of interest in HIA within the community Determine if the County/City has capacity to support/provide data for HIA Examine opportunities for coordination with other, ongoing efforts Reach out to businesses within Miami (including the Mines) 	<ul style="list-style-type: none"> Regular team meetings with ADHS and Miami USD Contact community leaders, teachers, PTO and ask them to participate in HIA Steering Committee and who else should participate Contact Gila County Health Services to determine level of participation Explore ways to communicate appropriate to the community Reach out to the Pinal Creek Trail Steering Committee 	<ul style="list-style-type: none"> Increase awareness of the benefits of an HIA Expand the number of stakeholders to be more inclusive Assess level of effort based on available data Assess best and most effective outreach methodology Engage potential entities that can assist in implementation of the playground 	<ul style="list-style-type: none"> School Administration Parents Teachers Students PTO representative Senior Center Representative Mayor/ Councilmembers 	<ul style="list-style-type: none"> Before first HIA Steering Committee Meetings

HIA Stage	Stakeholder Engagement Activities	Format/ Methodology	Purpose/ Desired Outcome	Desired Participants	Proposed Date
Scoping <i>Deciding which health impacts to evaluate and evaluation methodology</i>	<ul style="list-style-type: none"> Attend a meeting of the HIA Stakeholder Committee to identify health issues that could be affected by the playground Solicit input from the community about important health issues Coordinate with Gila Trail Committee to identify opportunities for collaboration/interface/ coordination Research other studies to determine key health issues that might not be apparent to the community To identify health related considerations related to the playground, reach out to parents via flyers sent home with students and the community via flyers placed at key locations and notice on school district website and through internet based resources Present the HIA process and scope to the Miami Town Council 	<ul style="list-style-type: none"> Hold three a meeting of the HIA Steering Committee Present information to the Steering Committee on the relationship between community health and community design Facilitate guided exercise at the Stakeholder Committee to identify potential health considerations associated with the playground Provide information via internet-based sources to the community about the relationship between community health and community design Solicit ideas through internet based resources about the potential health considerations relative to the playground 	<ul style="list-style-type: none"> Educate the community about the relationship between community design and health Develop community interest in the HIA Develop potential support for conducting the HIA Educate the Community about the benefits of an HIA Promote Civic activity and pride Promote community and school partnerships Engage the Town Council 	<ul style="list-style-type: none"> Steering Committee Parents Teachers Businesses County Health Officials Liaison with Pinal Creek Trail 	<ul style="list-style-type: none"> Conduct at First Stakeholder Meeting

HIA Stage	Stakeholder Engagement Activities	Format/ Methodology	Purpose/ Desired Outcome	Desired Participants	Proposed Date
Assessment <i>Using data, research and analysis to determine the magnitude and direction of potential health impact; offering recommendations to improve health conditions</i>	<ul style="list-style-type: none"> Collaborate with other HIAs to identify best practices for analysis Work with local Councils of Government, hospitals, Health Departments to analyze data and verify data sources Reach out to schools, senior centers and clinics to provide data and other resources Solicit input on Assessment from Steering Committee 	<ul style="list-style-type: none"> Email Outreach through Steering Committee Review other HIAs conducted in the region and state. Research websites provided by State, Pew Trust, Collaborate with Alliance for Livable Communities (ALC) Conduct SRTS Assessment Walk Score Provide Assessment information via digital outreach and School District website 	<ul style="list-style-type: none"> Document intuitive expectations with fact Provide documentation for use to solicit grants and other funding Build fact based support for the connection between physical activity and health that is directly related to the community 	<ul style="list-style-type: none"> Consultant Gila County Health Department AZDCH Miami USD Steering Committee 	<ul style="list-style-type: none"> Develop data resources and assessment prior to 2nd Steering Committee Meeting; Present Assessment at 2nd Steering Committee Meeting
Recommendations <i>Providing recommendations to manage the identified health impacts</i>	<ul style="list-style-type: none"> Conduct field work to review the site and opportunities associated with it Develop concept plans for playground Integrate ideas provided by Steering Committee and Community through outreach Test ideas with Steering Committee and through outreach 	<ul style="list-style-type: none"> Presentation at Steering Committee Meeting Provide graphics that can be placed at the school for review and comment (digital) Direct residents to website where they can provide comment via flyers sent home with school children 	<ul style="list-style-type: none"> Solicit feedback on recommendations and refine them for implementation by the School District Develop support for recommendations and potentially identify options for implementation 	<ul style="list-style-type: none"> Steering Committee Community School District Board 	<ul style="list-style-type: none"> Solicit recommendations at 2nd Steering Committee meeting Present recommendations for comment at 3rd steering committee meeting

HIA Stage	Stakeholder Engagement Activities	Format/ Methodology	Purpose/ Desired Outcome	Desired Participants	Proposed Date
Reporting and Communication <i>Sharing the results, recommendations</i>	<ul style="list-style-type: none"> • Post recommendations and report on School Website • Present report to Town Council • Present report at Chamber of Commerce Meeting • Provide a copy of the report to AZ DCH, County Health Department 	<ul style="list-style-type: none"> • In person presentation at Town Council and Chamber of Commerce Meetings • Digital Transmittal to County and State Health Departments 	<ul style="list-style-type: none"> • Identify potential support for implementation of playground • Increase awareness if the connection between physical activity and community design 	<ul style="list-style-type: none"> • School District 	<ul style="list-style-type: none"> • Upon delivery of final product
Monitoring <i>Tracking how the HIA affects the decision and its outcomes</i>	<ul style="list-style-type: none"> • Present regular updates on progress of playground construction at School District Board Meetings • Keep community informed of playground progress • Provide information of activities/events at playground • Engage the community in ongoing playground maintenance 	<ul style="list-style-type: none"> • In person presentation at Town Council and Chamber of Commerce Meetings • Organize community playground monitors • Partner with town to program playground during non-school hours 	<ul style="list-style-type: none"> • Enhanced Safety and maintenance 	<ul style="list-style-type: none"> • Community • School District 	<ul style="list-style-type: none"> • Ongoing