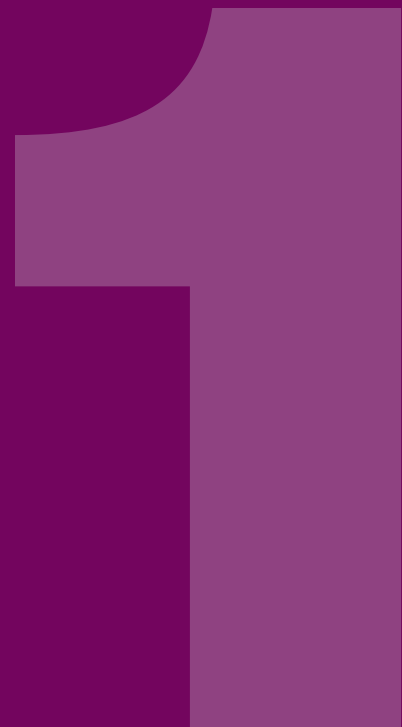


SOCIOECONOMIC INEQUITIES



Are there areas where populations have disproportionately poorer health conditions?
Are there areas of the city that have higher rates of crime?
How do housing types and density relate to the Equity Zones?

Socioeconomic Inequities

- **Equity Zone Mapping**
 - CDC Social Vulnerability
 - Rental Tenure
 - Public Health Data
 - Crime Frequency
 - Informal Housing
 - Encampment Frequency
- **Equity Zone Analysis**
 - Housing Types
 - Crime
 - Encampments



EQUITY ZONE MAPPING



Equity Zone Summary

A foundational component of this effort is the identification of “Equity Zones,” or areas of the City of Tempe with above average concentrations and risks of socioeconomic inequity and public health concerns.

Map 1 highlights Equity Zones identified within the City of Tempe. Equity Zones signify areas that may benefit from targeted investments to advance equitable outcomes within Tempe.

The Equity Zones are identified through layering and weighting factors. Multiple considerations helped determine how factors are weighed, including top challenges to equity derived from community perceptions.

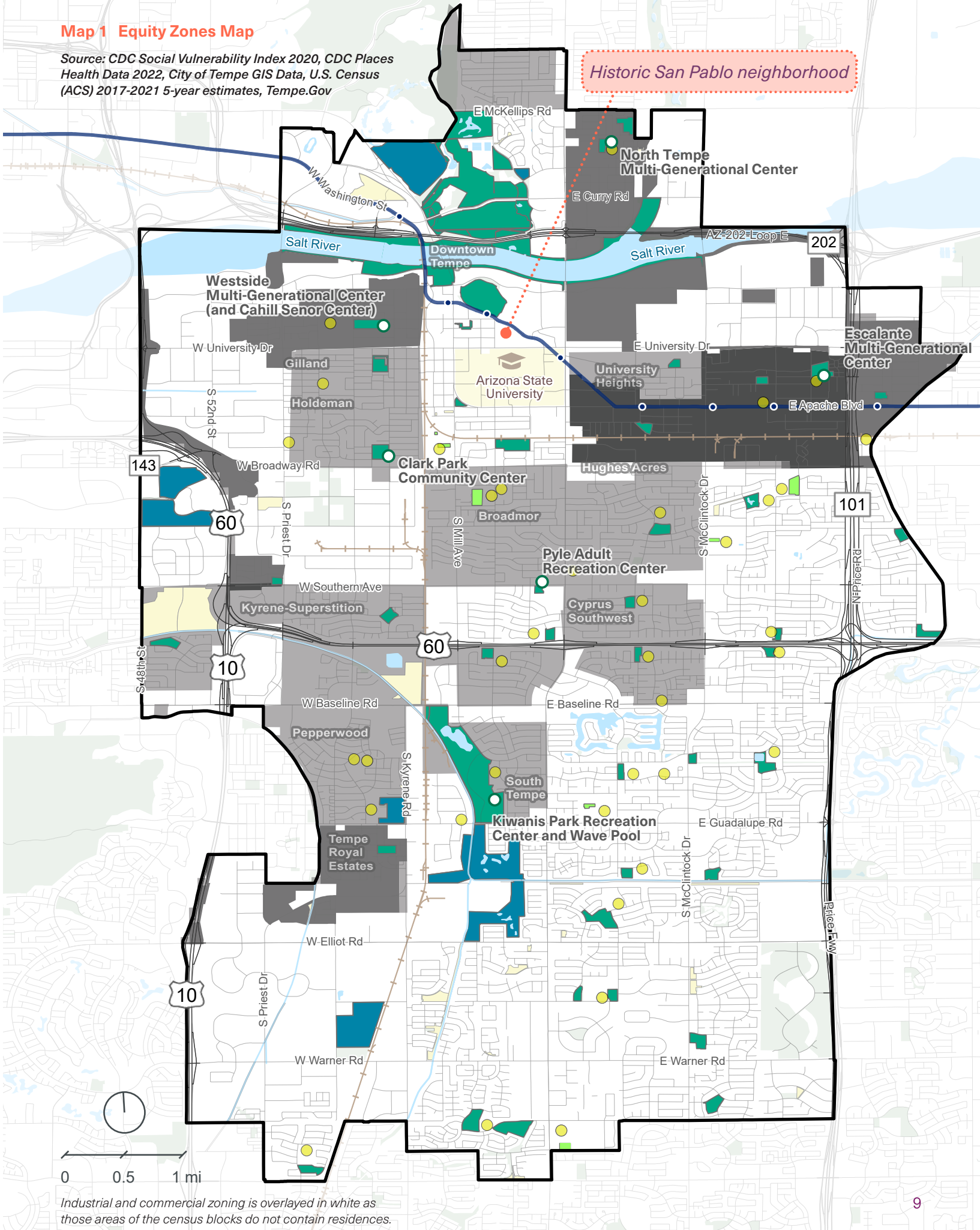
Factors in the Equity Zones include Centers for Disease Control (CDC) Social Vulnerability Index (SVI) consisting of 16 socioeconomic factors, the CDC’s Healthy Places data of asthma prevalence, mental health distress and physical inactivity, rental tenure, crime concentrations, and places of informal housing encampments (Table 1). More detailed information on how these factors are represented in the Equity Zones is provided in the following methodology.

