South 12th Avenue Corridor Project Health Impact Assessment

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PIMA COUNTY
HEALTH DEPARTMENT

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Executive Summary

Background

As part of a commercial corridor project, the City of Tucson's Office of Integrated Planning has been working with community partners to prepare plans and a bond application for proposed infrastructure improvements to South 12th Avenue. The bond proposal includes infrastructure improvements to built environment elements that have the potential to enhance the health and safety of residents in the neighborhoods surrounding the corridor. Pima County Health Department (PCHD) conducted a Health Impact Assessment (HIA) to review the current conditions and evaluate how the proposed changes would affect the health of the population living in and around the Corridor. This report was written to offer the health perspective to decision-makers, and inform them of the potential impact that this project could have for the community.

Methods

Much of the data that inform this report came from the "Community Planning and Project Evaluation, Volume IV: Commercial Corridors" project report (Drachman Report) conducted by the Drachman Institute, the research-based arm of the College of Architecture, Planning, and Landscape Architecture at the University of Arizona. This Assessment was completed by analyzing ethnic/racial, socio-economic, and land use data along with relevant health indicator data obtained from the Arizona Department of Health Services to analyze the potential impacts of the proposed bond project.

Conclusions

The South 12th Avenue Corridor HIA concludes that the measures listed below would promote increased pedestrian and cyclist safety, promote active living in the community and potentially decrease chronic disease rates and crime. Currently, the Corridor does not have continuous sidewalks, nor does the area provide adequate safety for pedestrians, cyclists, or public transit users. Additionally, there is a lack of green space in and around the Corridor that would allow for increased physical activity. This report demonstrates that a lack of infrastructure may contribute to the overall lower health status of the community.

Recommendations

Recommendations to enhance the safety and quality of life for the community surrounding the South 12th Commercial Corridor include: (1) adopt "Complete Streets" design elements for the Corridor that will provide for alternative modes of transportation; (2) increase the number of sheltered bus stops; (3) work with land owners to utilize empty/abandoned lots as green space for community use; (4) conduct crosswalk survey of South 12th Avenue. Per this HIA, these recommendations can help mitigate negative health effects in the community.

Introduction

An Understanding of Health

In order to first understand the role of the built environment on the health of a community, it is important to first define the concept of health. The World Health Organization defines health to be the "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[1] . The key concept presented is that health is more than an absence of illness or disease and there are multiple determinants that play significant roles on the health of a community.

As Figure 1 demonstrates, various factors contribute to an individual's health, ranging from those aspects they cannot change (e.g. genetics, age) to those areas which require their participation (e.g. political participation, social cohesion)[2]. Listed among these contributing factors are areas in which the individual may not have control, but this is not for lack of action. This can be exemplified by availability of external factors, such as housing, parks, transportation, noise, and the working environment. This model acknowledges individuals make choices that affect their health, and represents the idea that these individual choices are only a few of many different factors that combine to affect an individual's health. The combined factors are commonly referred to as the social determinants of health.

Figure 1 - Social Determinants of Health

The Built Environment

While the field of public health is concerned with all of the social determinants of health, this HIA will be focused primarily on the built environment and the impact it plays on the health of a community. The relationship between health and the built environment can be traced to the late 19th and early 20th centuries, when public health officials worked to improve the living and working conditions of populations that had higher rates of infectious diseases, such as tuberculosis and cholera[3]. These interventions focused on housing infrastructure, work conditions, and proper drainage for waste water.

[1] Preamble to the World Health Organization Constitution
[2] A Health Impact Assessment Toolkit, 2010 p. 10, Human Impact Partners
[3] Urban Land Institute Report: Health and the Built Environment, 2013

While the trend in diseases has shifted from communicable to chronic conditions, it is imperative to further the partnerships between built environment and public health officials.

