

# SAN TAN VALLEY

## HEALTH IMPACT ASSESSMENT



**PREPARED FOR:** Pinal County  
Public Health  
Services District

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# Acknowledgements

## HEALTH IMPACT ASSESSMENT – TECHNICAL ADVISORY TEAM

Lori Lieder, University of Arizona Pinal County Extension  
Anne Rubel, Pinal County Public Health  
Naomi Murrietta, Pinal County Public Health  
Darcy McCracken, Sun Life Family health  
Cayle Blanchard, J. O. Combs Unified School District  
Kim Bentley, Central Arizona College  
Kenneth Steel, Maricopa County Department of Public Health/ Arizona Alliance for Livable Communities  
Jan Vidimos, Pinal County Education & Outreach Administrator  
Pat Griffin, Executive Director Compassion Center  
Jennelle Esquivel, Executive Director Compassion Connect AZ  
Lindsey Lucks, Maricopa County Department of Public Health  
Wendy O'Donnell, AZ Living Well Institute of Empowerment Systems  
Dean Brennan, Arizona Department of Health Services  
Jeanine L'Ecuyer, Vitalyst  
Adele Taylor, Banner Health  
Steve Baldwin, Banner Health

## HEALTH IMPACT ASSESSMENT – PROJECT TEAM

Rachel Zenuk, Pinal County Public Health Services District  
Steve Abraham, Pinal County Community Development Department  
Matt Klyszeiko, Michael Baker International  
Evan Fisher, Michael Baker International  
Tristan Black, Michael Baker International  
Jenna Tourje, Michael Baker International

# Table of Contents

<b>Executive Summary</b> .....	1
Recommendations.....	2
<b>Introduction</b> .....	3
San Tan Valley Special Area Plan.....	3
Built Environment & Health.....	5
HIA Overview.....	5
<b>Methodology</b> .....	6
HIA Components.....	7
<b>Screening &amp; Scoping</b> .....	8
<b>Assessment</b> .....	11
<i>Physical Activity Pathway- Existing Condition Assessment</i> .....	11
Demographics.....	11
Health Outcomes.....	11
Health Factors.....	13
Physical Environment.....	13
Community Engagement.....	19
<i>Physical Activity Pathway- Scenario Assessment</i> .....	22
Scenario Development.....	22
Health Indicators.....	23
Scenario Health Impact.....	24
Community Engagement.....	28
<b>Findings &amp; Recommendations</b> .....	30
<b>Monitoring &amp; Evaluation</b> .....	32
<b>References</b> .....	33

# Table of Contents- Cont.

## Figures

1. San Tan Valley Planning Area.....	4
2. Determinants of Health.....	5
3. Pathway Diagram.....	9, 10
4. Population Growth.....	12
5. Median Age.....	12
6. Race and Ethnicity .....	12
7. Adult Obesity.....	14
8. Daily Physical Activity.....	14
9. Non- Vehicular Crashes.....	14
10. Total Housing Units.....	14
11. Housing Type.....	14
12. Commuting Modes.....	14
13. Existing Land Use.....	15
14. Walk Score.....	16
15. Bicycle Facilities.....	16
16. Access to Healthy Food.....	16
17. Recreational Facilities.....	18
18. Providing alternative transportation options (e.g. sidewalks, trails, bike lanes, etc.) is.....	19
19. I feel safe to walk or bike in San Tan Valley.....	20
20. How often do you engage in some type of leisure physical activity?.....	20
21. What do you feel are the greatest transportation infrastructure challenges facing STV?.....	21
22. What Recreation Amenities/Services does San Tan Valley need more of?.....	21
23. Scenario A- Business As Usual.....	25
24. Scenario B- Community Node.....	26
25. Scenario C- Community Core.....	27
26. Preferred Land Use Plan.....	29

# Executive Summary



Between December 2016 and May 2018, the Pinal County Community Development Department coordinated the development of a Special Area Plan (SAP) for the growing community of San Tan Valley (STV). A SAP is a plan that is developed for a clearly defined area and gives more detailed recommendations than those provided in the County's broader county-wide Comprehensive Plan.

The STV SAP builds upon the goals, policies, and implementation strategies in the County's Comprehensive Plan in six specific areas: Land Use; Housing; Economic Vitality; Transportation; Parks, Trails and Open Space; and Public Facilities and Services.

Concurrent to this community based planning effort, the Pinal County Public Health Services District received funding from the Arizona Department of Health Services to conduct a Health Impact Assessment (HIA) on the STV SAP. The overall intent of the HIA was to explore how the STV SAP might impact the community's health and make recommendations that in turn mitigate negative health impacts and increase health benefits.

Given the development context and expansive nature of the STV SAP, initial recognition was given to the need to focus this HIA effort on those determinants of health that were most relevant

to local planning and decision-making. Consequently, through collaboration with County staff, guidance from the HIA Technical Advisory Committee and input from the community, determination was made that the greatest impact to health in the STV area could be achieved through a focus on promoting Physical Activity. Physical Activity is an essential component of a healthy lifestyle and can help prevent a range of health outcomes, including the three leading causes of death - heart disease, cancer, and stroke.

After extended research, community workshops, and HIA committee meetings, a set of recommendations that included land use guidance and planning policies were developed to positively impact Physical Activity in the STV community. These recommendations included the following:



## RECOMMENDATIONS

### **Enhance design standards for new residential and commercial development**

- Ensure walls surrounding developments include appropriately placed gaps to promote public walking and biking connectivity between neighborhoods.
- In Urban and Transitional place types encourage a traditional neighborhood design approach that utilizes a grid pattern with short block sizes to increase connectivity.
- Encourage new housing to face parks and open space to increase usership, community building, and safety.

### **Develop a policy for Complete Streets that accommodates all users – motorists, pedestrians, cyclists, and transit**

- Mandate sidewalks on both sides of the street for all development in urban areas and any developments with lots less than one acre in area. (PADs should never allow for a sidewalk to not be built in return for adding some other feature to the site).
- Develop streetscape standards that emphasize pedestrian and bike safety (lighting and traffic calming measures).
- Incorporate concepts from Complete Streets into standard road maintenance practice. (encourage resurfacing projects to include restriping for bike lanes).
- Increase streetscape landscape standards to promote enhanced tree cover and a more comfortable walking environment.
- Prioritize roads and corridors that provide the greatest ease of access via sidewalks and bike routes to the greatest amount of uses.

### **Expand accessibility to active recreation facilities**

- Continue to examine County Park and Open space management policies to address active recreation needs of the study area.
- Increase the percentage of active park space required of residential developments to meet a level of service comparable to community park amenities.

- Explore the development of formal joint use agreements between school district(s) and Pinal County to allow for enhanced public access to both outdoor and indoor recreational facilities after school hours.
- Incorporate a Recreation Needs Assessment into the Open Space and Trails Master Plan to address community inequities and preferred programming.

### **Provide an interconnected system of on- and off-street trails that connect desired destinations**

- Continue to expand trail network consistent with Open Space and Trail Department Strategic Business Plan (49% increase in miles of county regional trails acquired by 2021).
- Include trail connections in the design of new neighborhoods, preferably that connect to the established regional trail system.
- Work with HOA's and Third-Party groups to define/develop off-street trail connections within developed areas (adopt a trail program, etc.).

### **Develop land uses and transportation networks that support safety and comfort for pedestrians and bicyclists**

- Create a corridor network of safe pedestrian and bike routes to nearby destinations such as schools, regional park, community centers, hospitals, retail centers, and the college.
- Prioritize pedestrian and bike infrastructure investments based on the location of common destinations in the community like schools, regional park, community centers, hospitals, retail centers, and the college.
- Where possible, establish “one-off” routes for cyclists and pedestrians that are parallel to major arterial streets, and offer slower, lighter traffic.
- Integrate Safe Routes to Schools design principles (comfort, convenience, safety, and access)
- Consider incentives for developers or businesses that support the use of biking and walking (fast-track permitting, etc.).

# Introduction

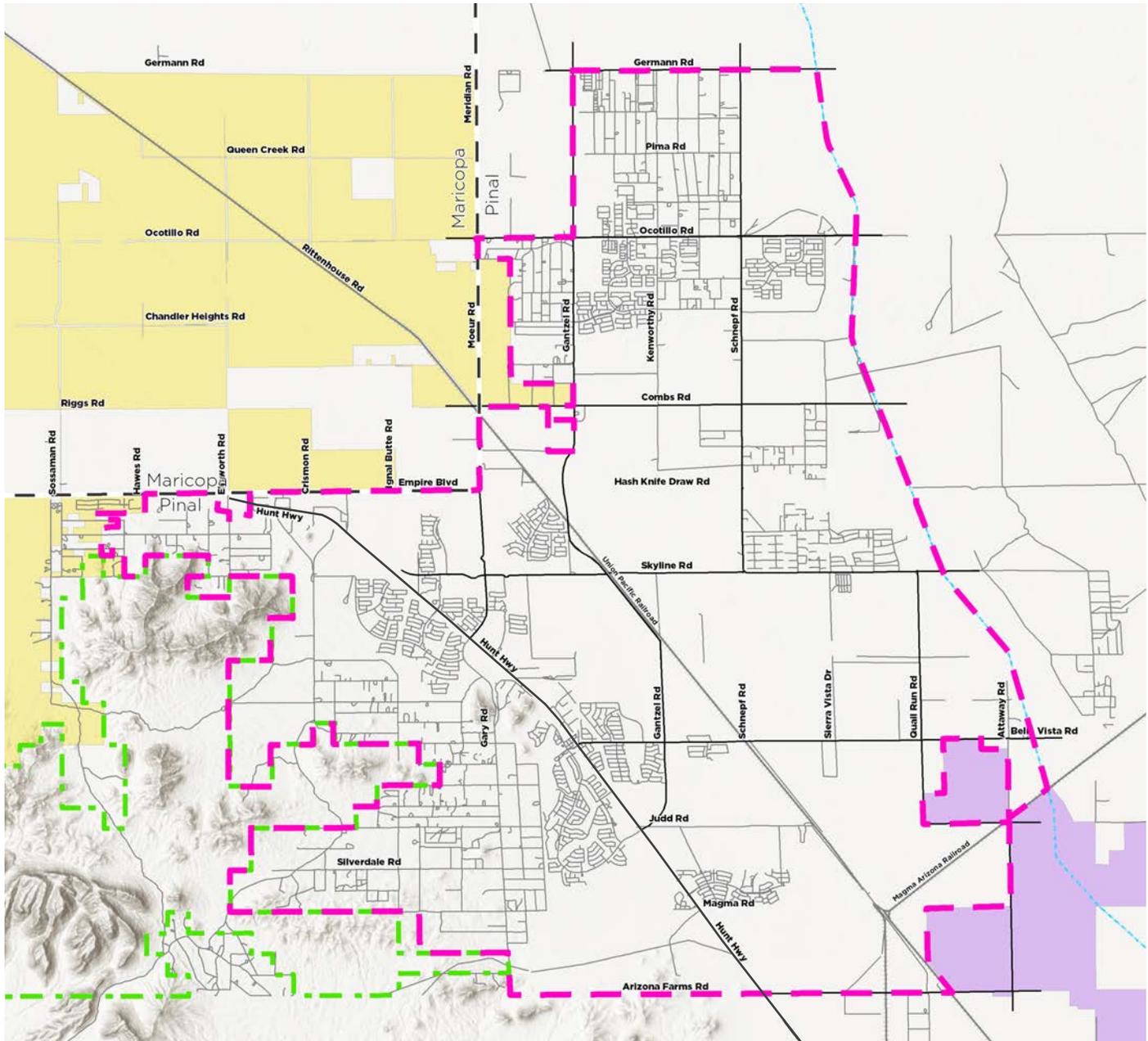


## SAN TAN VALLEY SPECIAL AREA PLAN

A Comprehensive Plan is a common vision or framework for development and growth within a County. It sets forth the principles, policies, physical plan and recommended strategies that have been embraced by a County to shape its future.