The Equity Zones are broken into three categories of "Very High Priority", "High Priority" and "Medium Priority" classification. "Very High Priority" Equity Priority Zones are areas where the highest number of factors overlap. It should be noted that there may be instances where some factors are present in areas highlighted as “Not an Equity Priority Area” on Map 1. However, these are areas where multiple factors are not overlapping.

Table 1 Equity Zone Factors			
#	Equity Priority Factors	Priority Factor Input	Source
1	CDC Social Vulnerability Index 2020: Socioeconomic Status, Household Characteristics, Racial & Ethnic Minority Status, Housing Type and Transportation	16 social factors variables	Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2020 Database Arizona.
2	Rental Tenure	Census tracts with > 50% renters	Census Data: (ACS) 2017-2021 5-year estimates
3	CDC Places Health Data 2022	Asthma health prevalence	Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion
		Mental health distress	
		Physical inactivity	
4	Crime Concentrations	Serious crimes	City of Tempe 2019 - 2022
5	Places of Informal Housing Encampments	Half mile buffer of confirmed encampments	City of Tempe 2022

Map 1 Equity Zones Map

Source: CDC Social Vulnerability Index 2020, CDC Places Health Data 2022, City of Tempe GIS Data, U.S. Census (ACS) 2017-2021 5-year estimates, Tempe.Gov





Equity Zone Mapping Methodology

Priority Factors

Socioeconomic Inequity and Health Equity Data

The Equity Zones are created by overlaying several factors that serve as proxies for socioeconomic and health inequities. This creates a composite map. The data is available primarily by census block. Census blocks that are above Tempe's median average in the respective category are identified. The density of populations and housing types is accounted for in weighing variables, as described in the concluding analysis. Weighting is not applied to individual variables but to the five groupings of categories, as detailed under each dataset description (pages 10-13).

The Priority factors are stratified on a scale of “Very High,” “High,” and “Medium” concentration of each respective variable. The stratification varies based on the characteristics of the data. Maps showing the individual composite layers (Map 2) are on Page 14.

Datasets Included in Equity Zones

1. CDC SOCIAL VULNERABILITY INDEX 2020

Methodology: Natural breaks for the SVI Overall Ranking

- 16 Variables have equal ratings

About the CDC Social Vulnerability Index

"The CDC/ATSDR SVI uses U.S. Census data to determine the social vulnerability of every census tract. Census tracts are subdivisions of counties for which the Census collects statistical data. The CDC/ATSDR SVI ranks each tract on 16 social factors and groups them into four related themes. Each tract receives a separate ranking for each of the four themes (Socioeconomic Status, Household Characteristics, Racial and Ethnic Minority Status, Housing Type and Transportation), as well as an overall ranking."¹

Variables included in CDC Social Vulnerability Index 2020 (16 variables)

Socioeconomic Status

1. Below 150% Poverty
2. Unemployed
3. Housing Cost Burden
4. No High School Diploma
5. No Health Insurance

¹ Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2020 Database Arizona



Household Characteristics

6. Aged 65 & Older
7. Aged 17 & Younger
8. Civilian with a Disability
9. Single-Parent Households
10. English Language Proficiency

Racial and Ethnic Minority Status

11. Race and Ethnicity
 - » Hispanic or Latino (of any race)
 - » Black and African American, Not Hispanic or Latino
 - » American Indian and Alaska Native, Not Hispanic or Latino
 - » Asian, Not Hispanic or Latino
 - » Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino
 - » Two or More Races, Not Hispanic or Latino
 - » Other Races, Not Hispanic or Latino

Housing Type and Transportation

12. Multi-Unit Structures
13. Mobile Homes
14. Crowded Housing
15. No Vehicle
16. Group Quarters

Source: Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2020 Database Arizona.
https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html

2. RENTAL TENURE: CENSUS TRACTS WITH > 50% RENTERS

ACS housing unit occupancy variables - boundaries (U.S. Census Bureau’s American Community Survey (ACS) 2017-2021 5-year estimates)

Methodology: Threshold Max Number for the Factor

- Variable has equal rating

About the Rental Tenure

Rental Tenure: Census tracts with > 50% renters is data from the American Community Survey (ACS) 5-year estimates shown by census tracts relating to housing occupancy, tenure, and median rent/housing value. The rental tenure provides an additional understanding of housing characteristics and is incorporated separately from the CDC Social Vulnerability Index.



Rental Tenure Variables (includes 1 variables)

- 1. ACS Housing Units Occupancy Variables Tract: Overall Renter Rate: Percent of Occupied Housing Units that are Renter-Occupied
 - » Percent of Occupied Housing Units that are Renter-Occupied. Data is used to measure the percent of the population that are that are Renter-Occupied.

Source: ACS) 2017-2021 5-year estimates

3. CDC PLACES HEALTH DATA 2022 (Population level analysis and community estimates) (3 variables)

Methodology: Threshold Max Number for the Factor

- 3 Variables have equal ratings

About the CDC Places Health Data

The following text from the CDC Places website provides detailed information regarding the health data methodology. "CDC PLACES provides health data for small areas across the country. This allows local health departments and jurisdictions, regardless of population size and rurality, to better understand the burden and geographic distribution of health measures in their areas and assist them in planning public health interventions."

CDC Places incorporates health population estimates to help indicate where health equity occurs. The three census tract CDC Places variables include Asthma health prevalence, Mental health distress and Physical inactivity for Adults aged 18 years or older. Other health variables are available within the CDC Places Health Data. This study highlights asthma health prevalence, mental health distress and physical inactivity as important signifier of equity relating to parks and recreation. Areas with higher concentrations of these public health variables could benefit from green space improvements and investments.