Built environment are the areas in which the community lives, works, and plays. These are areas of constant exposure to a variety of issues which can both positively as well as negatively impact that population's health. The evidence suggests that the burden of chronic disease can be reduced through lifestyle, nutrition, and a reduction in exposure to toxic conditions[4]. Data suggests that the leading causes of death in Pima County are those which can possibly be traced to a lack of opportunity for physical activity, thus promoting the importance of built environment on population health. The impact of built environment on health can be identified in a number of ways, such as minimal walkability linked to a lack of sidewalks, crosswalks, negligible street lighting, and minimal green spaces to exercise. In these examples, the built environment itself can easily influence the behaviors of the population. The resulting issue of obesity that arises from sedentary lifestyles presents major risk factors for chronic conditions such as cardiovascular disease, diabetes, and stroke. These diseases are all represented in the top ten causes of death for Pima County residents.[5]

The impact of the built environment on the health of target communities is constantly being demonstrated through various projects across the country. These interventions can range from small projects such as striping a bike lane on a crowded street, to major overhauls of rights-of-way to provide pedestrian islands, lit crossings, separated bike lanes and sidewalks, and shade trees. Regardless of the size of the project, each of these elements plays a role in encouraging people to be active, thus allowing them an opportunity to improve their overall health. These opportunities would not exist if they were not provided for by the built environment.

[4] *The Built Environment and its Relation to the Public's Health: The Legal Framework.* Perdue, et al. 2003
[5] *Pima County Health Compendium*, Pima County Health Department, 2013

Defining a Health Impact Assessment

The primary purpose of a HIA is to inform the decision-making process. It can be considered a tool that aims to highlight both the positive as well as negative impacts of a decision on the health of a target community. In keeping with its health focus, an HIA should include recommendations to maximize the positive health impacts, while mitigating the negative health concerns of a proposal[6]. To better highlight the value of this HIA, a brief description of the process is presented here. An HIA is used to aid decision-makers in their consideration of a particular policy, program, or proposal. In many instances, the potential impact of a proposed idea on the health of the community affected is not fully considered by decision-makers. The following six steps outline the HIA process, from first determining whether an assessment should be conducted to the completion and distribution of the final report[7]:

1. **Screening:** The project is identified and determination is made as to whether performing an HIA will add value to the project. This step in the process will ask what decisions need to be made, how the decision will affect the community's health, whether the HIA will provide new information for decision-makers, and if there are enough resources to complete an HIA.

2. **Scoping:** Development of objectives and formulation of steps staff will take to identify what health effects the HIA will study is completed; identifying who will be affected by the project and stakeholder involvement is key during the scoping process to gather input and concerns around the pending project.

3. **Assessment:** Information on the current health status of the population that will be affected by the decision will be gathered then analyzed in an attempt to describe what is causing these health issues, and what the effects of the final decision will be on the population's health.

4. **Recommendations:** By providing an analysis of existing environment and future impacts of the decision, recommendations can be made that consider the health impact of the project, and present the health case for or against pursuing the project based on the projected impact on the public wellbeing.

5. **Reporting:** The draft report is given to the key decision-makers and/or stakeholders and comments on the report are requested. A final report is drafted and distributed to key policy and decision-makers.

6. **Monitoring and Evaluation:** Changes in health are evaluated as the project/decision and recommendations of the assessment are employed.

[6] Health Impact Assessment, WHO, 2014
[7] Human Impact Project, referenced from humanimpactpartners.org, 2011

Bond Proposal Project Area

South 12th Avenue Corridor

South 12th Avenue, the corridor identified in the bond proposal, is bordered by 44th Street, 16th Avenue Liberty Avenue, as can be seen below by Figure 2.

Figure 2 - South 12th Corridor

This portion of South 12th Avenue is a distinctive hub of Pima County's Latino culture and a popular regional culinary destination. The Corridor is lined with schools, churches, and shops that have traditionally been owned by and cater to generations of Mexican American and native families. In addition, South 12th Avenue is home to some of Tucson's most celebrated and successful Mexican restaurants, as is evident by being a key segment of Visit Tucson's "Best 23 Miles of Mexican Food," as well as being the focus of regular "Best of the Barrio" food tours[8].

Residential and Commercial Usage

Figure 3 - Land Use of South 12th Avenue

[8] *South 12th Avenue Project Sheet*, City of Tucson Office of Integrated Planning

The South 12th Avenue neighborhood is home to approximately 8,670 residents. As the figure above demonstrates, the project area has a higher percentage of residential to commercial developments. Located in this project area are 2,926 residential units, of which 2,626 are occupied, resulting in 10% of the residential properties being unoccupied. The total number of residents who rent their home represented the majority of residents, at 1,133 (43.1%)[9].

While the majority of plots within the area are residential, South 12th Avenue has a large concentration of businesses. The Drachman Report found that the Corridor itself contains 260 parcels of land, and of these, 115 are reserved for commercial use. In reviewing these businesses, the same report found that 195 businesses reported a "local" service area, meaning that their services were primarily utilized by the population surrounding the Corridor. Additionally, 25 businesses served the greater metropolitan area, and four claimed regional services.