The purpose of a Special Area Plan (SAP) is to expand on the specific elements of a Comprehensive Plan to be more closely associated with community goals and actions that are specific to a defined area. It effectively acts as a link between implementing the broad policies of a Comprehensive Plan and providing further guidance to individual development in a particular location. The San Tan Valley Special Area Plan (STV SAP) explicitly examines the unique issues, concerns, and needs of the San Tan Valley area in order to establish public policy and guidance for future growth in this distinctive portion of Pinal County.

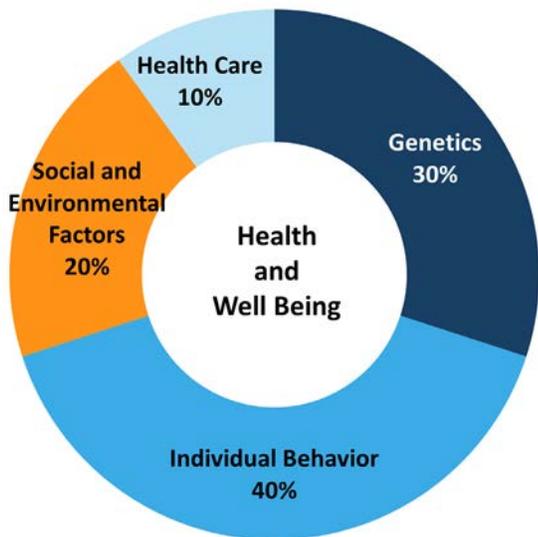
Located in the northwest portion of Pinal County, the San Tan Valley Area Plan encompasses over 70 square miles and extends from the CAP Canal on the east to the San Tan Mountains on the west and from Germann Road on the north to Arizona Farms Road on the south.



**Figure 1: San Tan Valley Planning Area**



Figure 2: Determinants of Health<sup>1</sup>



## BUILT ENVIRONMENT AND HEALTH

Often genetics and health care are the most common factors that are associated with determining one’s overall health. However, there is now a large body of research that supports the understanding that these factors only contribute to a small part of our overall health, and in fact social, behavioral and physical environments play a much larger role in determining a person’s health and likelihood of becoming sick or dying prematurely.

These combined factors are commonly referred to as the determinates of health because they have a direct impact on individual or community wide health outcomes (e.g. asthma, diabetes, obesity, heart disease, and mental health). This growing awareness that health is shaped by the places where we live, work, learn, and play has led community leaders, planners, and health professionals to embrace a more holistic approach to promoting a built environment that supports easy, healthy choices for all people.



## HIA OVERVIEW

A Health Impact Assessment (HIA) is a tool to evaluate the potential positive and negative impacts to health from a proposed project, policy, or plan. HIAs are conducted to inform decision-makers by using existing research, baseline health data, and input from stakeholders to determine potential effects, and then provide recommendations that in turn mitigate negative health impacts and increase health benefits. The standard steps of an HIA are further discussed in the “HIA Components” Section of this document.

In the interest of promoting a future state that supports healthy choices within San Tan Valley, the Pinal County Public Health Services District (PCPHSD) undertook this HIA to identify ways to make health a part of the STV SAP decision-making process. In comparison with more comprehensive HIA efforts, this HIA is not as extensive and is therefore referred to as a “rapid” HIA. This rapid HIA directly integrated health into the planning process by assessing the condition of the existing built-environment, predicting health consequences of alternative land planning outcomes, informing decision makers and the public about these health impacts, and providing realistic recommendations to prevent or mitigate negative health outcomes that were directly included into the final STV SAP.

# Methodology



## + Guiding Principles

The methodology conducted for this HIA encompassed an assortment of research. This included quantitative and qualitative data collection as well as literature review to determine current health related conditions in the San Tan Valley area and to examine the potential health impact of various build-out scenarios relative to the Special Area Plan planning effort.

## + Advisory Committee

In addition to this research framework, this HIA used community engagement to inform the process at key milestones. Intrinsic to this engagement effort was the formation of a Technical Advisory Committee (TAC). The HIA TAC included representatives from the public health, county planning, local education and healthcare sectors as well as San Tan Valley area community advocates. The HIA TAC provided guidance on key activities including defining the scope of the HIA, organization of Community Workshops as well as identification of final recommendations.

## + Community Participation

The STV SAP project team hosted two community workshops during the HIA process. The first workshop focused on introducing the community to the STV SAP project and obtaining their opinion regarding various assets, issues, and opportunities within San Tan Valley area relative to four primary topic areas: Neighborhoods and Community Character, Business and Economic Development, Transportation and Infrastructure, and Healthy Lifestyle. The second workshop shared three alternative land use scenarios that were developed based on feedback obtained during workshop one. A matrix of performance indicators was also provided to help inform participants regarding the potential health impacts of each scenario. Benefited with this information, participants were then asked to provide their preferences amongst the three scenarios.

## + HIA Components

The structure of this HIA effort adhered to the standard process that consists of 6 distinct steps<sup>2</sup>:



**Screening** — determines if an in-depth assessment is necessary and if HIA will add value to the decision-making process



**Scoping** — identifies the particular issues that should be addressed in the HIA and develops a plan for completing the assessment



**Assessment** — uses qualitative and quantitative information to create a profile of existing health conditions, and evaluates potential health impacts



**Recommendations** — suggests alternatives that could be implemented to improve health or, identifies actions that could be taken to manage health effects



**Reporting** — circulates the results of the HIA to decision makers, individuals implementing the plan/policy, and community stakeholders



**Monitoring and Evaluation** — reviews the effectiveness of the HIA process and evaluates the actual health outcomes as a result of the recommendations or project

# Screening & Scoping

## SCREENING

The HIA TAC conducted the initial screening for this HIA in December 2016. During this meeting, HIA TAC members were led through a list of five (5) pre-determined questions that were prepared to screen or determine if the completion of an HIA in association with the STV SAP was necessary and if an HIA would add value to the plans overall decision-making process.

The HIA TAC members had the opportunity to identify their preferred response to each question by using electronic hand-held polling devices. These hand-held pollers ensured for a 100% participation level. From the real-time responses, the HIA committee was then able to discuss the choices and provide further input as desired.

Based on group polling responses, and resulting discussion, the committee collectively determined that conducting an HIA as part of the STV Special Area Plan would be viable because the overall planning effort had the potential to impact a broad range of health outcomes, the HIA aligned with the project time line creating opportunity for collaboration, and there was strong belief that decision makers would support recommendations from the process.



## SCOPING

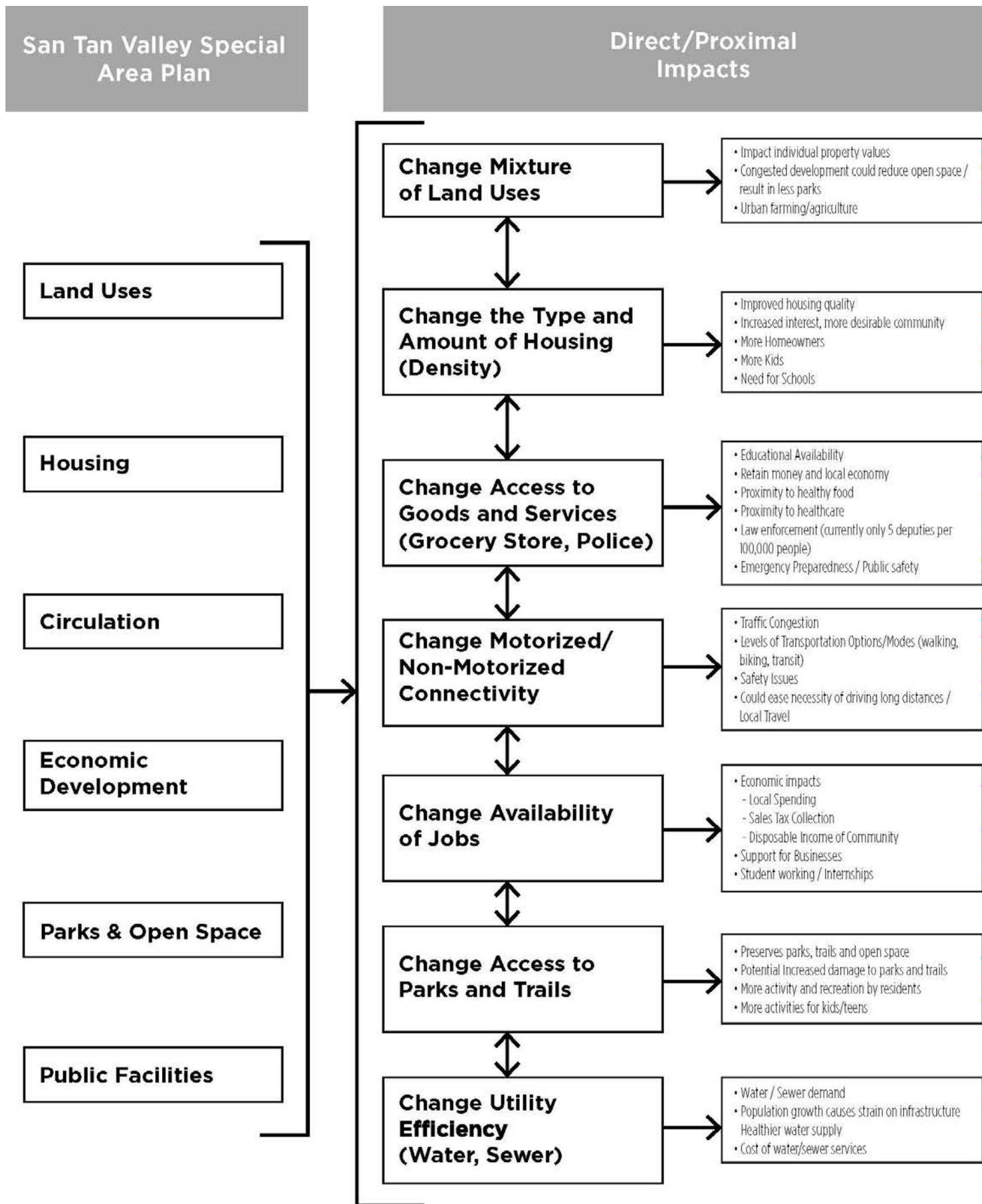
After completing the screening phase, the HIA team took the TAC through a scoping exercise. The goal of the scoping exercise was to identify the “universe” of health-related issues that could be impacted by the broad STV project and then determine what specific health issue(s) the HIA should focus on to keep the effort manageable and attainable. To facilitate this effort, a pathway diagram was constructed to hypothesize the connections between key issues identified by HIA TAC members and potential health outcomes. See Figure 3: Pathway Diagram on following page.