Variables included in CDC Places Health Data (3 variables)

- 1. Asthma health prevalence
 - » Weighted number of respondents aged ≥18 who answer “yes” both to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you have asthma?” and the question “Do you still have asthma?”
- 2. Mental health distress
 - » Respondents aged ≥18 years who report 14 or more days during the past 30 days during which their mental health was not good.
- 3. Physical inactivity
 - » Respondents aged ≥18 years who report 14 or more days during the past 30 days during which their physical health was not good.

Source: Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion
<https://www.cdc.gov/places/index.html>

4. CRIME CONCENTRATIONS 2019 - 2022
Serious Crime Count: Census Tracts

2 Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion
<https://www.cdc.gov/places/index.html>



Methodology: Threshold Max Number for the Factor

- Variable has equal rating

About the Serious Crime Count

The Crime Concentrations data is part of the City of Tempe’s General Offense Crime Report Dataset. This dataset aggregates crime data to the associated census tract for a "Total Count" of crimes in the area. Crime considerations are incorporated into the equity zone factors to help understand areas that may require greater intervention in creating safe park settings. The crime data are a compilation of three years, recorded from 11/6/2019 at 12 AM through 11/5/2022 at 11:59 PM.

Serious crimes are filtered to include:

- Kidnapping
- Homicide
- Statutory Rape
- Sexual Conduct with a Minor
- Sexual Exploitation of a Minor

Or include the following words:

- Assault
- Robbery
- Burglary
- Theft (excluding identity theft)
- Sexual Assault
- Sexual Abuse
- Child Abuse
- Shooting

Source: City of Tempe

5. PLACES OF INFORMAL HOUSING ENCAMPMENTS BUFFER 2022
Places of Informal Housing Encampments Point Data

Methodology: Half mile buffer equal weight

- Variable has equal rating

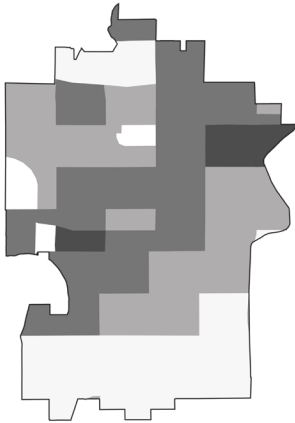
About the Informal Housing Encampments Buffer

The purpose of including this data is to account for locations of people likely to have not been accounted for in the U.S. Census, including transitional housing and managed shelters. The Places of Informal Housing Encampments are point data provided by the City of Tempe, displaying known and newly verified informal housing encampments. A half mile buffer is placed around the point data within the City of Tempe and shown as equal weight.

The Informal Housing Encampments Buffer is part of the consideration for the Equity Zones. However, it is important to note that this data is used with the understanding that not all informal housing encampments are stationary and might not reflect the actual locations of informal housing. Additionally, the Informal Housing Encampments data locations were collected from 2022 self-reported calls.

Source: City of Tempe

EQUITY ZONE MAPPING

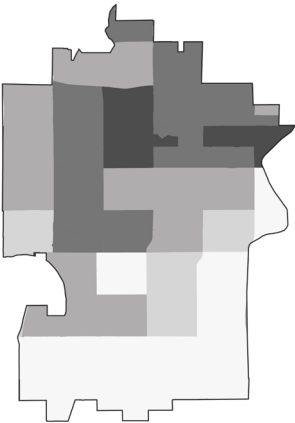


CDC Social Vulnerability Index:
16 variables of Socioeconomic Status, Household Characteristics, Race and Ethnic Minority Status, and Housing Type and Transportation

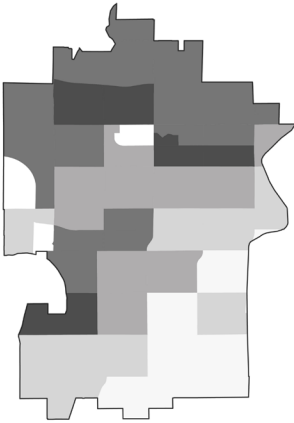
Map 2 Equity Zones Composite Layers

Equity Zones Composite Layers

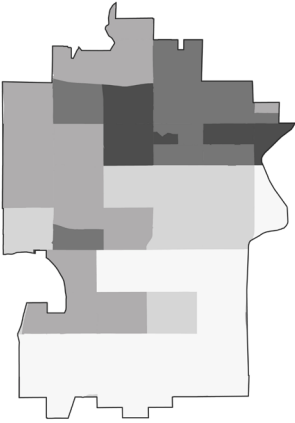
Map 2 displays individual layers included in the Equity Zones composite mapping. Map 3 combines the individual layers to show the final Equity Zones Composite.