[9] *Community Planning and Project Evaluation, Volume IV: Commercial Corridors*, Drachman Institute, 2013

Screening

This section describes the initial steps taken to determine whether it was feasible to conduct an HIA or not. Presented here is the data that helped the HIA team in determining where to focus the HIA and how to best understand the data as it relates to the South 12th Corridor proposal.

When screening a project, it is important to ask a number of questions to best determine whether it is worth pursuing a Health Impact Assessment.

Is health already being considered?

- Health impacts are not currently considered in the Bond Proposal as it is written. The partnership that is pursuing improvements is primarily focused on economic opportunity for the surrounding community. The Health Department feels that this presents the potential to include health as a component of the plan.
- It is known that community leaders are aware of the current health issues of the target population and wish to improve it though it is unclear whether health is already being discussed at the policy level for this project.
- Since the health issues present to/in the community have not been discussed in-depth in the planning and discussion of this project, it is anticipated that the HIA will be a key component in highlighting the necessity of including health in the final product.

What types of barriers exist?

- The primary barriers to conducting this HIA will not be political; meetings with key community leaders have demonstrated support.
- Meetings with agencies assisting in developing the plan have concluded with strong commitments to collaboration and sharing of ideas. No objections are anticipated to conducting the HIA on this project from these partners.

What resources are available?

- The Pima County Health Department has the capacity to be the lead agency on this HIA.
- Given the time frame for project consideration, a rapid (or desktop) HIA is the most appropriate option. This decision was facilitated by the data that was already in existence.
- Since nearly all of the data necessary to complete the Rapid HIA is already collected, it is possible to conduct the HIA.
- Available data primarily deals with the demographics of the community, socio-economic status (SES), land use, and transportation. The Health Department will extrapolate potential health impacts from this data and frame the recommendations in the appropriate method.

Scoping

Methodology

HIA scoping determines the magnitude of the project by asking questions about the size of the target population, who will be involved in the HIA, associated project proposals to be analyzed, and how the results and recommendations will be shared with stakeholders.

With the South 12th Corridor, the Pima County Health Department felt it best to focus on the community that lives and works within the area defined by the bond proposal. In reviewing the project area, the team developed four research categories: (1) Demographics; (2) Pedestrian and Cyclist Safety; (3) Crime; and (4) Chronic disease.

Once the four areas were defined for the scope of the project, a diagram was drafted to connect the identified health issue to its respective indicators and associated interventions proposed by the bond project. As seen in Figure 4, there are four separate boxes. Each of these boxes represents each research category of the HIA in bold. Following that are health indicators that affect the research topic. After the indicators are infrastructure improvements that have been recommended by the bond project.

The first box identifies the research question of **demographics**. In this category, the factors that most affect the demographics of the community are represented by the socio-economic status and the housing status of the residents of the project area. The interventions mentioned in this box (increased property values, increased commercial activity) both refer to the projected improvements should the proposal be approved.