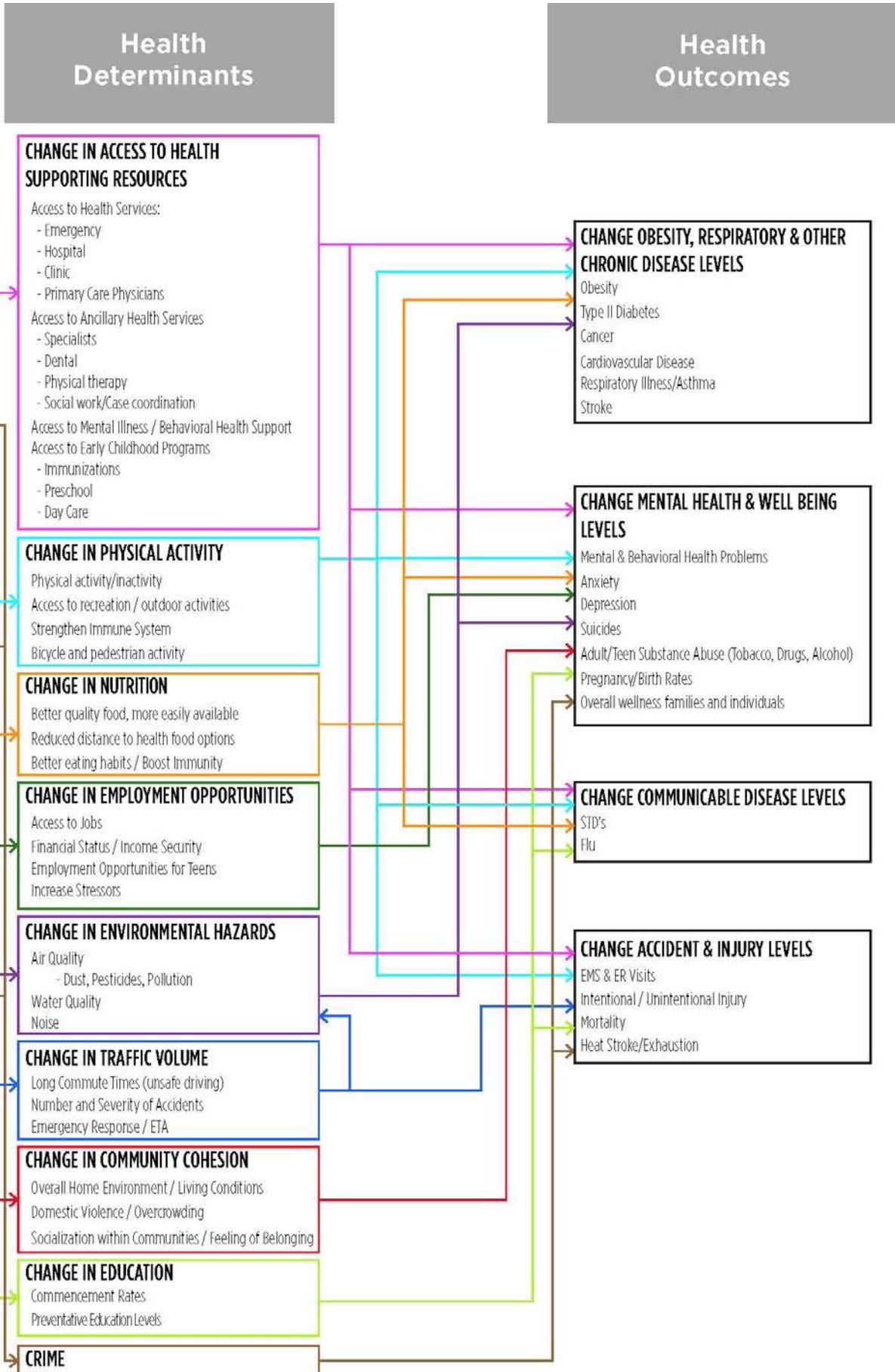
To cull the results of the Pathway Diagram and identify one or two health impacts/outcomes that the HIA should focus on, the committee considered the availability of data, identified the health issues that were of greatest concern to the community, and reviewed the health issues that had the highest potential for change within the scope of the STV SAP project.

Main themes that were discussed included “mental illness and services”, “obesity and chronic disease”, “access to goods and services”, and “access to parks and public facilities”. However, based on group discussion, the consensus amongst HIA TAC members identified “improving physical activity” within the study area (with an emphasis on children) as the best opportunity to affect change in the community. Potential community-wide improvement within this health focus could also have a positive “trickle down” effect and address several other health impacts/outcomes that were identified within the Pathway Diagram.

In addition, committee members agreed, the way we plan our communities can have a strong impact on the amount of activity residents engage in; therefore, how the built environment influences this widespread health issue was further identified as the primary impact to guide the assessment.

Figure 3: Pathway Diagram





# Assessment



The assessment portion of this HIA focused on the connection between the built environment and health, specifically relating to physical activity. This analysis was broken down into two stages: 1) understanding the existing conditions of the community and 2) evaluating what the implications of different future states (build-out scenarios) developed through the SAP planning process would mean for physical activity levels within the San Tan Valley community.

## PHYSICAL ACTIVITY PATHWAY EXISTING CONDITION ASSESSMENT

### + Demographics

The composition of an area's population such as its overall size, age distribution, and racial or ethnic mix may require different targeted strategies to encourage physical activity. To understand this relationship, this section provides a demographic overview of the STV, and is the basis for understanding the concentrations, size, and makeup of the community's population.

Over the last decade San Tan Valley has experienced remarkable population growth. In the decade from 2000 - 2010, San Tan Valley grew from a rural area of 4,976 residents to a suburban community of 86,665. As of 2016, San Tan Valley is now home to approximately 102,539. This dramatic 122% annual growth rate over the last 16 years is projected to continue in the future, although to a much lesser degree. The average household size in San Tan Valley is much higher at 3.34 people compared to Maricopa County at 2.69. Over 66% of residents are White, while only 22% self-identify as Hispanic, this is above and below the State averages respectively. San Tan Valley residents are also younger, with a median age of 29.7 compared to Maricopa County at 35.4 and Pinal County at 36.4.

### + Health Outcomes

**Hospitalizations** - Hospital discharge data can be a strong indicator of health factors in a defined area. Analysis of hospital discharge data from 2010-2014 for patients whose home of record was within the San Tan Valley boundaries, identified cardiovascular disease hospital admissions at 668 per 100,000 residents per year compared to Pinal County as a whole, which totaled 1,498 per 100,000 residents per year. While this data suggests an improved health condition in San Tan Valley relative to Pinal County and Arizona, the lower rate of hospitalizations due to cardiovascular disease can be attributed to the fact that San Tan Valley is comprised of a younger population (median age 29.7 vs. 36.4 in Pinal County).

**Mortality** - Examination of mortality rates in San Tan Valley confirmed the second leading cause of death within the planning area (behind malignant neoplasms - cancer) is disease of the circulatory system (cardiovascular disease) at 24.8%. The percent of deaths caused by accidents and injuries (external causes) in San Tan Valley is comparable to the rest of Pinal County at 8.2%.

Figure 4: Population Growth

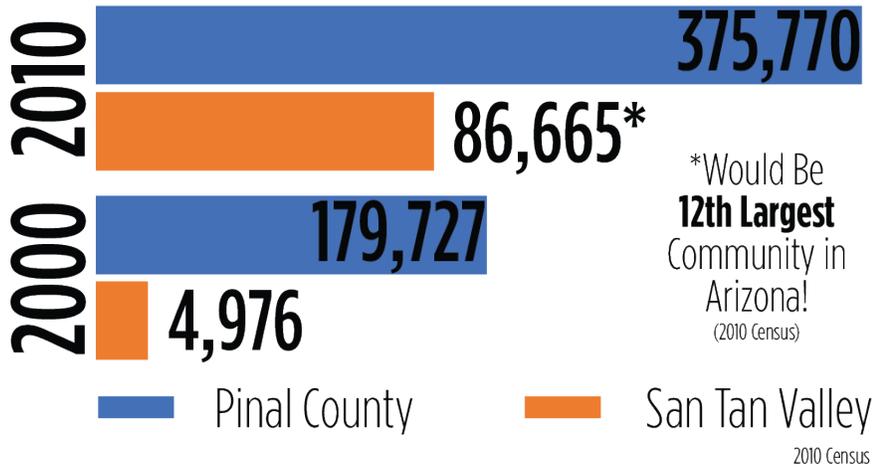
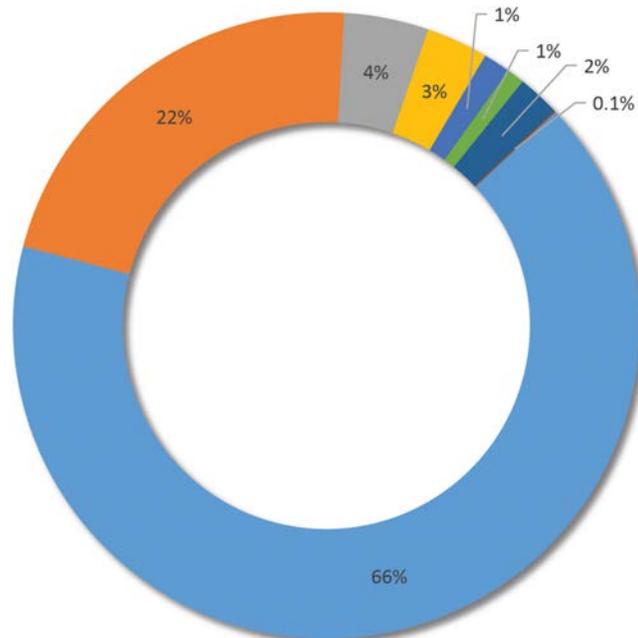


Figure 5: Median Age



Figure 6: Race and Ethnicity

- White (66%)
- Hispanic (22%)
- Black or African American (4%)
- Native American (3%)
- Asian (1%)
- Pacific Islander (1%)
- Two or More Races (2%)
- Other (.1%)



## + Health Factors

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**Obesity & Physical Activity** - Regular physical activity reduces the risk of obesity and many other chronic diseases, including cancer and heart disease<sup>3</sup>. The Centers for Disease Control and Prevention (CDC) recommends a minimum of 150 minutes per week of physical activity for adults, with additional health benefits gained from 300 minutes per week. It's recommended that children and adolescents engage in physical activity 60 minutes each day.

The CDC - Behavioral Risk Factor Surveillance System indicates 33% of adults in Pinal County are obese. This is over 5% higher than the national average and 8% higher than the State average. A review of the CDC - Youth Risk Behavior Surveillance System also showed only 21.7% of Arizona students in grades 9-12 achieve 1 hour or more of moderate to vigorous intensity physical activity daily, which is lower than the national average of 27.1%.

**Motor Vehicle Crash Data** - Many studies have identified lack of neighborhood safety (both in terms of crime and roadway safety levels) as a potential barrier to physical activity. Analysis of crash data within San Tan Valley showed there were 15 pedestrian and 19 bicycle collisions between 2013 and 2015 within the planning area. Over 59% of these collisions occurred on roads with speed limits below 30 miles per hour. Furthermore, nearly 47% of bicycle collisions occurred on streets without a striped bike lane.

## + Physical Environment

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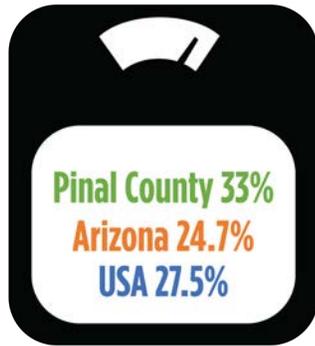
**Land Use & Transportation** - The layout of cities and communities and their transportation infrastructure are important factors in determining whether people walk or drive as a means of transportation<sup>4,5</sup>. For example, connectivity, density, and land use have all been found to influence the levels of pedestrian travel within cities.

The majority of the existing land use pattern in the STV area is dedicated to detached single-family residential development. In fact, approximately 99.5 percent of the existing housing stock in San Tan Valley is comprised of single-family units and only 0.5 percent is dedicated to multi-family units. There is also currently limited access to retail, commercial services, or areas of employment. This strong residential presence promotes dependence on the automobile and reduces the density of destinations that promote alternative modes of transportation. A review of commute modal share shows, 92.4% of trips are made by automobile, while only 2.3% of trips are made by walking or bicycle.

