

Appendices

Appendix B: SB 1000 Environmental Justice Analysis

Envision
PALMDALE 2045
a complete community

Envision
PALMDALE 2045

SB 1000 Environmental Justice Technical Analysis

General Plan Appendix B

Background

What is Equity?

- When socioeconomic and environmental factors can no longer be used to predict life outcomes and outcomes for all groups are improved
- Socioeconomic and environmental factors
 - Race
 - Gender
 - Income
 - Place
 - Education

Equality

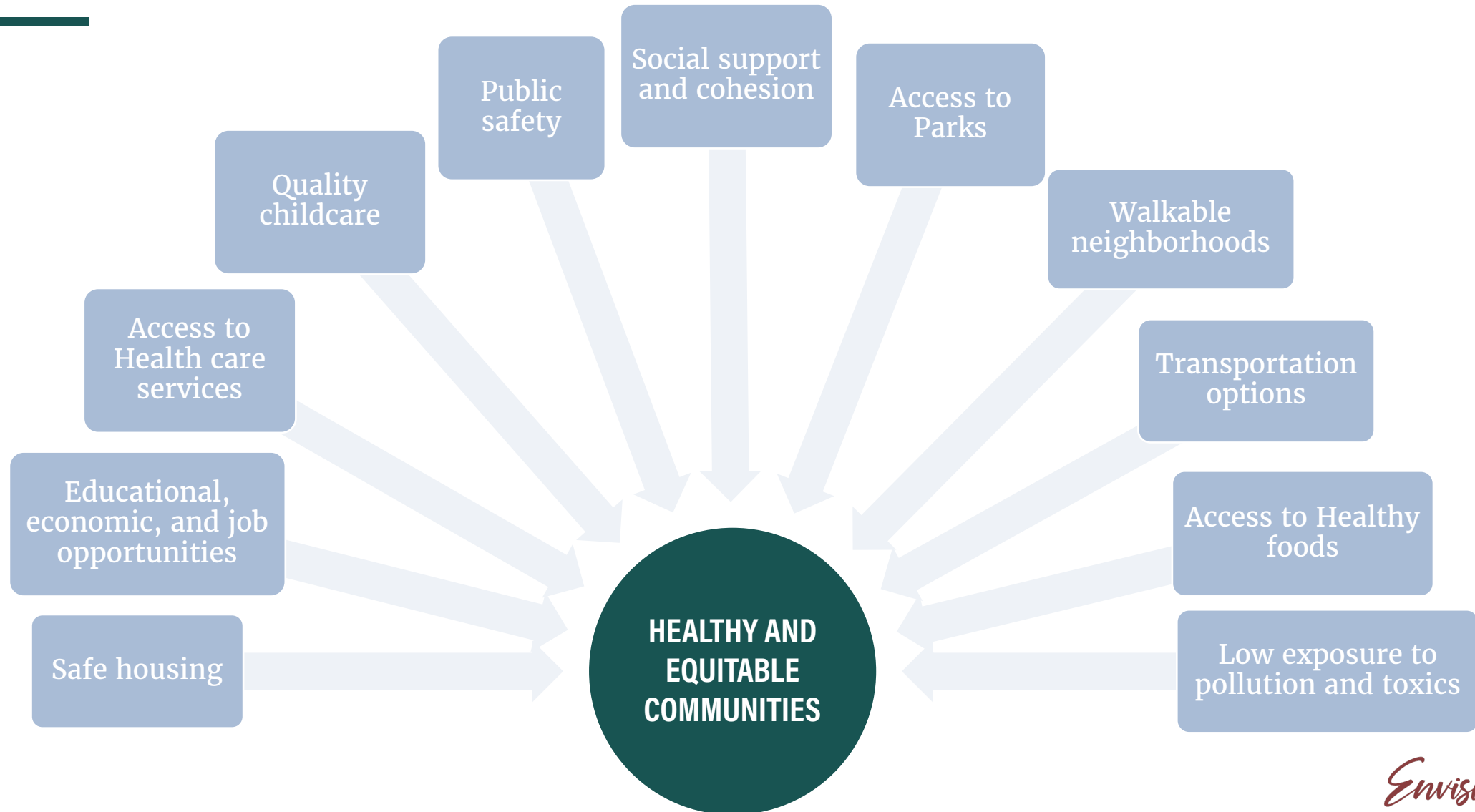


Equity



Source: US Green Building Council

Healthy and Equitable Communities



Senate Bill 1000: The Planning for Healthy Communities Act

- Passed in 2016 to address health disparities in low-income communities
- Requires local governments to identify any “disadvantaged communities” (DACs) in its jurisdiction when a city or county adopts or updates two or more elements of its general plan on or after January 1, 2018
- Intends to make environmental justice a real and vital part of the planning process by requiring local governments to identify Environmental Justice issues in their communities and address them through tailored policies
- Three Step Process:



Environmental Justice Element

In EJ element or EJ policies:

- **Must minimally address six topic areas** (see list to the right) to reduce the unique or compounded health risks in DACs
- Identify goals, policies, and actions that address health, equity, and environmental justice priorities and needs in DACs
- Conduct outreach and promote engagement with identified DACs in the decision-making process

Reduce Pollution

Exposure: air quality, water quality, and land use compatibility

Promote Public

Facilities: libraries, schools, childcare, health facilities, parks

Promote Food Access:

grocery stores, farmers' markets, community gardens

Promote Safe and

Sanitary Homes: housing location, quality, and affordability

Promote Physical

Activity: walkability, bikeability, access to transit, traffic safety

Promote Civic

Engagement: language access, participatory planning, consult DACs

Disadvantaged Communities

Disadvantaged communities (DACs) are defined as:

An area identified by CalEPA pursuant to Section 39711 of the Health and Safety Code. CalEPA designates an area as a DAC if a census tract scores **at or above 75% on CalEnviroScreen**.

An area that is a **low-income area*** **disproportionately affected by environmental pollution** and other hazards that can lead to negative health effects, exposure, or environmental degradation.

***Low-income area** is defined as:

- (1) an area with household incomes at or below 80 percent of the statewide median income; or
- (2) an area with household incomes at or below the threshold designated as low income by the HCD list of state income limits adopted pursuant to Section 50093 of the Health and Safety Code