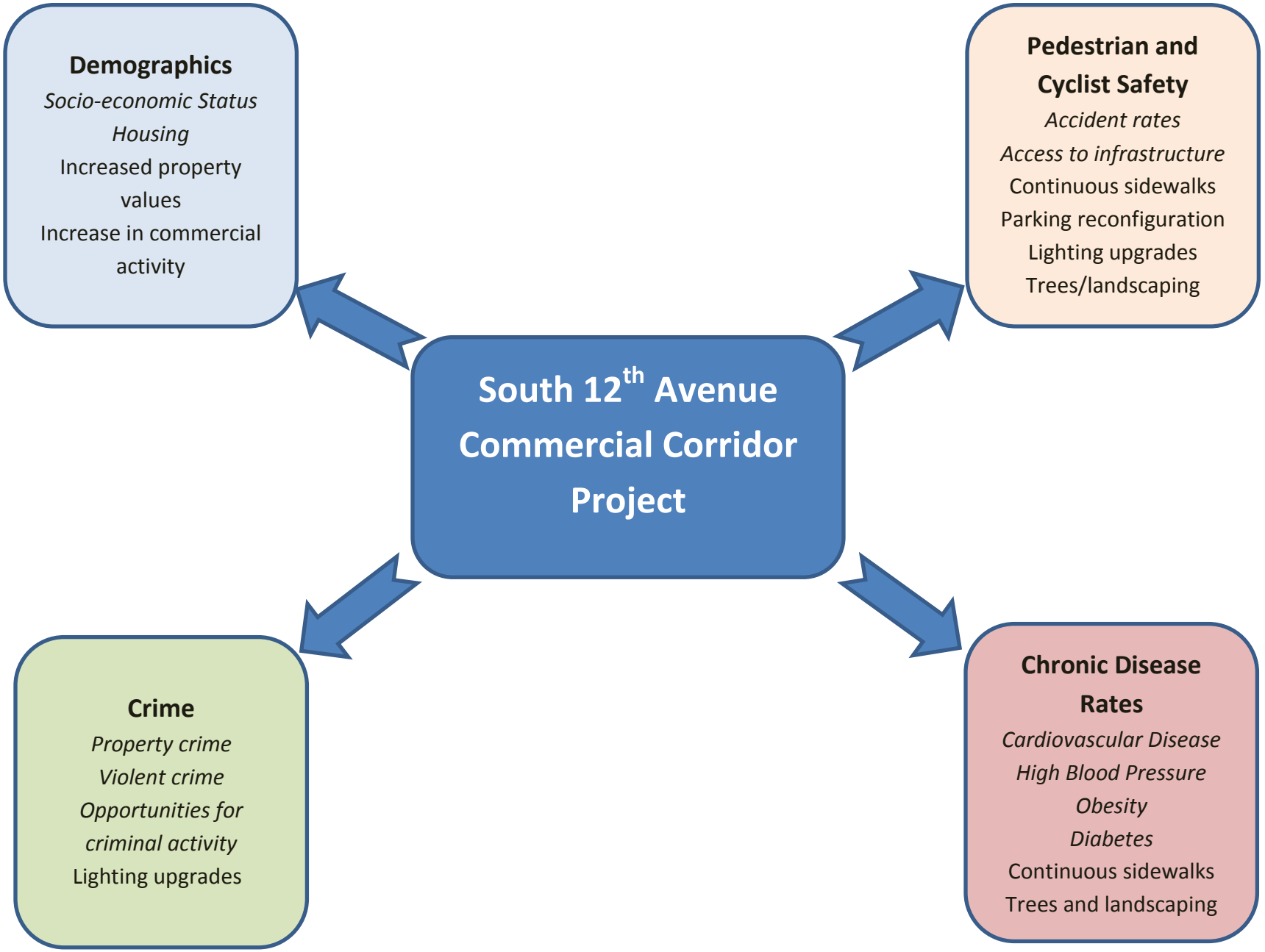
The second box represents **pedestrian and cyclist safety.** As will be demonstrated in this report, accident rates and access to infrastructure all affect the overall safety and wellbeing of active transportation users. The bond project is proposing continuous sidewalks, parking reconfiguration, lighting upgrades, and trees/landscaping to help improve the conditions for pedestrians and cyclists.

The third box identifies **crime** and its impacts on the community. The factors that indicate crime as a problem in the community are rates of property crime and violent crime, as well as the opportunities for criminal activity. The intervention mentioned by the bond proposal that may best respond to these rates is improved lighting along the South 12th Avenue Corridor.

The final box represents **chronic disease** rates in the community. Those diseases identified as issues within this population include cardiovascular disease, diabetes, high blood pressure, and obesity. The infrastructure improvements proposed by the project include continuous sidewalks, mini parks and improved landscaping.

The middle box represents the bond proposal, and points outward to indicate that each of these four areas will be affected by the details of the proposal itself, as indicated by the interventions mentioned in each of the four areas.

Figure 6 - Scoping Diagram



Before the Scoping diagram seen in Figure 4 was developed, the logic model seen below in Figure 5 was designed to explore the various research ideas that could be brought up over the course of the project. This table consists of the following:

1. A baseline against which the project can be measured (existing conditions research questions)
2. Research questions that the HIA will answer (Impact Research Questions)
3. Indicators that will be used to measure the effect of the intervention (Indicators)
4. Data sources that will be used in the analysis of this project (Data)