While these assessments are generalized, the results are consistent with data that shows San Tan Valley's predominantly spread out land use pattern is more suitable for automobile travel. However, at the local neighborhood scale, several developed locations within San Tan Valley are potentially quite suitable for pedestrians and cyclists by offering a mixture of land use types, a connected street system, and convenient park and school locations.

**Figure 7: Adult Obesity**

The **Percentage of Obese Adults** is an indicator of the overall health and lifestyle of a community.



Source: CDC - Behavioral Risk Factor Surveillance System (2010)

**Figure 8: Daily Physical Activity**



**Percent of Students** in grades 9-12 who achieve 1 hour or more of moderate-and/or vigorous-intensity **physical activity** daily.

**Arizona 21.7%**  
**USA 27.1%**

Source: CDC - Youth Risk Behavior Surveillance System (2013)



**Figure 9: Non- Vehicular Crashes**

Crashes in study area from 2013-2015

**1,754**

**9** were fatalities

ADOT, 2013-2015  
Crash Data



**19**



**15**

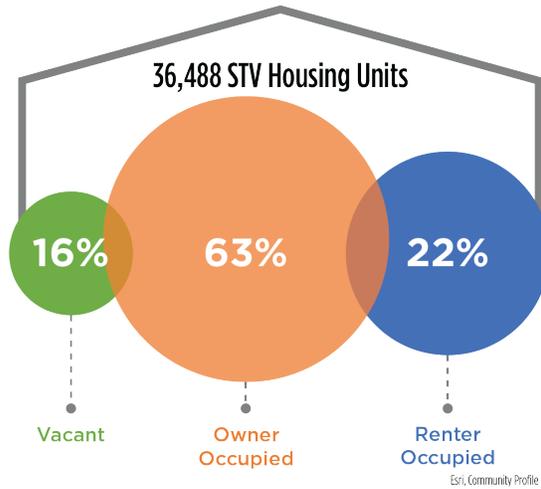
**Pedestrians**  
and **bicycle**

crashes in the study area from 2013-2015

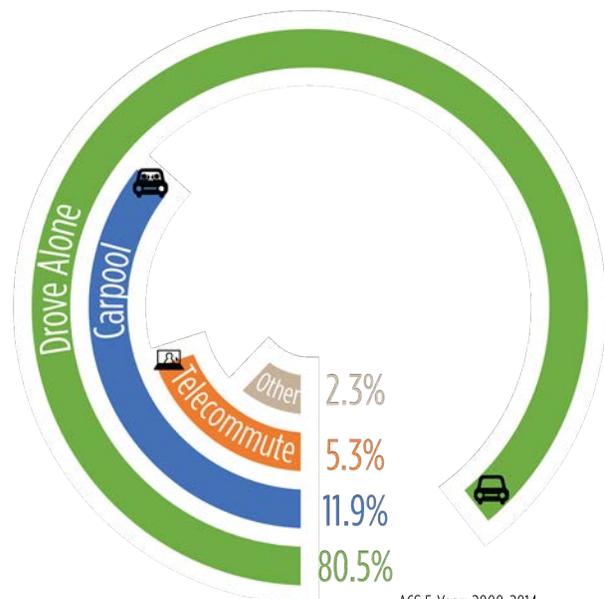
ADOT 2013-2015 Crash Data

**Figure 10: Total Housing Units**

San Tan Valley accounts for **21%** of all housing units in Pinal County.



**Figure 12: Commuting Modes**

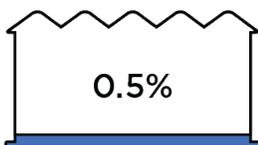


**Figure 11: Housing Type**



**99.5%**

**Single-Family**



**0.5%**

**Multi-Family**

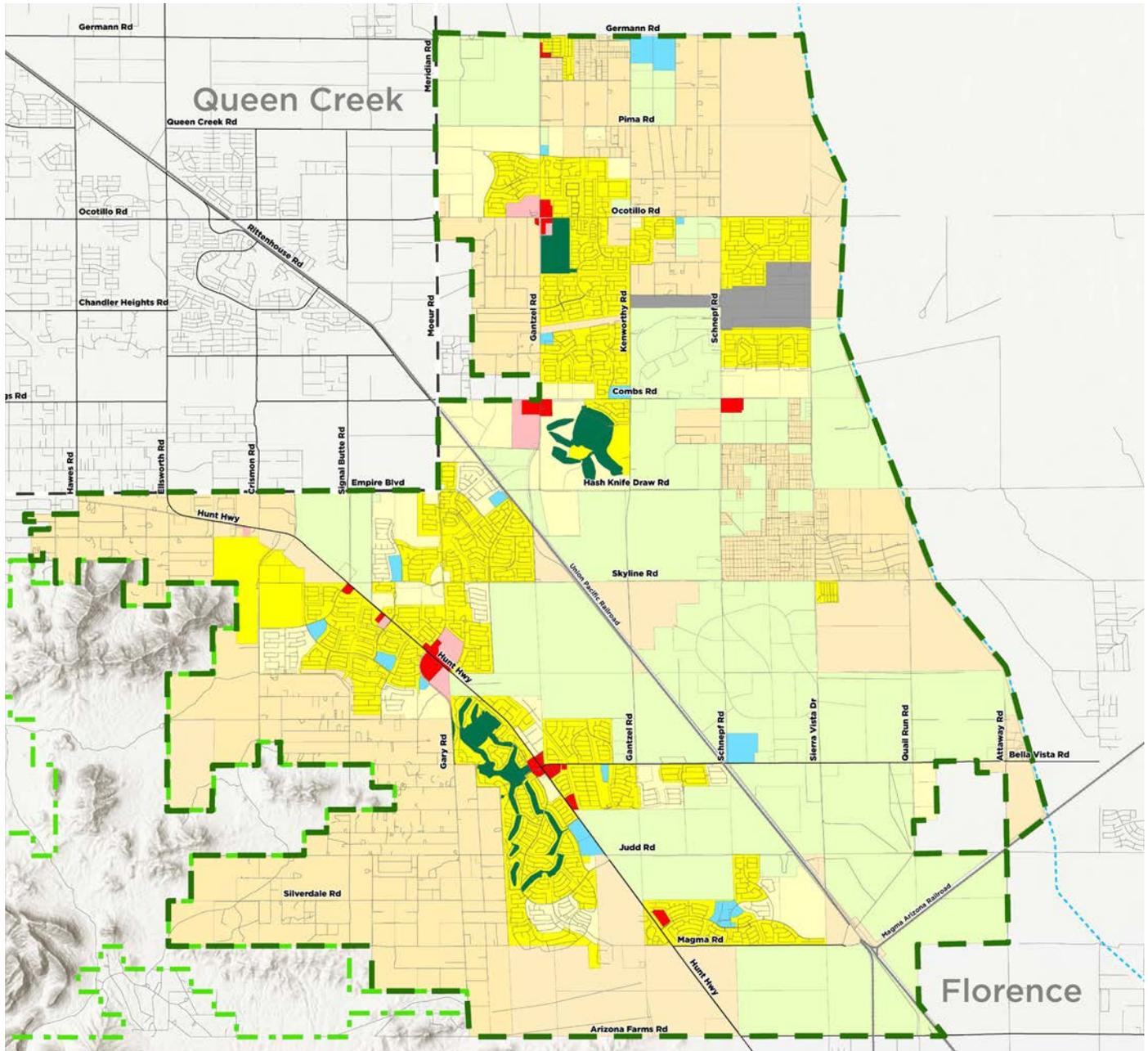


Figure 13: Existing Land Use

Legend		Existing Land Use	
	Study Area (70.66 sq mi)		Agriculture
	Arterials		Rural
	Streets		Suburban (Developing)
	Railroad		Suburban (Developed)
	CAP Canal		Commercial (Developing)
	San Tan Mountain Regional Park		Commercial (Developed)
			Industrial
			Public / Quasi-Public
			Golf Course
			Undeveloped

**Pedestrian & Bicycle Facilities** - The provision, design and condition of pedestrian and bicycle infrastructure in a community can have an impact on physical health. Research has shown that the presence of sidewalks, crosswalks, and bicycle lanes has a positive impact on increased physical activity<sup>6</sup>.

There are barriers to walking or bicycling in San Tan Valley. Although sidewalk connectivity within most developed subdivisions in San Tan Valley is fairly complete, they are frequently only on one side of the street. Sidewalk gaps are most pronounced on major roadways and result in restricting pedestrian connectivity between common desired destination points. A review of Walkscore.com, which utilizes available data to measure the walkability of a neighborhood on a scale of 0 to 100, with 100 being the most walkable, provided a Walk Score of 11 for the San Tan Valley community. This score reflects an environment where almost all errands require a car. Figure 15, also displays the limited number of striped, on road bicycle facilities within the community. Presently these limited facilities do not constitute an interconnected network, but merely offer isolated pedestrian and bicycle facilities within select developed subdivisions.

**Access to Healthy Food** - A study in the American Journal of Preventive Medicine found that neighborhood access to healthy food and safe places for physical activity matters. The study showed that children living in neighborhoods with healthy food and safe places for play are 56 percent less likely to be obese than children in neighborhoods without these features<sup>7</sup>.

Only 8.5% of San Tan Valley housing units are located within a half-mile distance of a grocery store. Conversely, over 91% of all housing units within the planning area are not within a typical walking or biking distance to healthy food options.

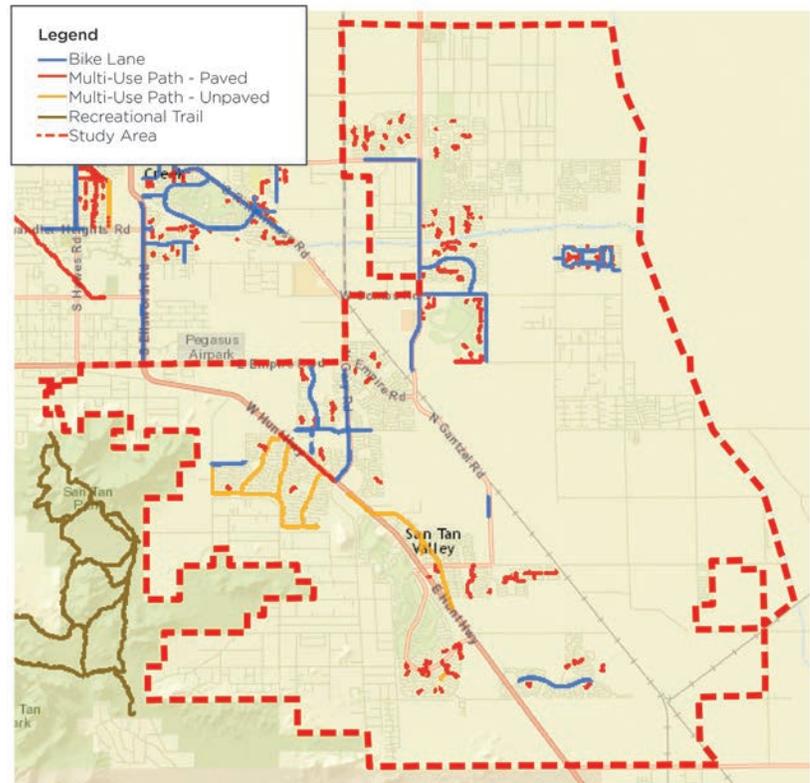
**Figure 14: Walk Score**



Almost all errands require a car.