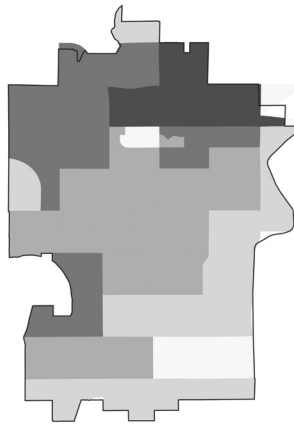
CDC Places: Asthma Health Prevalence



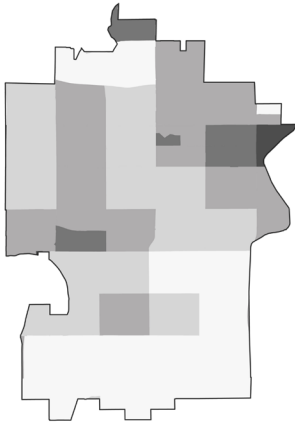
Rental Tenure:
> 50% renters



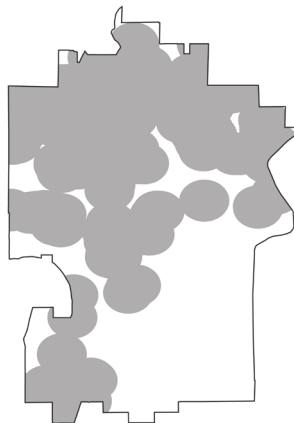
CDC Places: Mental Health Distress



Crime Concentrations



CDC Places: Physical Inactivity

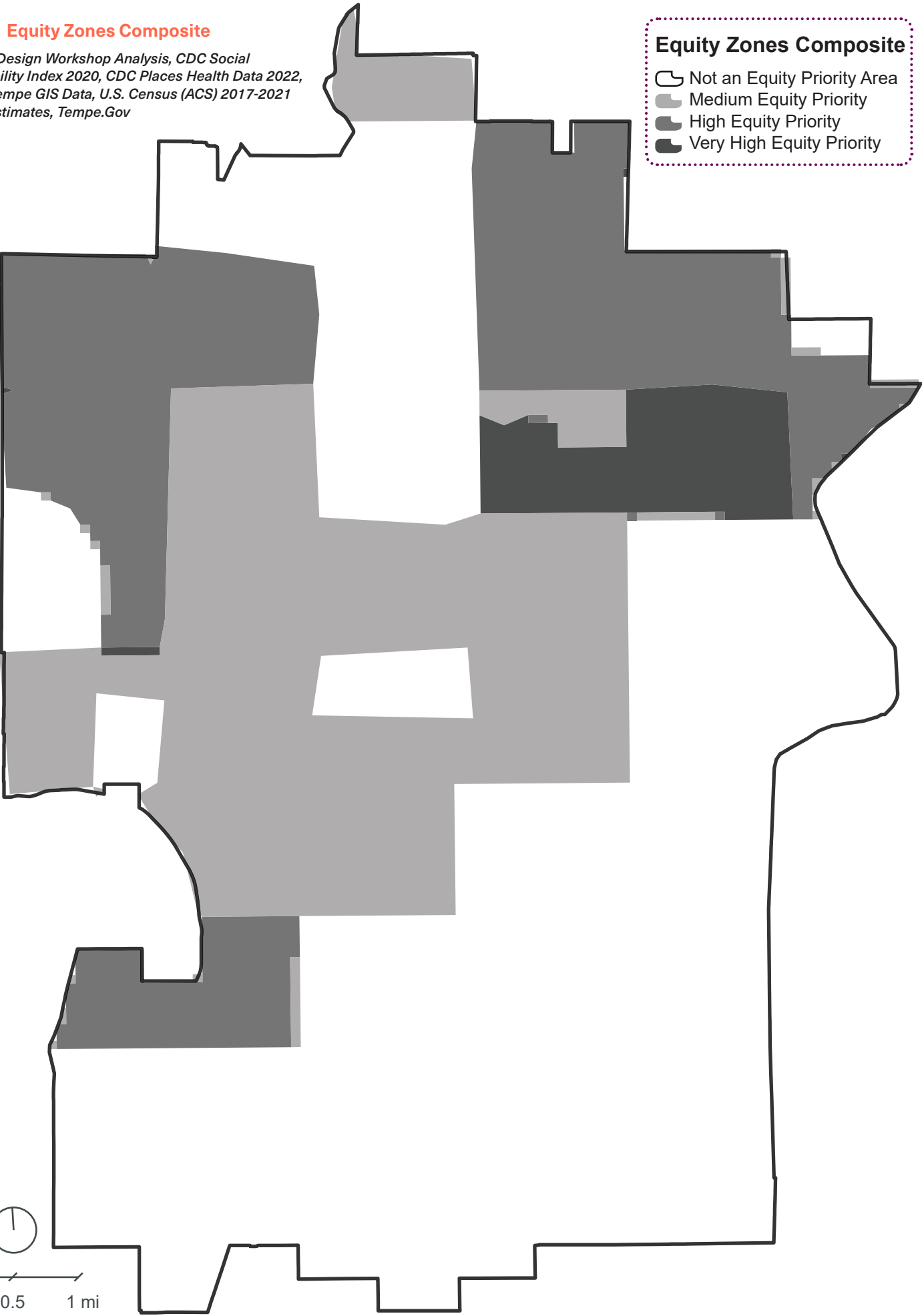


Places of Informal Housing Encampments
Buffer half mile



Map 3 Equity Zones Composite

Source: Design Workshop Analysis, CDC Social Vulnerability Index 2020, CDC Places Health Data 2022, City of Tempe GIS Data, U.S. Census (ACS) 2017-2021 5-year estimates, Tempe.Gov



Equity Zones Composite

- Not an Equity Priority Area
- Medium Equity Priority
- High Equity Priority
- Very High Equity Priority



Housing Types by Equity Zones

Residential Addresses

Population density is not included as a variable since it does not necessarily determine inequities within city services or quality of life. However, it is interesting to find there is a relationship between population density and equity zones (map not included). The housing type data is used for analysis because it provides greater detail to population density.

Map 4, Map 5 and Map 6 display residential address points in the City of Tempe. Examining citywide residential addresses helps communicate Equity Zones' housing density versus areas outside of Equity Zones. The majority of residential addresses within the City of Tempe are single family (Map 4). Most multifamily units, condos, apartments, or trailers are in the central and northern areas of the city (Map 5, Map 6).

Map 7 displays residential address points within an equity zone filtered by building type. Further analysis and breakdown of residential addresses are on Page 18.