Figure 7 - Scoping Research Question Table

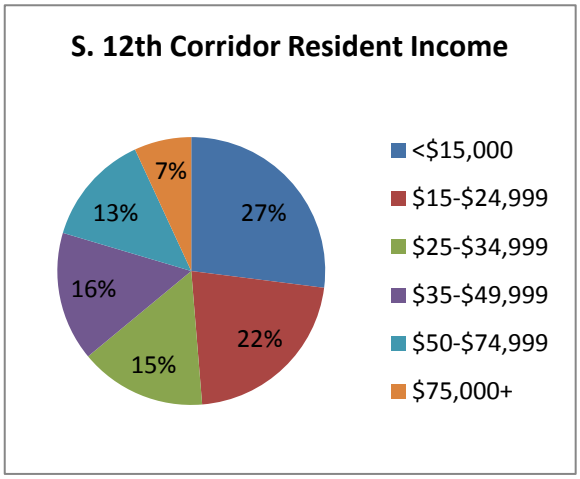
Project:	**S. 12th Avenue Corridor Investment Project**			
Determinant(s):	**Pedestrian safety, crime, chronic disease, and demographics**			
Geographic Scope:	**44th St. (N) to Drexel Avenue (S), 16th St. (W) to Liberty Avenue (E)**			
Existing Conditions research questions	**Impact Research Questions**	**Indicators**	**Data Sources**	**Methods**
What are current rates of chronic disease in community?	Will proposed changes help reduce rates of chronic disease and increase physical activity in community?	Prevalence of hypertension, cardiovascular disease, diabetes	• PCHD • Arizona Dept. of Health Services	Literature review Statistical analysis
What are current accident rates?	How will infrastructure changes affect safety of all users?	Accident rates (pedestrian, motor vehicle, bicycle)	• Tucson Police Dept.	Data analysis
How do demographics of population compare to the rest of the County?	Will proposed changes adversely impact population with low SES?	Income, ethnicity, age	• U.S. Census • Drachman Report	Data analysis
What are the crime rates in target neighborhood?	Will proposed changes make impact on crime levels in community?	Crime statistics	• Tucson Police Dept. • Arizona Dept. of Transportation • US Dept. of Transportation	Data analysis

Assessment

Corridor Characteristics

While the population within the project area represents a small percentage of the residents of Pima County at large, their ethnic and socio-economic levels can lead to a series of logical conclusions. Over 90% of the Commercial Corridor residents are Latino, well above the population of Pima County, standing at 34.6%.

Figure 4 - Resident Income



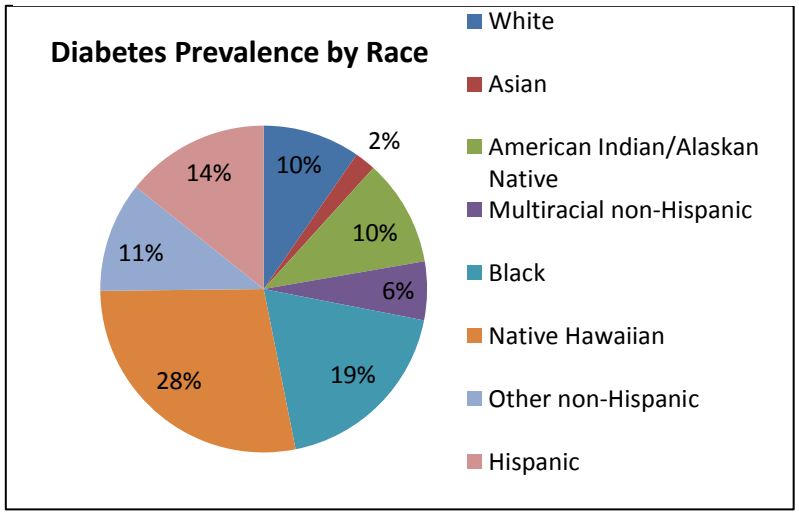
In addition, the Drachman Report indicates that the average household income of $25,645 is below the averages of the City of Tucson ($35,499) and the County ($42,138). Approximately 27% of total households in the South 12th Avenue Corridor earn less than $15,000. Those earning $15,000-$24,999 make up an additional 21.7%.

Chronic Diseases

Diabetes

The Arizona Department of Health Services (ADHS) found that across the state Latinos have a higher rate of diabetes than many other ethnicities[10] at approximately 12% compared to the 8% prevalence rate for non-Latino whites. ADHS also found that in 2011 Latinos faced a higher burden of disease than many other groups[11]. This number is cause for concern since diabetes ranked within the top 10 causes of death of Pima County residents.