\* Walkscore.com measures the walkability of a neighborhood.

**Figure 15: Bicycle Facilities**



**Figure 16: Access to Healthy Food**

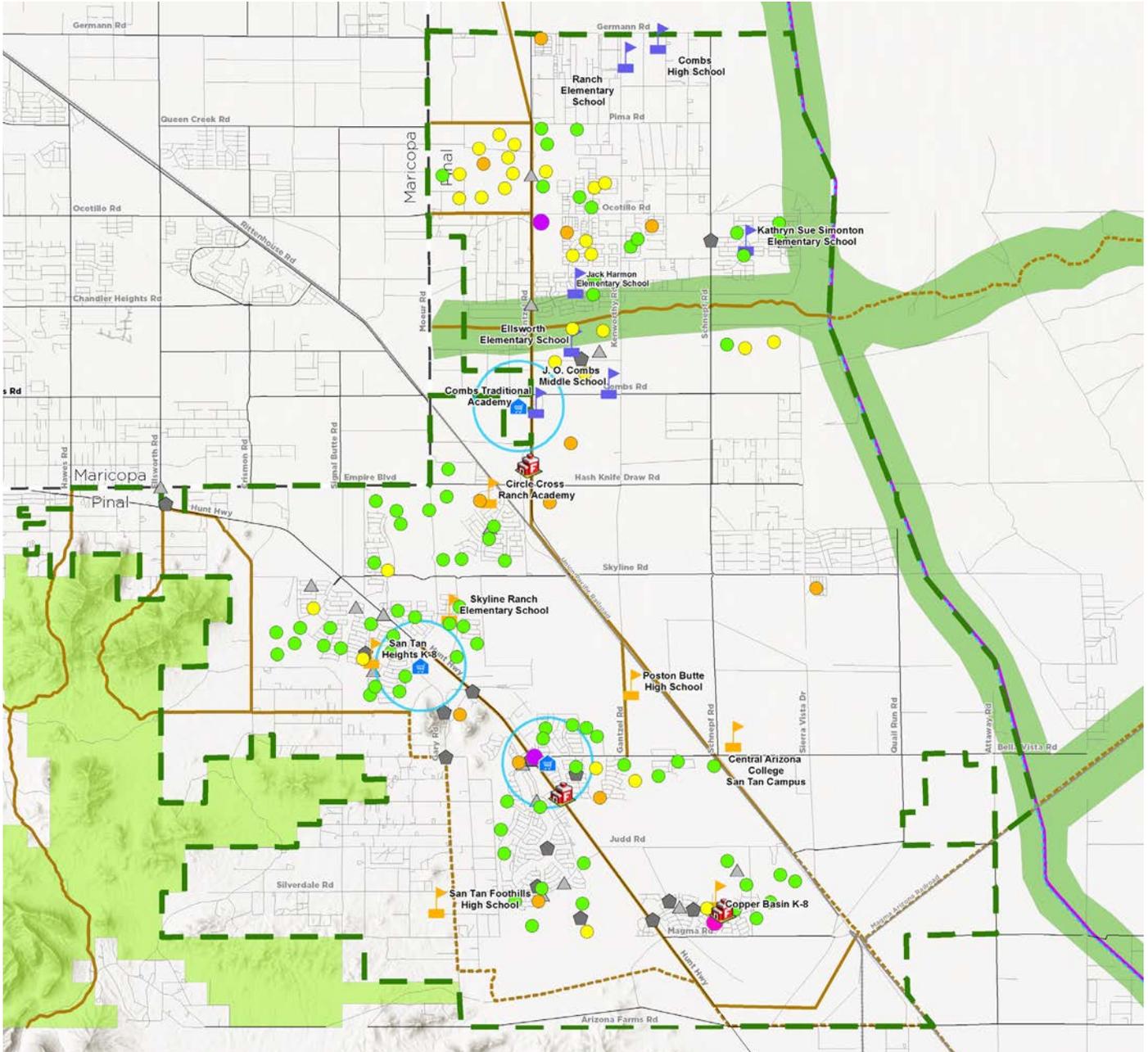


of STV housing units are within a 1/2 mile distance of a grocery store.

**Access to Recreational Facilities** - Various studies have shown associations between access to parkland and increased physical activity and sense of wellbeing<sup>9</sup>. According to a study by the Centers for Disease Control and Prevention (CDC), access to parkland resulted in a 25 percent more people exercising 3 or more days a week<sup>9</sup>.

The San Tan Valley area has unique natural resources including the San Tan Mountain Regional Park, located just outside the study area. Beyond the San Tan Mountain Regional Park and Copper Basin YMCA, there are no public recreation or park facilities located within the planning area. Generally, all existing recreation and park facilities in San Tan Valley are owned and maintained by individual subdivision homeowners associations (HOA) for the private use of their residents. Private recreation and park facilities typically consist of neighborhood type park amenities such as playgrounds, picnic benches, community swimming pools, and sport courts. Only a select number of private park facilities include ballfields such as soccer fields or baseball fields. The area is also served by several privately-owned golf courses that are open to the public.





**Figure 17: Recreational Facilities**

<p><b>Legend</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px dashed green; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Study Area</li> <li><span style="border-bottom: 1px solid black; width: 15px; margin-right: 5px;"></span> Arterials</li> <li><span style="border-bottom: 1px solid black; width: 15px; margin-right: 5px;"></span> Streets</li> <li><span style="border-bottom: 1px solid black; width: 15px; margin-right: 5px;"></span> Railroad</li> <li><span style="border-bottom: 1px dashed blue; width: 15px; margin-right: 5px;"></span> CAP Canal</li> <li> Rural Metro Fire Station Locations</li> </ul> <p><b>School District</b></p> <ul style="list-style-type: none"> <li> Florence Unified School District</li> <li> J.O. Combs Unified School District</li> </ul>	<p><b>Open Space &amp;</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #c8e6c9; margin-right: 5px;"></span> Proposed Open Space</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #e8f5e9; margin-right: 5px;"></span> San Tan Mountain Regional Park</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #ffcdd2; border-radius: 50%; margin-right: 5px;"></span> Recreation Center (HOA)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #c8e6c9; border-radius: 50%; margin-right: 5px;"></span> Parks with Recreation Amenities (HOA)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff9c4; border-radius: 50%; margin-right: 5px;"></span> Parks with Ballfields (HOA)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #e91e63; border-radius: 50%; margin-right: 5px;"></span> Private Gym</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #9c27b0; border-radius: 50%; margin-right: 5px;"></span> YMCA</li> </ul> <p><b>Trails</b></p> <ul style="list-style-type: none"> <li><span style="border-bottom: 1px solid purple; width: 15px; margin-right: 5px;"></span> Adopted County Trail Corridor</li> <li><span style="border-bottom: 1px solid orange; width: 15px; margin-right: 5px;"></span> Existing/Planned Multi-Use Trail Corridor</li> <li><span style="border-bottom: 1px solid brown; width: 15px; margin-right: 5px;"></span> Planned/Existing OHV Trail</li> <li><span style="border-bottom: 1px dashed orange; width: 15px; margin-right: 5px;"></span> Proposed Multi-Use Trail Corridor</li> <li><span style="border-bottom: 1px dashed yellow; width: 15px; margin-right: 5px;"></span> Proposed OHV Trail</li> </ul>	<p><b>Healthy Food Access</b></p> <ul style="list-style-type: none"> <li> Grocery Store</li> <li><span style="border: 1px solid blue; border-radius: 50%; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> Half-Mile Grocery Store Walk/Bike Zone</li> </ul> <p><b>Pedestrian/Bicyclist Crashes (2013-2015)</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #555; border-radius: 50%; margin-right: 5px;"></span> Pedestrian</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></span> Bicyclist</li> </ul>
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## + Community Engagement

**Community Workshop #1** - On February 22 & 23, 2017, a series of STV SAP workshops were hosted by the project team. Over the two meetings approximately 500 participants attended this open house style meeting. The following primary topic areas were reviewed with participants:

- Neighborhoods and Community Character
- Business and Economic Development
- Transportation and Infrastructure
- Healthy Lifestyle

Within each topic area participants were able to learn more about specific elements of the overall planning effort, pose questions to project team members, as well as provide direct feedback relative to predefined questions. A summary of participant responses is as follows:



**Figure 18: Providing alternative transportation options (e.g. sidewalks, trails, bike lanes, etc.) is...**

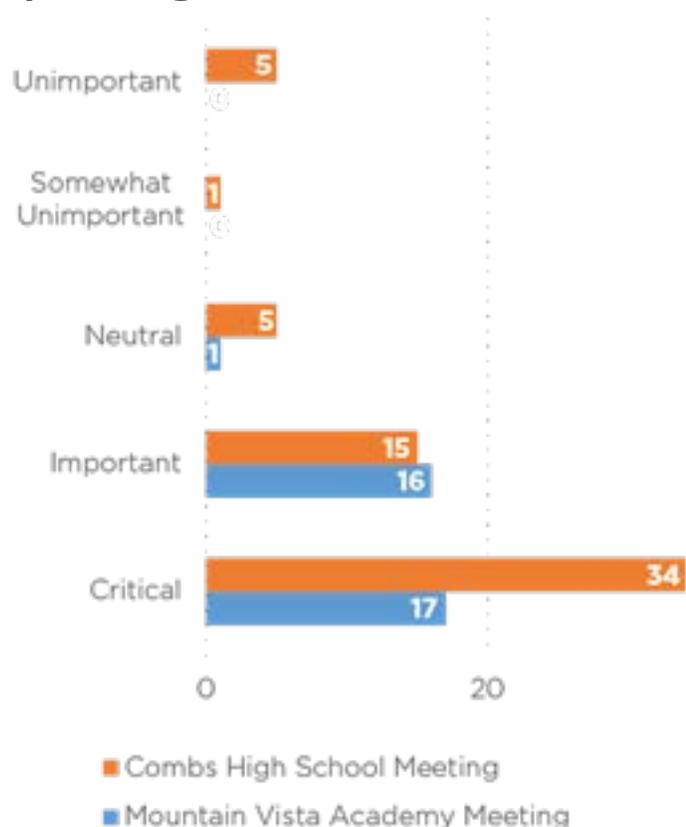


Figure 19: I feel safe to walk or bike in San Tan Valley...

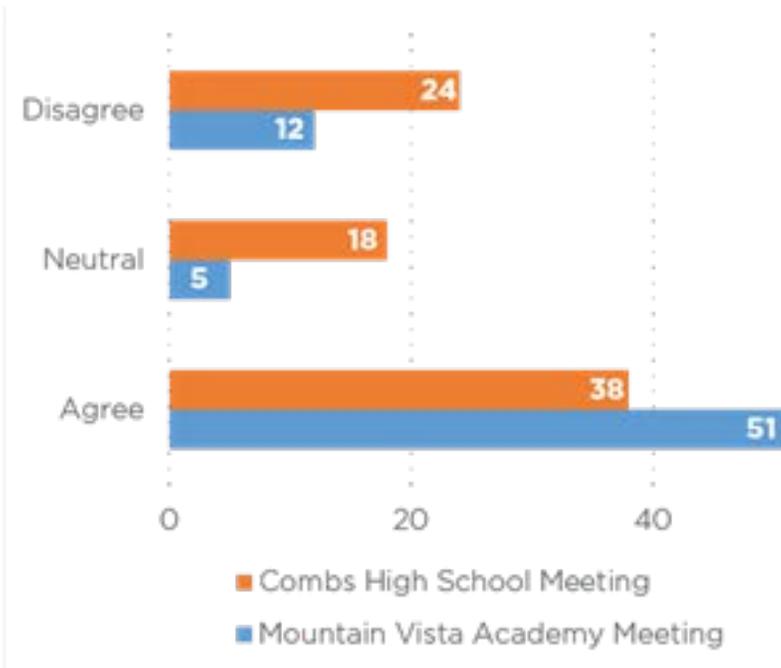


Figure 20: How often do you engage in some type of leisure physical activity?