Residential Address Points

- SFR (Detached Single-Family Residential)
- MF (Multifamily Unique Address - Townhome)
- MF_S (Multifamily Unit - Condo, Apartment, Trailer)

Equity Zones Priority

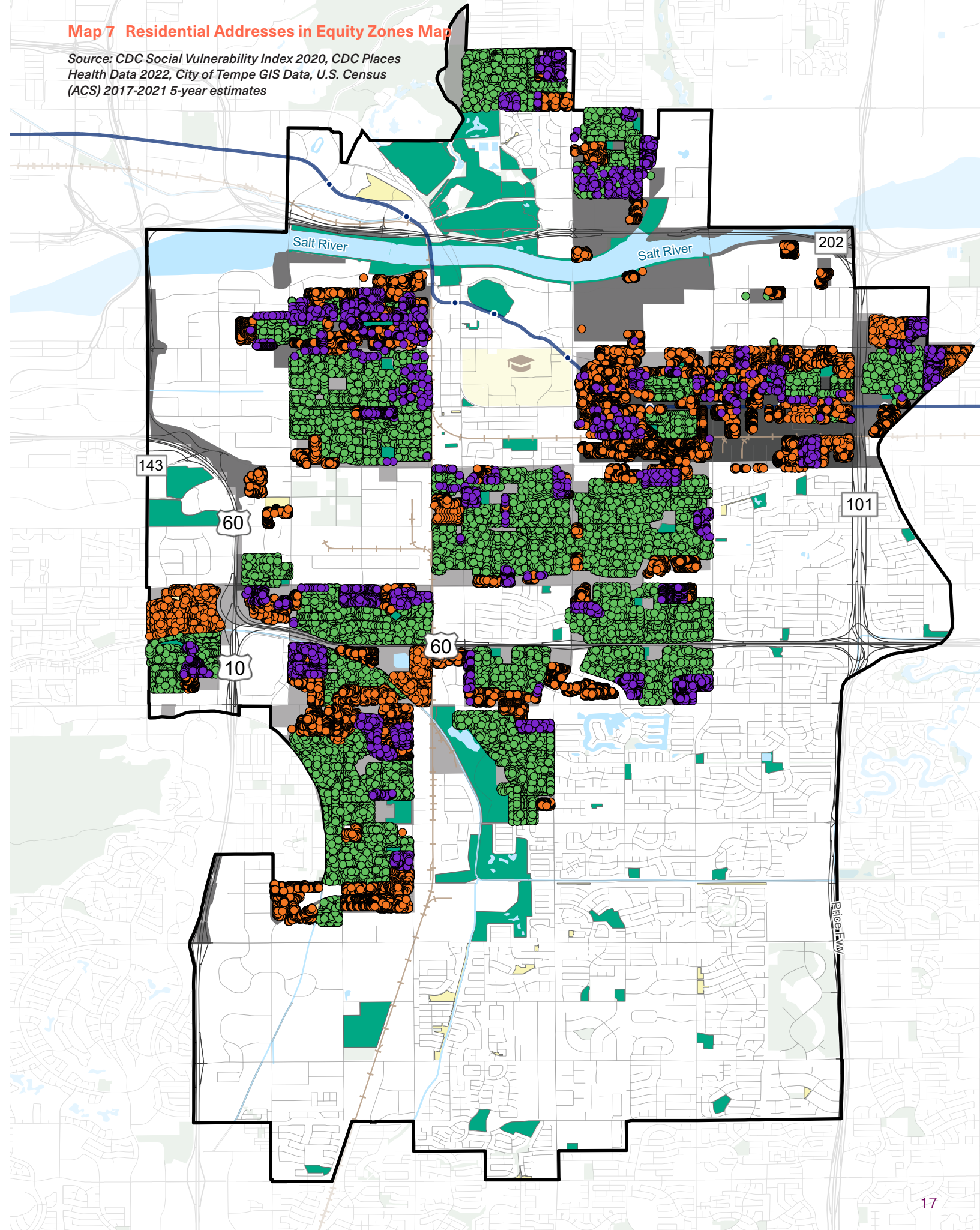
- Not an Equity Priority Area
- Medium Equity Priority
- High Equity Priority
- Very High Equity Priority

Legend

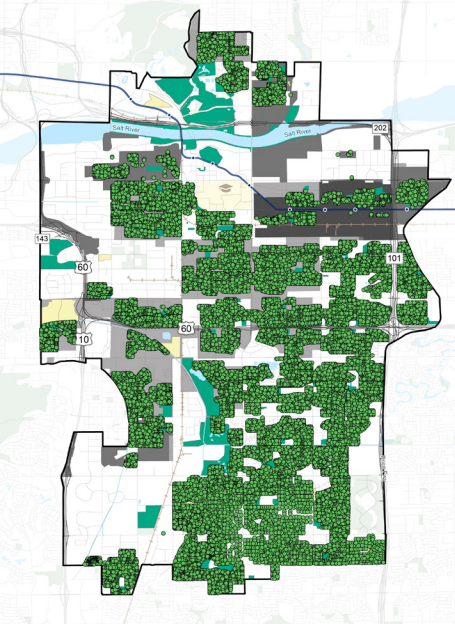
- Tempe Parks and Recreation
- HOA/Private Parks
- Other County Parks and Open Space
- Valley Metro Light Rail Stations
- Valley Metro Rail Line
- City of Tempe
- Arizona State University

Map 7 Residential Addresses in Equity Zones Map

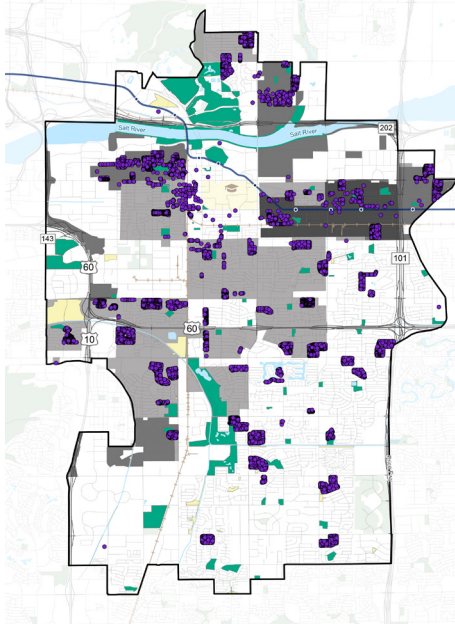
Source: CDC Social Vulnerability Index 2020, CDC Places Health Data 2022, City of Tempe GIS Data, U.S. Census (ACS) 2017-2021 5-year estimates