Figure 5 - Diabetes Prevalence



The lower average income of the residents of the South 12th Avenue Corridor is also linked to a higher prevalence rate of diabetes. Data from ADHS indicates that adults who made $15,000 or less had more than twice the rate of diabetes

[10] *Arizona Diabetes Burden Report*, Arizona Department of Health Services, 2011
[11] *Difference in Health Status Among Racial/Ethnic Groups*, Arizona Department of Health Services, 2011

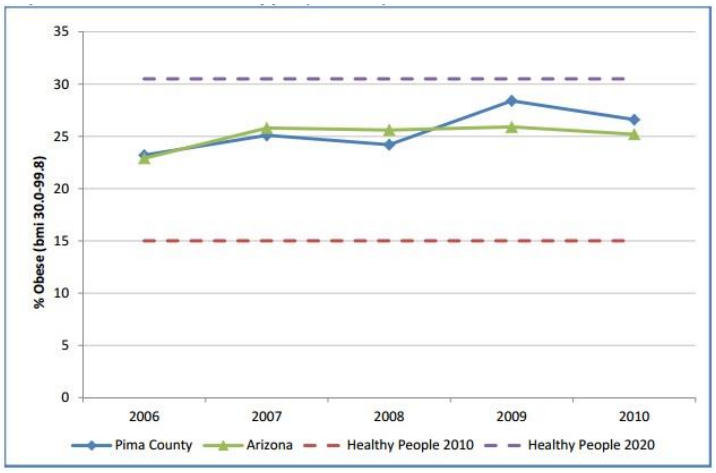
(19.5%). Furthermore, the incidence of diabetes steadily increases as income decreases. For those making an average of $25,000, the prevalence of diabetes is at 11.2%. For $10,000-15,000, the rate climbs to 11.9%, and for those earning less than $10,000, the number jumps to 20.7%[12].

Cardiovascular Disease

According to the Pima County Health Status Compendium, cardiovascular disease is the second leading cause of death for residents. Given the makeup of the community defined above, it is important to look at the rates of heart disease in Latinos. While Pima County does not have localized data on Latinos and heart disease, ADHS collected data for the City of Tucson. For all residents, cardiovascular disease was responsible for 28.4% of deaths in 2012[13]. The State also found that diseases of the heart were the number one cause of death in Latinos for 2011. The Centers for Disease Control and Prevention conducted a survey which found that that more than a quarter (26.1%) of Latinos reported having high blood pressure, and nearly a third (30.4%) with high blood pressure were not taking medication that could reduce their risk for heart attack and stroke[14].

Obesity

Figure 6 - Obesity Rates in Pima County



Obesity is a known contributing cause for the diseases listed above. Data from the Pima County Health Compendium clearly shows that Pima County has an obesity problem, with over 25% of the population reported as obese, slightly above the State average. In an annual study conducted by the Robert Wood Johnson Foundation, the team also found that 33.6% of Latinos were obese[15]. Income also plays a significant role in obesity, with Trust for America's Health reporting that 33% of adults who earn less than $15,000 per year were obese, compared with 25.4% of those who earned at least $50,000 per year[16].

The same report found that lack of physical activity was a significant problem in the Latino community, with 34.6% reporting not engaging in physical activity. County data supports this to be an issue locally, with only 45% of Pima County children reaching CDC goals for physical activity, and another 15% failing to do 60 minutes of activity any day of the prior week[17]. The data shows that the residents within this corridor are at a significant risk for developing chronic diseases.

[12] *Arizona Diabetes Burden Report*, ADHS, 2011
[13] *Community Vital Statistics*, ADHS, 2012
[14] CDC: Million Hearts, 2013
[15] *F: As in Fat: How Obesity Threatens America's Future*. Robert Wood Johnson Foundation, 2012
[16] *F: As in Fat*: *How Obesity Threatens America's Future*. Robert Wood Johnson Foundation, 2013
[17] State of the County's Health Presentation, PCHD, 5/2014

Crime

While not directly considered a public health issue, crime impacts a community's sense of place and wellbeing, increasing levels of stress and anxiety[18]. Crime has also been shown to be a barrier in physical activity in areas with increased rates[19] High stress levels lead to cardiovascular diseases, for which this community is already more susceptible. The Drachman Report found that in the period of January – July 2012, 500 different criminal activities were reported. The highest complaint was disorderly conduct, comprising 33.2% of the total crime reported. Suspicious activity followed at 16.3%. This was followed by larceny and theft at 14.8%[20]

Pedestrian and Cyclist Safety

Public Transit

The South 12th Avenue Corridor is home to five major Sun Tran bus routes (#16, 23, 24, 27, 50) with one route (16) having among the highest capacity ridership in the Sun Tran system, with 31.9 passengers per hour[21]. In addition, the Corridor is in close proximity to the Roy Laos Transit Center, which connects the community to the rest of the City of Tucson. A review of the Corridor revealed a total of 27 bus stops. Of these, 15 are unsheltered, offering no protection from the elements. With the average high temperature from the months of May, June, July, August, and September ranging from 91 degrees Fahrenheit in the spring to 100.3 degrees in the summer[22], the effect of heat on transit users waiting for their buses must be considered.