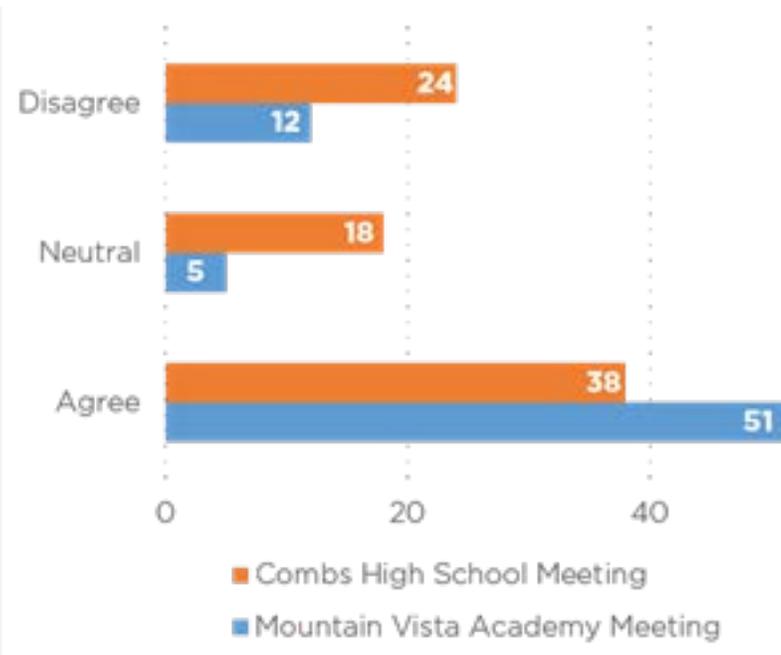


Figure 21: What do you feel are the greatest transportation infrastructure challenges facing STV?

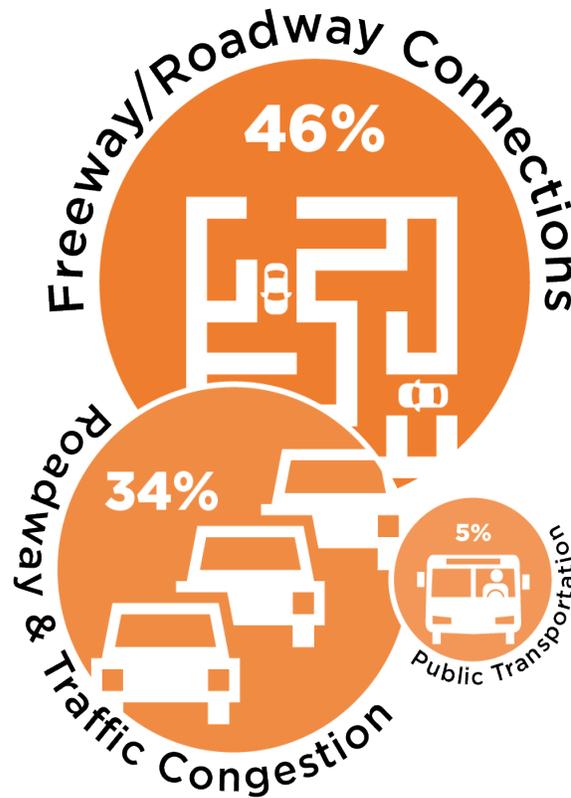
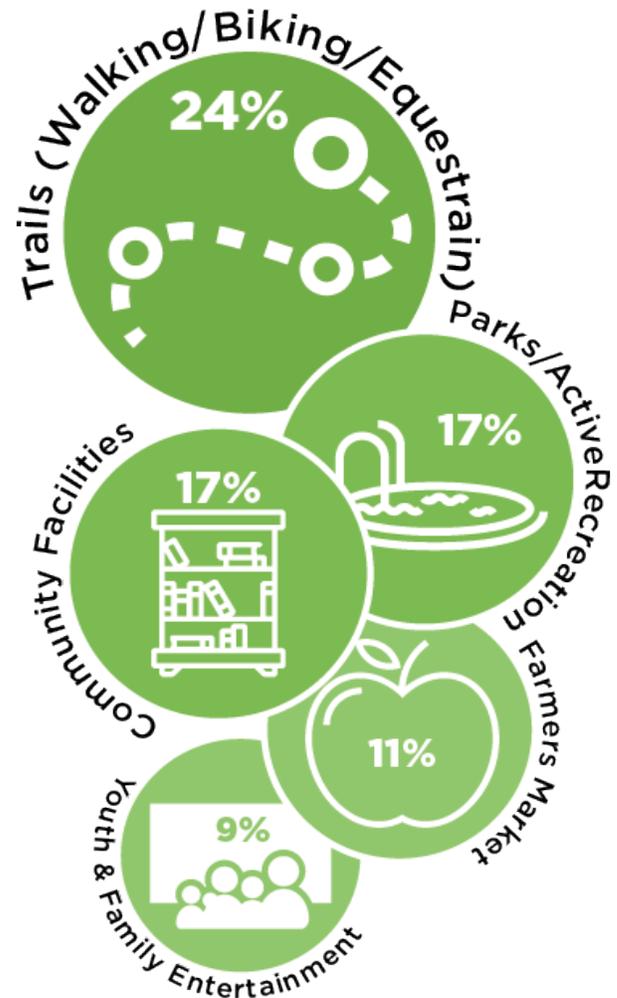


Figure 22: What Recreation Amenities/Services does San Tan Valley need more of?



# PHYSICAL ACTIVITY PATHWAY SCENARIO ASSESSMENT

## + Scenario Development

With the assessment of existing conditions completed, the project team applied this background knowledge to the development of three future land use states or scenarios as part of the greater STV SAP planning process:

### SCENARIO A

#### Business As Usual

This scenario assumes no change in existing development policies. Under this condition, suburban residential growth with minimal commercial development would continue to expand into currently undeveloped areas. Most residents would continue to commute to jobs outside of the San Tan Valley area. Employment opportunities in San Tan would remain limited to service related jobs, such as food services, education, and local trade professions. Vehicular travel would also continue to be the predominate mode of transportation within the community.

### SCENARIO B

#### Community Node

This scenario places increased residential density around existing commercial nodes to encourage developed neighborhoods to be more walkable. This enhanced mixture of residential land uses would also help to foster commercial growth by creating a higher concentration of consumer demand in each node. Strategically placed office type land uses near planned transportation corridors would increase professional employment opportunities in the area. However, most residents would still commute to jobs outside the San Tan Valley area. While vehicle travel would still be the primary mode of transportation, improved walkability would remove some trips from local roadways.

### SCENARIO C

#### Community Core

This scenario focuses on the establishment of a Community Core that would function as the economic and social hub of the San Tan Valley area. While traditional suburban residential and commercial growth would continue to expand in undeveloped areas; higher density residential, regional retail, and office uses would be encouraged to concentrate in a central urban environment. By integrating land uses, this core area would be more walkable, vibrant and foster a sense of community. People living, shopping, and recreating in the core would also bring professional employment opportunities and increased transportation options such as transit.

## + Health Indicators

To explicitly connect how the built environment may impact the health of residents within the study area, the project team along with the HIA TAC developed indicators of health, or ways of measuring the effects of how each land use scenario would impact physical activity levels. A description of each health indicator and associated evidence of how these indicators impact a community's health is as follows:

- Land Use Mix

Many studies have found a positive association between density and active transportation, indicating that a dense mix of land uses promotes physical activity. One study on the subject found more walking related to density, land use diversity, and urban design<sup>10</sup>. Another reported that density is among the most consistent positive correlates of walking and cycling. This reflects the consistent observation that more destinations closer together lead to more walking and cycling<sup>11</sup>.

- Number of Housing Units in Walkable/ Bikeable Places

People who live in walkable neighborhoods (i.e. areas that are designed to foster walking and biking to nearby destinations) are 2 times as likely to get enough physical activity as those who don't<sup>12</sup>.

- Projected Population within ¼ mile of trails
- Accessibility to Neighborhood Parks
- Accessibility to Community Parks
- Accessibility to Regional Parks

Adults who believe they have access to parks are almost twice as likely to meet physical activity recommendations<sup>13</sup>. Among children, higher numbers of parks and larger parks in a neighborhood correlate with increased physical activity. One study found that for each 1 percent increase in park area within a community, there was a 1.4 percent increase in physical activity<sup>14</sup>. In addition, living near a trail is associated with a 50% increase in the likelihood of meeting physical activity recommendations<sup>15,16</sup>.

- Transportation Options
- Average Estimated Vehicle Miles Traveled

In a study of counties across the United States, researchers found that residents of the most sprawling counties walk less, weigh more, and have a greater prevalence of hypertension than their counterparts in more densely built counties<sup>17</sup>. Each additional hour per day spent in a car increases the odds of obesity by 6%, while each additional kilometer walked results in about a 5% reduction in the odds<sup>18</sup>.

## + Scenario Health Impact

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Both qualitative data based upon research and quantitative data based on statistical land use model assumptions as well as GIS mapping was used to rate how each indicator impacted health. The performance of each indicator within each scenario was then evaluated against the other scenarios and rated based on the following scale:

- **Negative** Impact on Health

Land use patterns and development types discourage healthy activities like walking or biking and promote dependence on vehicular travel. This results in a higher likelihood of negative health outcomes like increased obesity, respiratory illness, and chronic disease levels.

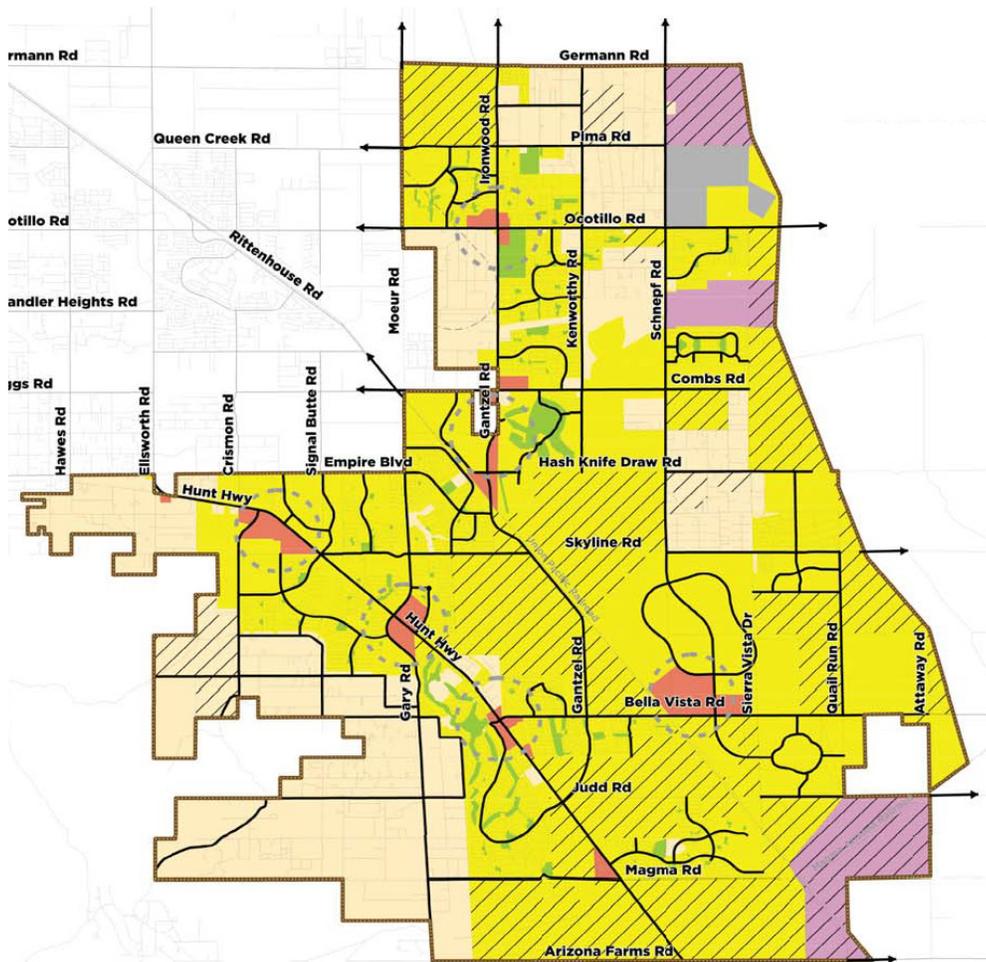
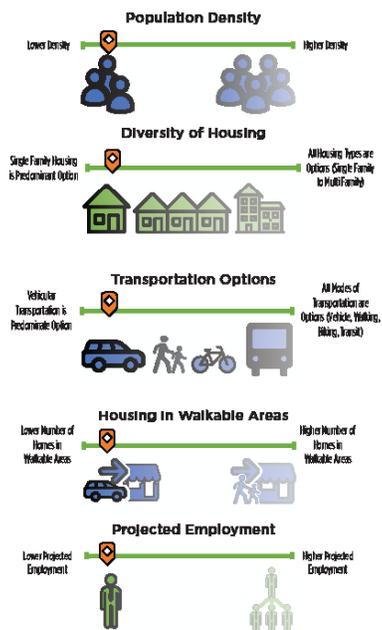
- **Moderate** Impact on Health