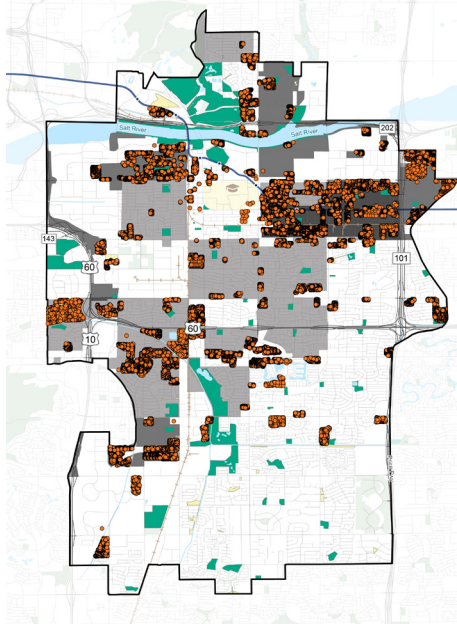
Map 4 SFR (Detached Single-Family Residential)



Map 5 MF (Multifamily Unique Address - Townhome)



Map 6 MF_S (Multifamily Unit - Condo, Apartment, Trailer)





Residential Addresses in Equity Zones

Residential Addresses distribution

There are 86,623 residential address points in the City of Tempe (Table 2). Thirty-five percent are single family residents, eight percent are town homes (classified as "multifamily" in the data), and 56 percent are condos, apartments, or trailers.

Table 2 shows the breakdown of the following:

- Residential address points Tempe per building type;
- Residential address points within an Equity Zone per building type; and
- Residential address points within an Equity Zone per Equity Priority.

Table 3 shows the building type per equity priority for Very High Priority, High Priority and Medium Priority. The total percent highlights the proportion of residential addresses per building type that are within an equity zone compared to total residential address points in Tempe.

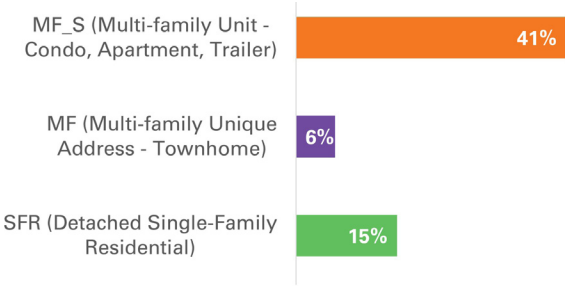
Over half of Tempe residential addresses are within an Equity Zone (62%).

Almost half of all housing in the city are multifamily units, condos, apartments, or trailers in an Equity Zone (41%).

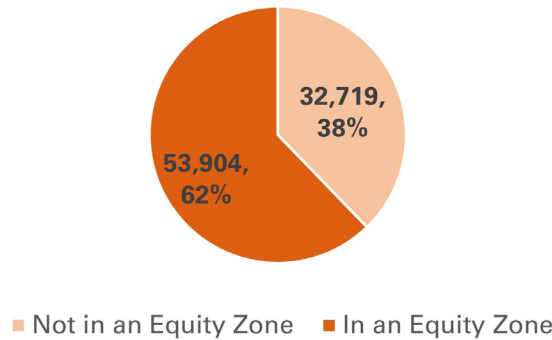
Three-quarters of residential addresses in an Equity Zone are multifamily units, condos, apartments, or trailers (75%). As a point of comparison, 42% of the homes not within an equity zone are multifamily units, condos, apartments, or trailers.

Thirty-one percent of the residential address points within an equity zone are in a medium priority. Thirty-two percent are in a high or very high equity zone.

Residential Addresses within an Equity Zone



All Residential Units



Residential Units in Equity Zones (Very High, High, Medium)

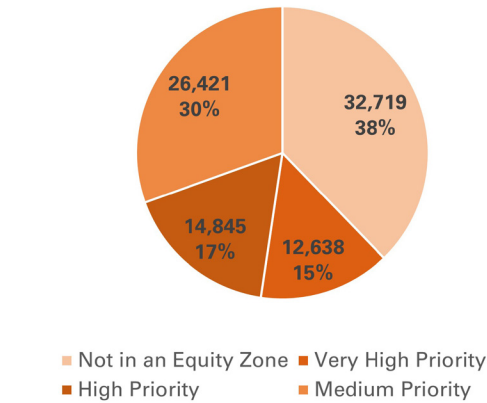


Table 2 Residential Addresses Points within Tempe

Residential Address Points in Tempe	Number of Address Points	Percentage of Address Points
SFR (Detached Single Family Residential)	30,440	35%
MF (Multifamily Unique Address - Townhome)	7,303	8%
MF_S (Multifamily Unit - Condo, Apartment, Trailer)	48,880	56%
Total Residential Address Points	86,623	100%
Within an Equity Zone	Number of Address Points	Percentage of Address Points
SFR (Detached Single Family Residential)	13,270	15%
MF (Multifamily Unique Address - Townhome)	5,113	6%
MF_S (Multifamily Unit - Condo, Apartment, Trailer)	35,521	41%
Total Residential Address Points within an Equity Zone	53,904	62%
Within an Equity Zone per Equity Priority	Number of Address Points	Percentage of Address Points
Residential Addresses within a Medium Priority	26,421	31%
Residential Addresses within a High Priority	14,845	17%
Residential Addresses within a Very High Priority	12,638	15%
Total Residential Address Points Within an Equity Zone per Priority	53,904	62%

Source: Design Workshop Analysis, Tempe GIS Open Data: [Addresses](#) | [Data Catalog \(tempe.gov\)](#)