Pedestrian Accessibility

Figure 9 demonstrates the lack of pedestrian access on South 12th Avenue. In many areas of the Corridor, parking blacktop extends to the curb. A windshield survey conducted by the Drachman Institute in 2012 revealed that approximately 50% of properties are without sidewalks. This survey did not take into consideration vacant lots, which comprise 12% of the parcels, or parking lots, which account for approximately 5% of the parcels.

Figure 7 - South 12th Avenue

The lack of crosswalks and associated lighting play a role in pedestrian safety on South 12th Avenue. While there are crosswalks at the major intersections the Corridor, there are very few along the rest of Corridor. Non-intersection accidents were responsible for the majority of pedestrian fatalities, also at 70%[23]. Within the State of Arizona, the number one cause of

[18] *Crime is a Public Health Problem.* Middleton, 1998
[19] *The Impact of Crime on Physical Activity: Incorporating Crime Measures in Trail Use Models.* Brown, et al, 2007
[20] *Community Planning and Project Evaluation, Volume IV: Commercial Corridors*, Drachman Institute, 2013
[21] Ibid
[22] Monthly/Daily Normals, Tucson. NWS, 2014
[23] *Traffic Safety Facts: Pedestrians*, USDOT, 2012

pedestrian fatalities in 2013 was crossing the street, accounting for 50% of all pedestrian deaths[24]. These pedestrian deaths represented a 20% increase from the prior year in Arizona.

The lack of lighting also plays a role in pedestrian safety. The Drachman Report found that over half (54.2%) of the parcels in the South 12th Avenue Corridor did not have lighting. According to the 2012 Traffic Safety Facts released by the U.S. Department of Transportation, 70% of pedestrian fatalities occurred between the hours of 6:00 pm and 5:59 am. Based on available pedestrian/motor vehicle accident rates, it is not unreasonable to conclude that the lack of safe pedestrian infrastructure may play a role in the decreased physical activity within this community.

As stated, this community's genetic makeup already predisposes the population to the same chronic diseases that are already high in the same population nationally. The Corridor's lack of pedestrian infrastructure that is safe, clearly marked, and well-maintained impacts the community's levels of physical activity.

Bicycle Safety

In addition to a lack of sidewalks, figure 9 also demonstrates a lack of well-marked bicycle lanes. The Drachman Windshield Survey also found that of the 260 parcels present along the Corridor, 96.2% did not have a striped bike lane. The U.S. Department of Transportation reported that in 2012, the majority of cyclist fatalities occurred at non-intersections (60%) in urban areas (69%). Also with pedestrian fatalities, a large number of these (48%) occurred between 4:00 p.m. to 11:59 p.m.[25] According to the same State of Arizona Department of Transportation crash facts document mentioned earlier, there were 18 cyclist fatalities in the state, representing a 66% increase in the number of cyclist deaths in Arizona over previous years. As with pedestrian safety, local data was not available for this HIA, but again, it can reasonably be inferred that the lack of infrastructure may prevent people from riding bicycles.

Access to opportunities for Physical Activity

Figure 8 - Rodeo Wash Park II

A major issue with the South 12th Avenue Corridor is a lack of green space for physical activity. The lack of green space along the Corridor presents a challenge for residents looking to increase their physical activity. A review of the land use map from the Drachman Institute report indicates that there are two primary park spaces along the Corridor. The first is the green space at St. John the Evangelist Catholic School, located on the northernmost section of the planned area. The second is the "Rodeo Wash Park II." While designated a park, there is a limited amount of green space as Figure 10 demonstrates.

[24] *Arizona Motor Vehicle Crash Facts: 2013*, Arizona Department of Transportation
[25] *Traffic Safety Facts: Bicyclists and Other Cyclist*, USDOT, 2012

Recommendations

This report recommends the following steps be taken to both mitigate the negative health issues present in the community, while also reinforcing the positive steps being taken.