Land use patterns and development types provide opportunities for walking and biking, but vehicular travel is still the primary means of transportation. This results in moderate improvements to health outcomes like lower levels of obesity, respiratory illness, and chronic disease.

- **Positive** Impact on Health

Land use patterns and development types encourage healthy activities like walking and biking and reduce dependency on vehicular travel. This results in the greatest potential for positive improvements to health outcomes like obesity, respiratory illness, and chronic disease levels.

### Scenario Indicators

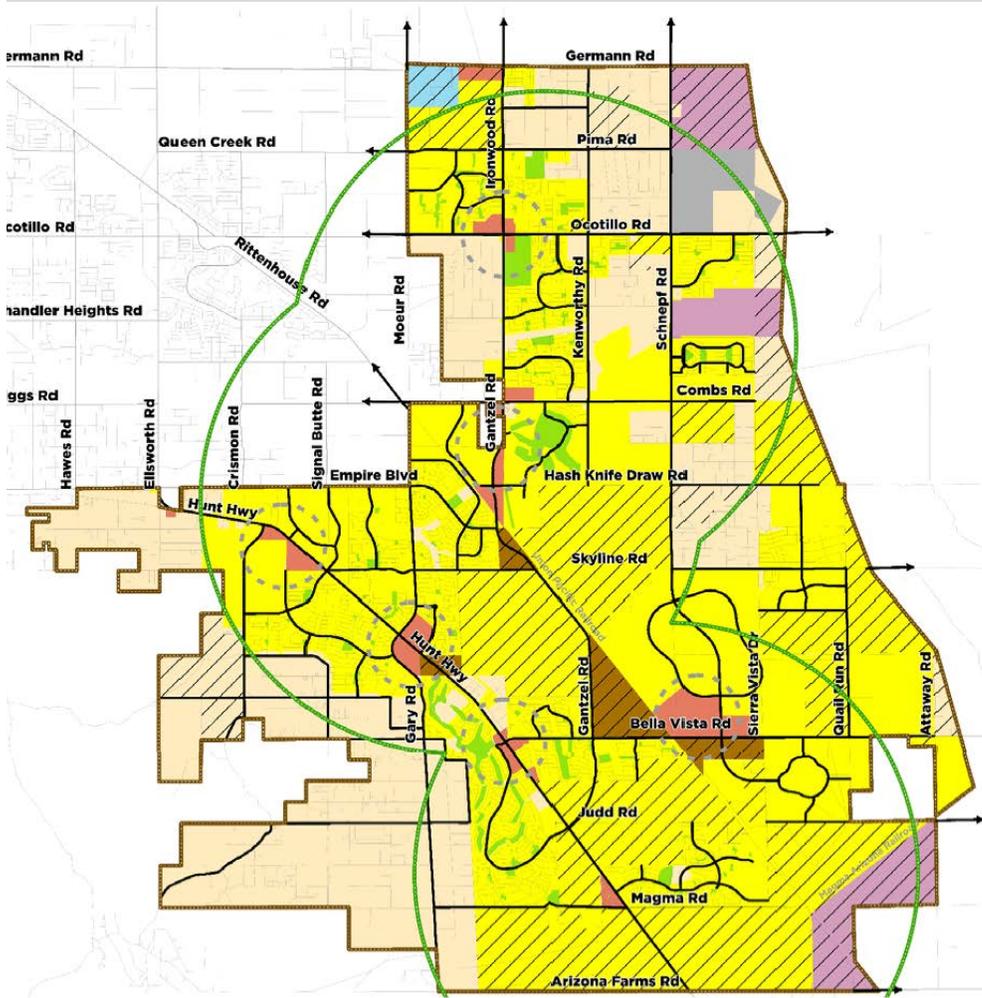


Health Indicator	Health Assessment Scenario A (at buildout)
Land Use Mix	
Number of Housing Units in Walkable/Bikeable Places	7,385
Projected Population within 1/4 mile of trails	68,060
Accessibility to Neighborhood Parks	
Accessibility to Community Parks	
Accessibility to Regional Parks	
Transportation Options	
Average Estimated Vehicle Miles Traveled	

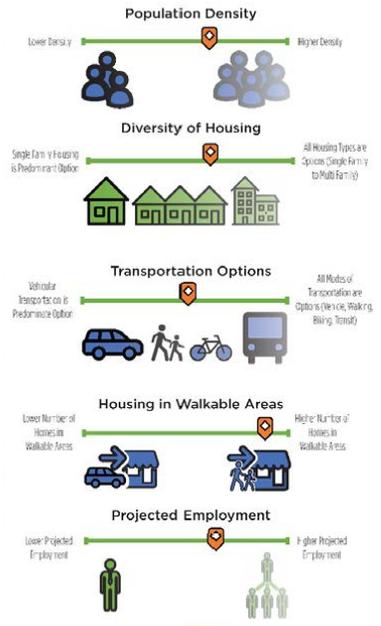
## Figure 23: Scenario A - Business As Usual

#### Legend

- San Tan Valley Study Area
- Rural Living
- Military
- Arterials
- Suburban Neighborhood
- Open Space
- Streets
- Urban Transitional
- Undeveloped Greenfield
- Community Center
- Walkable/Bikeable Zone (0.5 Miles)
- Suburban Office
- Community Park Service Area (3 Miles)
- Railroad
- Employment Center
- Noise Sensitive Area



**Scenario Indicators**



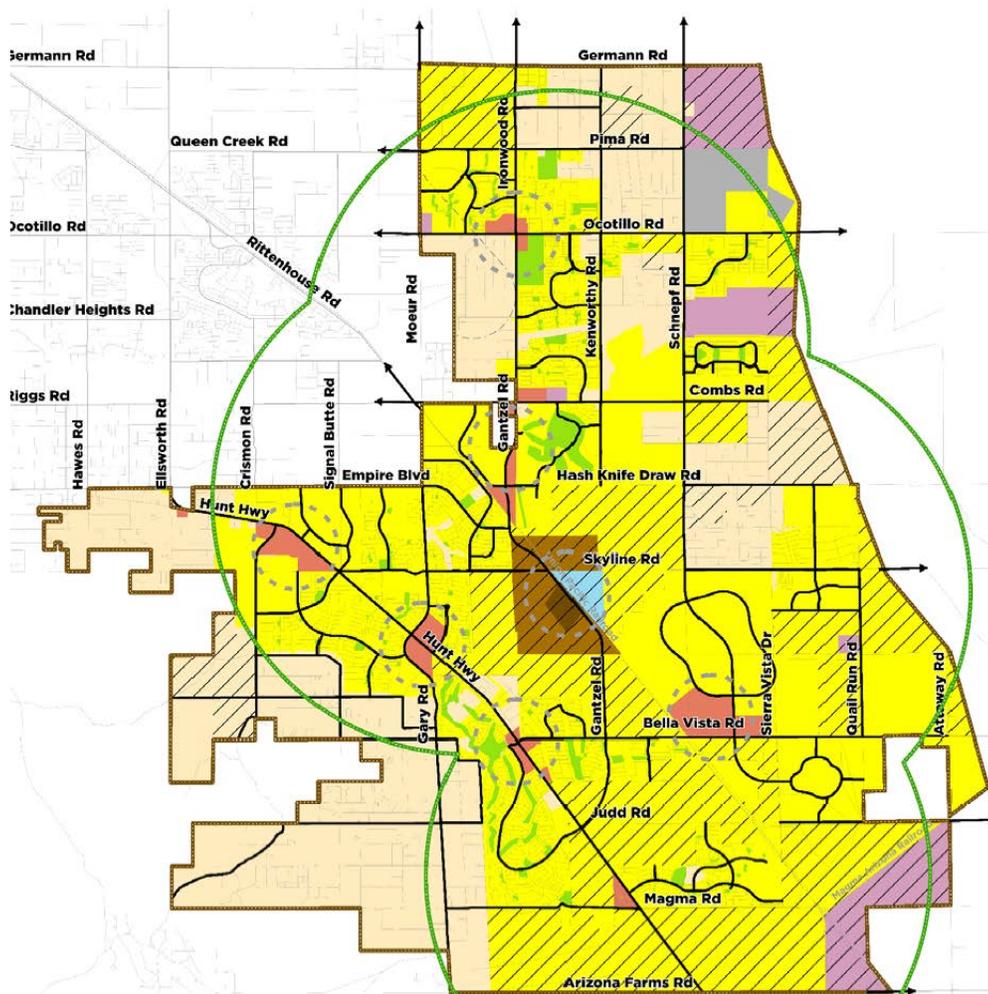
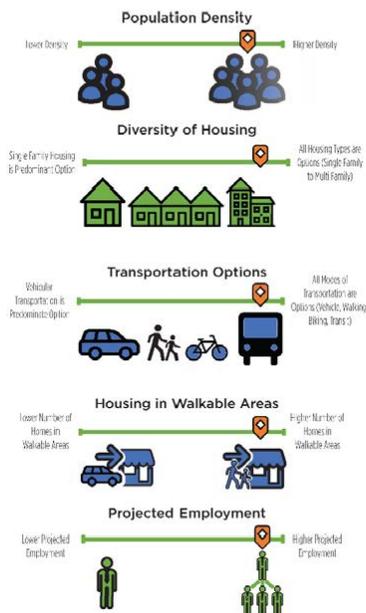
**Figure 24: Scenario B - Community Node**

Health Indicator	Health Assessment Scenario B (at buildout)
Land Use Mix	
Number of Housing Units in Walkable/Bikeable Places	11,452
Projected Population within 1/4 mile of trails	74,345
Accessibility to Neighborhood Parks	
Accessibility to Community Parks	
Accessibility to Regional Parks	
Transportation Options	
Average Estimated Vehicle Miles Traveled	