Table 3 Residential Addresses Per Building Type per Equity Priority

Residential Addresses within a Very High Priority	Number of Address Points	Percentage of Address Points
SFR (Detached Single Family Residential)	645	1%
MF (Multifamily Unique Address - Townhome)	471	1%
MF_S (Multifamily Unit - Condo, Apartment, Trailer)	11,522	21%
Total Residential Address Points	12,638	15%
Residential Addresses within a High Priority	Number of Address Points	Percentage of Address Points
SFR (Detached Single Family Residential)	2,208	4%
MF (Multifamily Unique Address - Townhome)	1,390	2%
MF_S (Multifamily Unit - Condo, Apartment, Trailer)	11,247	13%
Total Residential Address Points	14,845	17%
Residential Addresses within a Medium Priority	Number of Address Points	Percentage of Address Points
SFR (Detached Single Family Residential)	10,417	19%
MF (Multifamily Unique Address - Townhome)	3,252	4%
MF_S (Multifamily Unit - Condo, Apartment, Trailer)	12,752	15%
Total Residential Address Points	26,421	31%

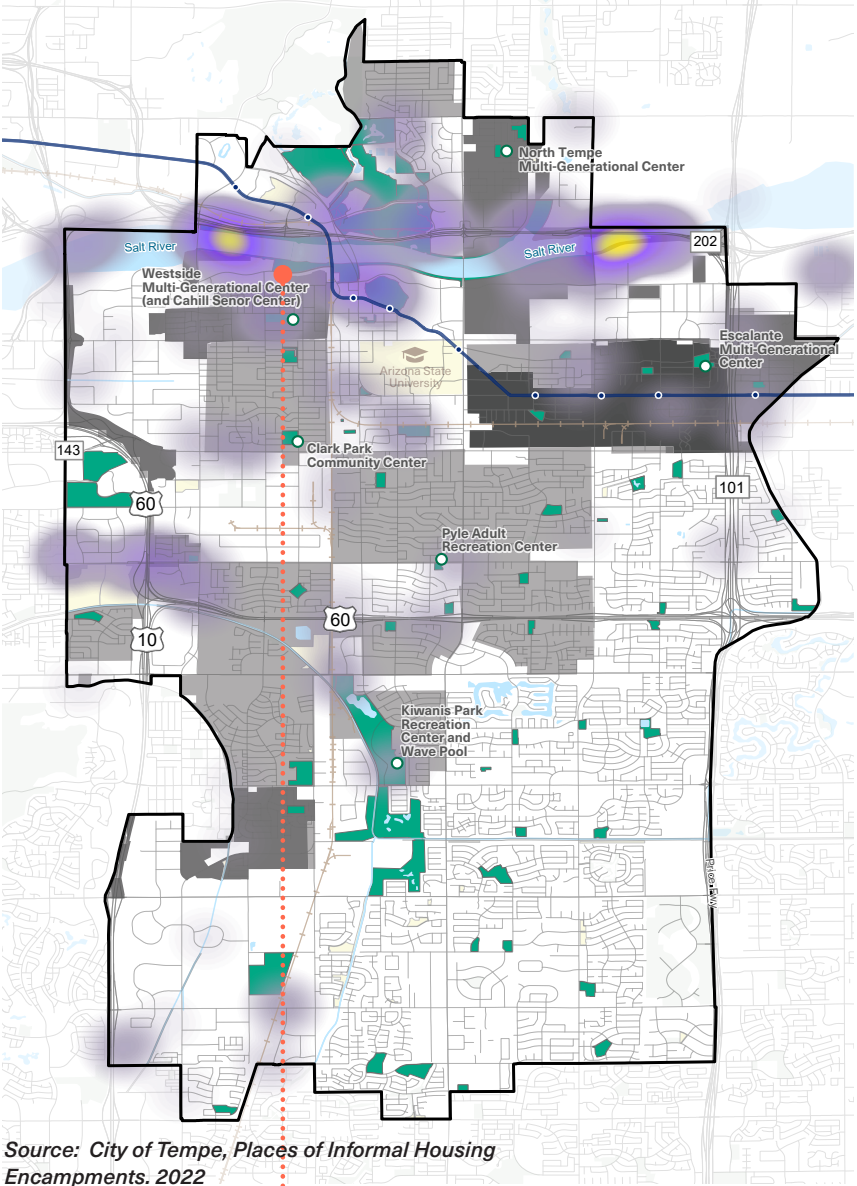
Source: Design Workshop Analysis, Tempe GIS Open Data: [Addresses](#) | [Data Catalog \(tempe.gov\)](#)



Places of Informal Housing in Equity Zones

Places of informal housing in Tempe have been found most prevalently in northern portions of Tempe, with the highest concentration near the Salt River, as seen in Map 8. It should be noted that areas along the western portion of the Salt River are zoned industrial; the Equity Zone map has been amended to not show areas with industrial and commercial activity as Equity Zones, since they do not host formally zoned residences.

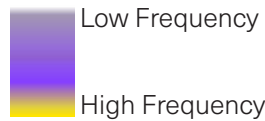
Map 8 Places of Informal Housing Encampments



Source: City of Tempe, Places of Informal Housing Encampments. 2022

Notably, **Rio Arts Park** lies between high concentrations of informal housing encampments and crime. Although the area surrounding Rio Arts Park is not identified as an Equity Zone as it is comprised mostly of commercial and industrial developments, Rio Arts Park has retained its designation as a park that is within an Equity Zone as an outcome of this specific analysis.