1. ***Adopt "Complete Streets" design standards for the South 12th Avenue Corridor to ensure bicyclist and pedestrian safety.***
   "Complete Streets" is a planning concept that provides the infrastructure for all users to safely utilize the public throughway for their various needs[26]. The term is derived from the fact that by incorporating design elements that are conducive for travel via alternative modes, the street then becomes complete. These elements can include a variety of structures; in reviewing the South 12th Corridor, it is recommended that these elements include:

   - Striped bike lanes: This mitigates the issue of cyclists having the ride in the same lane as traffic. By clearly marking the right-of-way and providing for safety of bicyclists, it increases the likelihood that residents will make more trips via bicycle rather than use private automobile. By increasing the number of trips taken via bicycle, this also increases the number of residents who engage in physical activity.

   - Continuous sidewalks: Ideally, this includes both sides of the street. Continuous sidewalks indicate to motorists the presence of pedestrians in the vicinity. It also provides a safe location for pedestrians to travel, increasing the likelihood of trips by foot. These trips provide opportunity for increased physical activity by the residents.

   - Well-lit pedestrian crossings: This element ensures that pedestrians have a safe place to cross 12th Avenue. By being well-lit, it increases the opportunities for motorists to see pedestrians and avoid potentially fatal accidents.

   - Shade trees: These should be located along pedestrian-heavy areas of the corridor. In addition to the aesthetic appeal, shade trees provide a respite from the mid-summer heat for pedestrians, public transit users, and bicyclists.

2. ***Increase the number of sheltered bus stops***
   More than half of the bus stops along the Corridor are unsheltered. This creates two potential problems: the first is that public transit users will refrain from using buses in favor of private automobiles to make trips. The second is that those transit users who retain usage will be subject to heat and heat-related illness. Sheltered bus stops, while not completely eliminating the effects of heat on the individual, play a large role in reducing the risks of heat-related illness.

[26] *What Are Complete Streets?* Smart Growth America, 2014

3. ***Work with owners of empty or vacant lots to create more green space***
   In order for people to be physically active, they must have space that allows for such activity. As noted previously, the one designated park along the Corridor is composed primarily of dirt and concrete. While there is grass also provided to the south of Rodeo Wash Park II, it is recommended that officials work with land owners to develop some of the vacant lots along the corridor into green spaces for use by the community. These spaces will provide opportunity for physical activity to both residents as well as visitors to the Corridor. The potential usage can range from community gardens to mini-parks. In addition to the health effects offered by green space, a study conducted in 2008 showed that increasing green space increased property values by 2% in a low-income neighborhood[27].

4. ***Conduct crosswalk assessment of the S. 12th Avenue Corridor***
   In order to better understand the risk posed to pedestrians, this report also recommends that officials conduct a crosswalk assessment of the entirety of the South 12th Avenue Corridor. This assessment should investigate the location of non-major intersection crosswalks along the Corridor for clear marking, frequency, and lighting. The intent of this recommendation is to increase opportunities for safe pedestrian crossing at all times.

As the following table demonstrates, these recommendations can be achieved through infrastructure improvements such as those identified in the proposed Corridor Improvement Project.

Figure 9 - Proposed Corridor Elements

Recommendation	*Proposed Project Intervention*
#1: Complete Streets Design Components	Continued sidewalks, lighting upgrades, trees/landscaping, parking reconfiguration
#2: Increase in number of sheltered bus stops	Access reconfiguration (business and bus access)
#3: Converting vacant lots into green space	Mini-parks, trees/landscaping
#4: Crosswalk Assessment	Continuous sidewalks, access reconfiguration

[27] *What is a Tree Worth? Green City Strategies, Signaling, and Housing Prices.* Wachter,S.; Bucchianeri, G. 2008

Conclusions

As originally proposed by the City of Tucson Office of Integrated Planning, the South 12th Avenue Corridor Project will provide moderate but positive impacts on local community health. If the recommendations outlined in this Health Impact Assessment are implemented, the opportunity for these positive health outcomes can be significantly increased for the residents of the South 12th Avenue Corridor.

Health is a key component to the success of the community and its endeavors, since a healthy community is a productive community. By integrating health considerations into all policies through tools such as Health Impact Assessments, decision-makers and planners can be mindful of the impact their policies, plans, and procedures have on their target community. Through this method, officials can celebrate successes in health and work to reduce health disparities in our community, thus ensuring that opportunities for a healthy community exist for everyone, everywhere, every day.