**Legend**

- San Tan Valley Study Area
- Rural Living
- Military
- Arterials
- Suburban Neighborhood
- Open Space
- Streets
- Urban Transitional
- Undeveloped Greenfield
- Railroad
- Community Center
- Walkable/Bikeable Zone (0.5 Miles)
- Suburban Office
- Community Park Service Area (3 Miles)
- Employment Center
- Noise Sensitive Area

### Scenario Indicators



Health Indicator	Health Assessment Scenario C (at buildout)
Land Use Mix	
Number of Housing Units in Walkable/Bikeable Places	23,042
Projected Population within 1/4 mile of trails	74,855
Accessibility to Neighborhood Parks	
Accessibility to Community Parks	
Accessibility to Regional Parks	
Transportation Options	
Average Estimated Vehicle Miles Traveled	

## Figure 25: Scenario C - Community Core

### Legend

- San Tan Valley Study Area
- Rural Living
- Military
- Arterials
- Suburban Neighborhood
- Open Space
- Streets
- Urban Transitional
- Undeveloped Greenfield
- Railroad
- Community Center
- Walkable/Bikeable Zone (0.5 Miles)
- Noise Sensitive Area
- Suburban Office
- Community Park Service Area (3 Miles)
- Employment Center

## + Community Engagement

**Community Workshop #2** - In November 2017 a second series of community workshops were held to share the three alternative land use scenarios along with their associated health indicators. Benefited with this information, participants were then asked to identify what they liked and disliked about each alternative. General comments shared included:



### SCENARIO A

#### Business As Usual

- ✓ Like rural flavor, that is why I moved here
- ✗ No plan - vomiting housing development
- ✗ Not enough parks and trails

### SCENARIO B

#### Community Node

- ✓ Rural living with community centers
- ✓ Rural suburban with trails (walkable, bikeable, horse rideable)
- ✗ Nodes should be connected by alternative transportation
- ✗ No Center
- ✗ Too much suburban, more employment and commercial first

### SCENARIO C

#### Community Core

- ✓ Central community gathering location
- ✓ Walkability of community core
- ✓ Enhanced business and employment opportunities
- ✓ Focus on transportation options
- ✓ Parks and walking trails
- ✗ Too many houses
- ✗ Distribute employment
- ✗ Not enough open space

## + Preferred Plan

Based on health indicators and public feedback attained from Community Workshop 2, Scenario C - Community Core, was the most favored of the three scenarios. However, the distributed activity nodes presented in Scenario B - Community Nodes also received favorable recognition. Based on this collective feedback, a hybrid "preferred" scenario was derived for the study area. This land use plan maintains the desired mixed-use central gathering location as well as promotes more active community nodes to provide walkable destinations throughout the study area. Upon approval within the STV SAP, the resulting preferred scenario will be used to guide development and promote healthy choices in relation to physical activity within the overall study area.

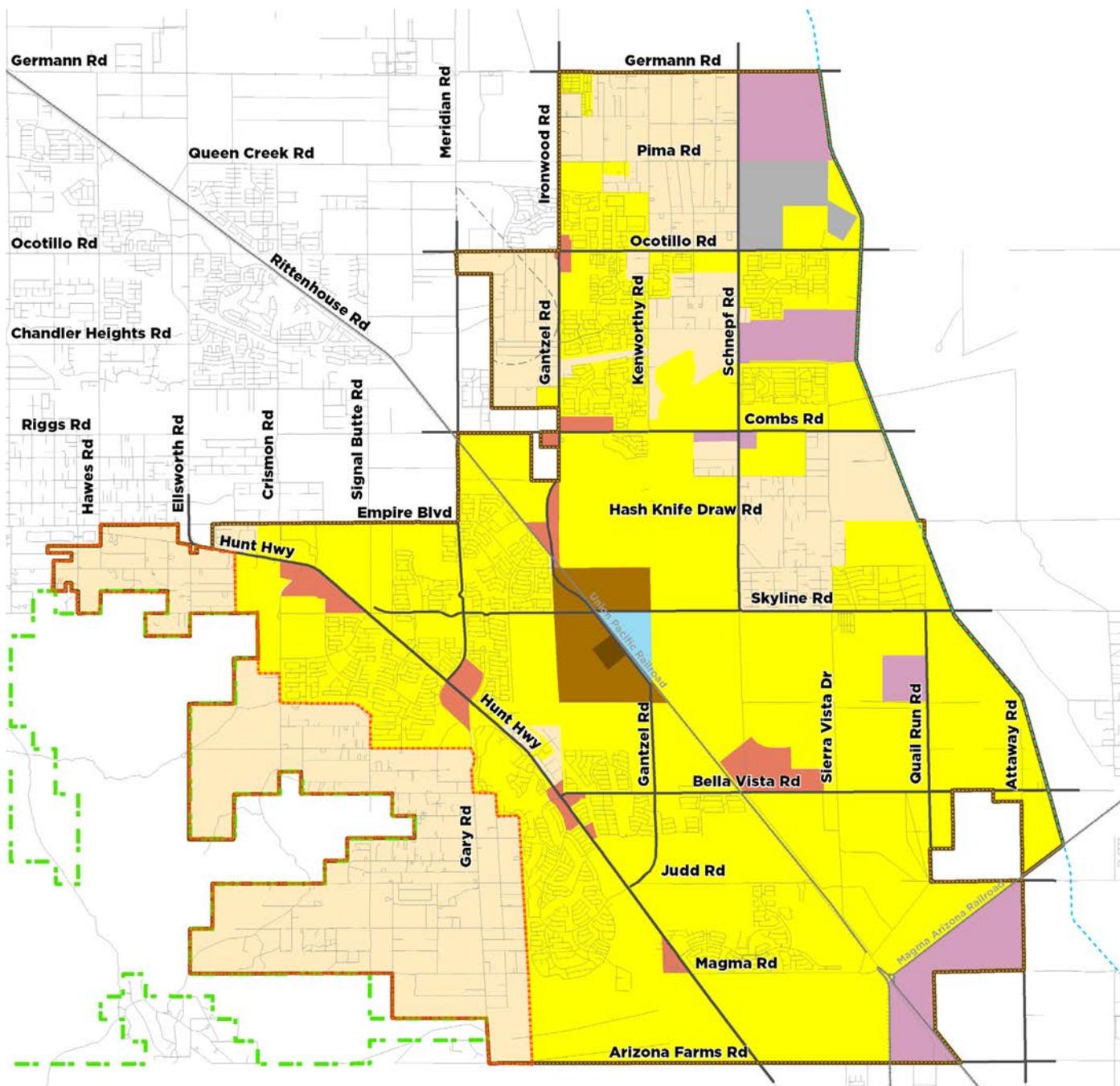


Figure 26: Preferred Land Use Plan

Legend		Place Types	
	San Tan Valley Study Area		Rural Living
	San Tan Mountain Regional Park		Suburban Neighborhood
	San Tan Foothills Sub- Area		Urban Transitional
	Noise Sensitive Area		Urban Center
	CAP Canal		Community Center
	Railroad		Suburban Office
	Parkway/ Arterials		Employment Center
			Military

# Findings & Recommendations



To help realize the anticipated benefits and positive changes to health outcomes within San Tan Valley, the following recommendations are provided. Recommendations were developed through research of best practices, healthy design guidance documents, and consultation with the HIA TAC.

## + Enhance design standards for new residential and commercial development

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- Ensure walls surrounding developments include appropriately placed gaps to promote public walking and biking connectivity between neighborhoods.
- In Urban and Transitional place types encourage a traditional neighborhood design approach that utilizes a grid pattern with short block sizes to increase connectivity.
- Encourage new housing to face parks and open space to increase usership, community building, and safety.

## + Develop a policy for Complete Streets that accommodates all users - motorists, pedestrians, cyclists, and transit

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- Mandate sidewalks on both sides of the street for all development in urban areas and any developments with lots less than one acre in area. (PADs should never allow for a sidewalk to not be built in return for adding some other feature to the site).
- Develop streetscape standards that emphasize pedestrian and bike safety (lighting and traffic calming measures).
- Incorporate concepts from Complete Streets into standard road maintenance practice. (encourage resurfacing projects to include restriping for bike lanes).
- Increase streetscape landscape standards to promote enhanced tree cover and a more comfortable walking environment.
- Prioritize roads and corridors that provide the greatest ease of access via sidewalks and bike routes to the greatest amount of uses.

## + Expand accessibility to active recreation facilities

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- Continue to examine County Park and Open space management policies to address active recreation needs of the study area.
- Increase the percentage of active park space required of residential developments to meet a level of service comparable to community park amenities.
- Explore the development of formal joint use agreements between school district(s) and Pinal County to allow for enhanced public access to both outdoor and indoor recreational facilities after school hours.
- Incorporate a Recreation Needs Assessment into the Open Space and Trails Master Plan to address community inequities and preferred programming.

## **+ Provide an interconnected system of on- and off-street trails that connect desired destinations**

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- Continue to expand trail network consistent with Open Space and Trail Department Strategic Business Plan (49% increase in miles of county regional trails acquired by 2021).
- Include trail connections in the design of new neighborhoods, preferably that connect to the established regional trail system.
- Work with HOA's and Third-Party groups to define/develop off-street trail connections within developed areas (adopt a trail program, etc.).

## **+ Develop land uses and transportation networks that support safety and comfort for pedestrians and bicyclists**

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- Create a corridor network of safe pedestrian and bike routes to nearby destinations such as schools, regional park, community centers, hospitals, retail centers, and the college.
- Prioritize pedestrian and bike infrastructure investments based on the location of common destinations in the community like schools, regional park, community centers, hospitals, retail centers, and the college.
- Where possible, establish “one-off” routes for cyclists and pedestrians that are parallel to major arterial streets, and offer slower, lighter traffic.
- Integrate Safe Routes to Schools design principles (comfort, convenience, safety, and access)
- Consider incentives for developers or businesses that support the use of biking and walking (fast-track permitting, etc.).

# Monitoring & Evaluation

This HIA was done concurrently with the STV SAP planning process. Consequently, the HIA directly affected the SAP land use planning and policy development outcomes. The HIA also provided the added value of increasing the understanding of connections between land use planning and health outcomes amongst the Pinal County Community Development Department, the Pinal County Health Services District, and other participating community stakeholders, which will certainly influence their work in the future.

Since the HIA recommendations have already been incorporated into the STV SAP, and thus monitoring the development plan document itself will not be necessary, monitoring the impact of this HIA should involve tracking those health indicators identified in the “Assessment” Section of this report relative to the implementation of the STV SAP goals, policies, and land use plan. To further help monitor the effectiveness of planning for physical activity in STV, Pinal County Community Development and Health Services District staff could develop short questionnaires that could be posted online or through social media as well as distributed at schools, health clinics, and various events.

Due to resource restriction and the long-term nature of the STV SAP, the HIA team was unable to conduct a separate outcome evaluation. However, by utilizing the existing conditions data presented in the “Assessment” Section as a baseline, Pinal County could analyze and compare current figures with actual conditions in 5-year intervals. This type of ongoing evaluation could help foster continued support for health based planning initiatives within the STV area. This data could also be used to support future grant opportunities for health based programs or improvements in STV.



## Health Indicators

- Land Use Mix
- Number of Housing Units in Walkable/ Bikeable Places
- Population within ¼ mile of trails
- Total Acreage Neighborhood Parks per 1,000 Residents
- Total Acreage Community Parks per 1,000 Residents
- Total Acreage Regional Parks per 1,000 Residents
- Total Miles of Bike Lanes and Sidewalks
- Average Estimated Vehicle Miles Traveled

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