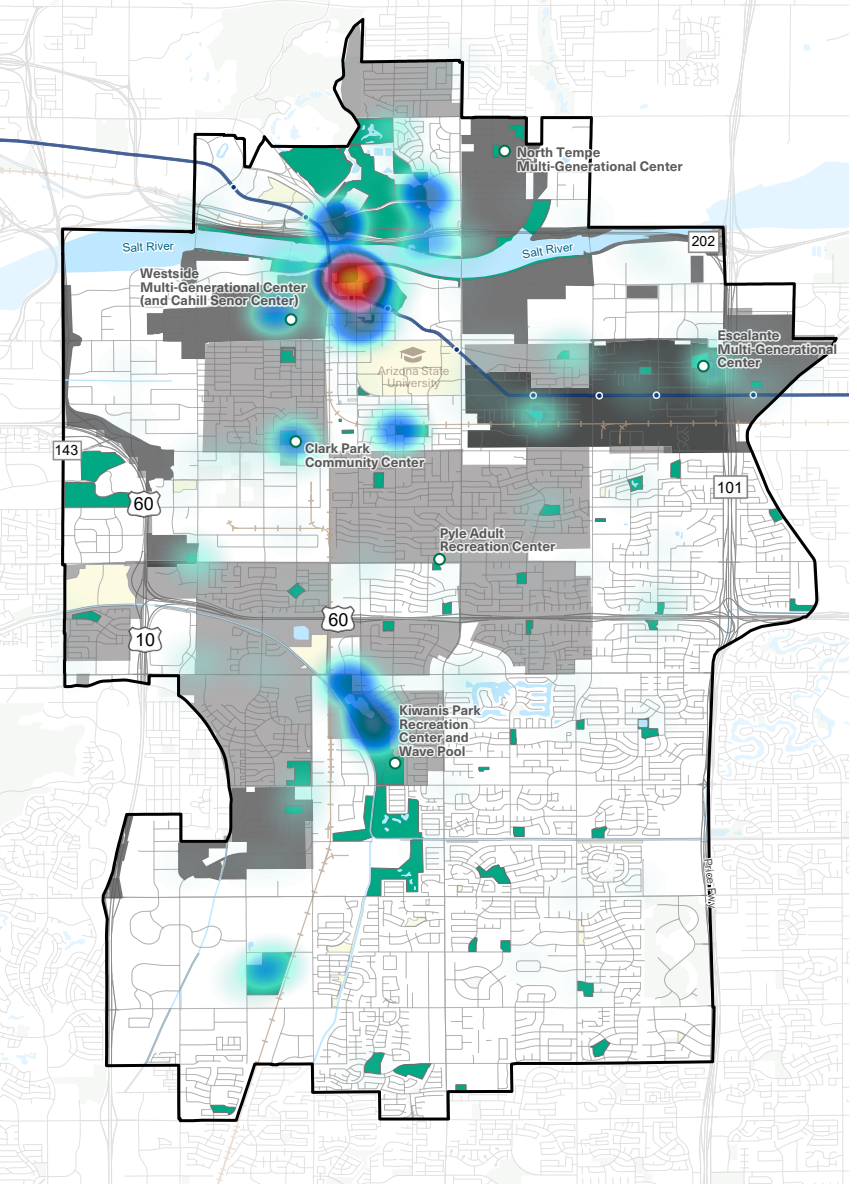
Places of Informal Housing Encampments



Places of High Frequency of Crime in Equity Zones

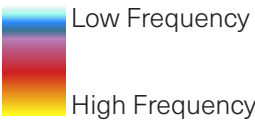
Places that encounter high crime rates are found south of the Salt River and Ash Ave (adjacent to Rio Salado Park and Rio Arts Park) and north of the river near the Desert Botanical Garden. Other areas of high crime are near Kiwanis Park and Recreation Center, south of ASU, and in the highest priority Equity Zone along the Apache Blvd. Corridor. A low frequency of crime occurs near the Tempe Sports Complex. See Map 9

Map 9 Places of High Frequency of Crime



Source: City of Tempe's General Offense Crime Report Dataset. Cumulative crime reports between November 2019 - November 2022. Crime data has been edited to include only those that are most relevant to park spaces.

Places of High Frequency of Crimes



EQUITY ZONES ANALYSIS



Parks and Facilities in Equity Zones

The Equity Zones help identify areas where investments could most impactfully enhance equity in park and recreation provisions. Map 10 displays Tempe's park and recreation facilities that are within Equity Zones. Table 4 provides a list of parks by Equity Priority Zone and Table 5 provides the Recreation Centers.

Indian Bend Wash Habitat is the only Natural Area (out of five) within an Equity Zone. Most Community Parks are within an Equity Zone. Five out of six Recreation Centers, (all but Pyle Adult Recreation Center) are located within an Equity Zone.

Table 4 Parks and Recreation within an Equity Zone		
#	Very High Equity Zone	Class
10	Escalante Park	Community
15	Parque de Soza*	Community
23	Alegre Park	Neighborhood
#	High Equity Zone	Class
6	Rio Salado Park (Including Tempe Town Lake and non-named areas)	Regional
11	Esquer Park	Community
16	Indian Bend Park	Community
17	Jaycee Park	Community
27	Celaya Park	Neighborhood
38	Peterson Park	Neighborhood
60	Victory	Special Use
63	Indian Bend Wash Habitat	Natural Area
#	Medium Equity Zone	Class
1	Kiwanis Park	Regional
2	Rio - Arts Park	Regional
7	Clark Park	Community
14	Hollis Park	Community
18	Meyer Park	Community
19	Mitchell Park	Community
24	Arredondo Park	Neighborhood
30	Dwight Park	Neighborhood
37	Palmer Park	Neighborhood
43	Svob Park	Neighborhood
45	Creamery Park	Urban
51	McKerny Middle School	SURF
53	Benedict Sports Complex	Special Use

Equity Zones Composite

- Not an Equity Priority Area
- Medium Equity Priority
- High Equity Priority
- Very High Equity Priority

Within Equity Zones

- Tempe Parks and Recreation within Equity Zones

Legend

- Tempe Parks and Recreation
- Recreation Centers
- HOA/Private Parks
- Other County Parks and Open Space
- Valley Metro Light Rail Stations
- Valley Metro Rail Line
- City of Tempe
- Arizona State University

Table 5 Recreation Centers within an Equity Zone

b	Escalante Multi-Generational Center
#	High Equity Zone
f	Westside Multi-Generational Center (and Cahill Senior Center)
d	North Tempe Multi-Generational Center
#	Medium Equity Zone
a	Clark Park Community Center
c	Kiwanis Park Recreation Center and Wave Pool

*Parque de Soza formerly Hudson Park

Map 10 Parks within Equity Zones

Source: CDC Social Vulnerability Index 2020, CDC Places Health Data 2022, City of Tempe GIS Data, U.S. Census (ACS) 2017-2021 5-year estimates