Low-Income

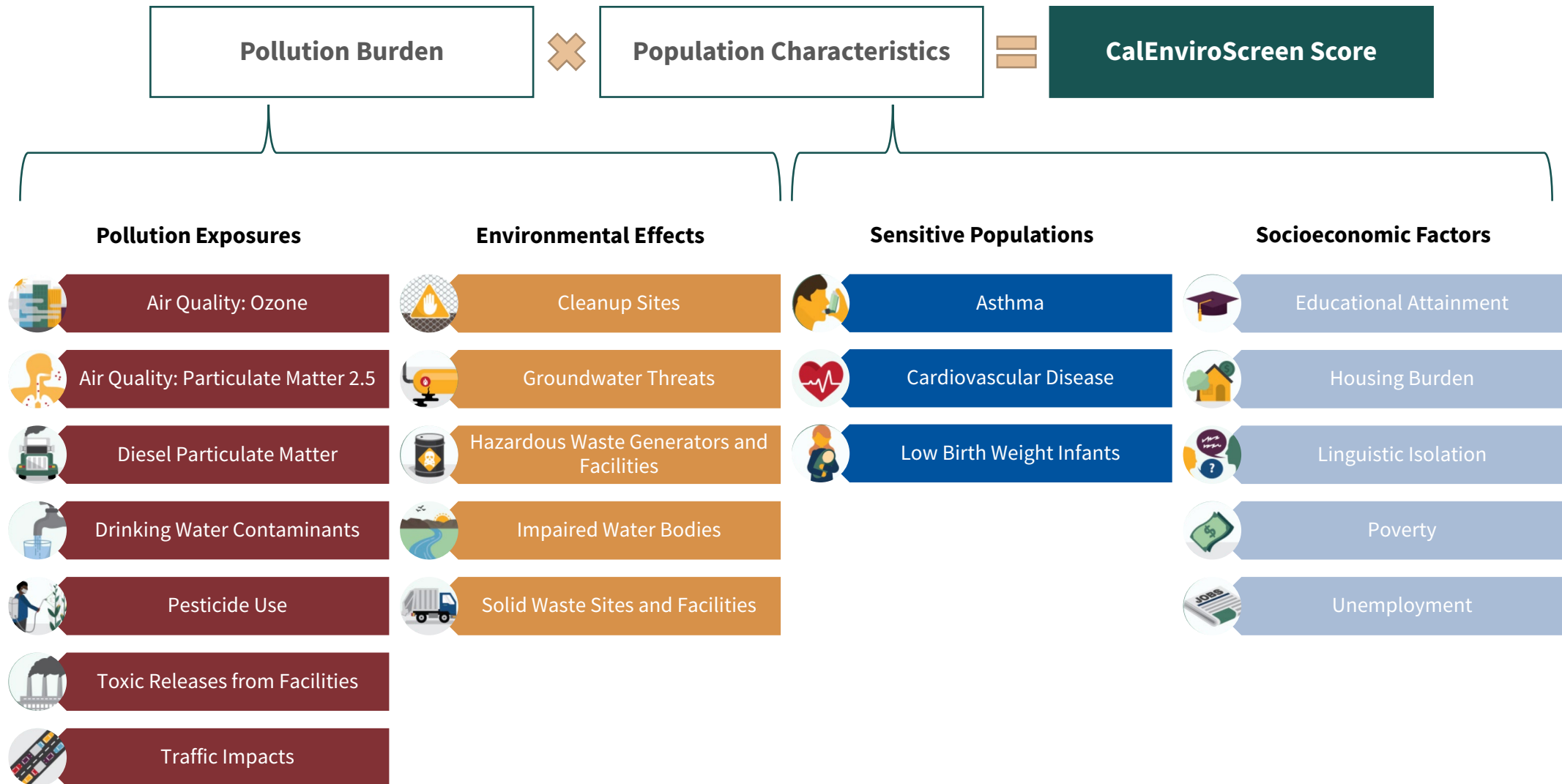


High Pollution and Health
Burden



"Disadvantaged Community"

CalEnviroScreen 3.0



CalEnviroScreen 4.0



Pollution Exposures

- Air Quality: Ozone
- Air Quality: Particulate Matter 2.5
- Added in CES 4.0** Children's Lead Risk from Housing
- Diesel Particulate Matter
- Drinking Water Contaminants
- Pesticide Use
- Toxic Releases from Facilities
- Traffic Impacts

Environmental Effects

- Cleanup Sites
- Groundwater Threats
- Hazardous Waste Generators and Facilities
- Impaired Water Bodies
- Solid Waste Sites and Facilities

Sensitive Populations

- Asthma
- Cardiovascular Disease
- Low Birth Weight Infants

Socioeconomic Factors

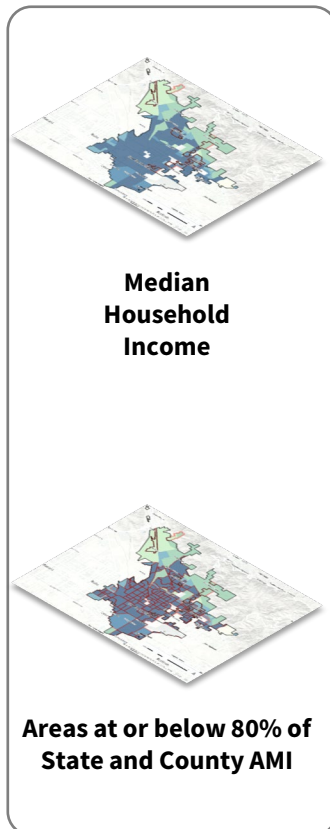
- Educational Attainment
- Housing Burden
- Linguistic Isolation
- Poverty
- Unemployment

Note: Percentiles from CES 4.0 use more recent data than CES 3.0 percentiles.

Disadvantaged Communities Screening Process

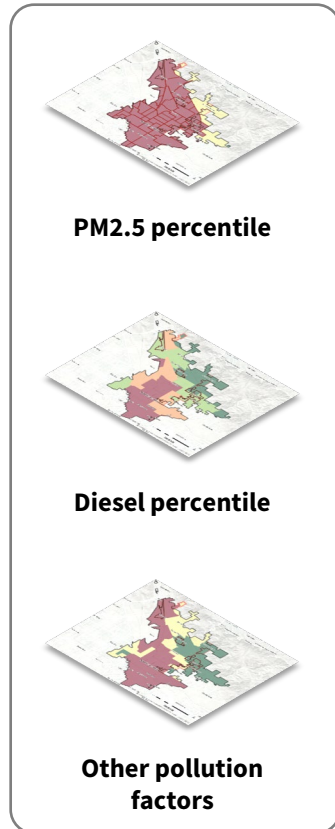
Method 1

CalEnviroScreen 4.0



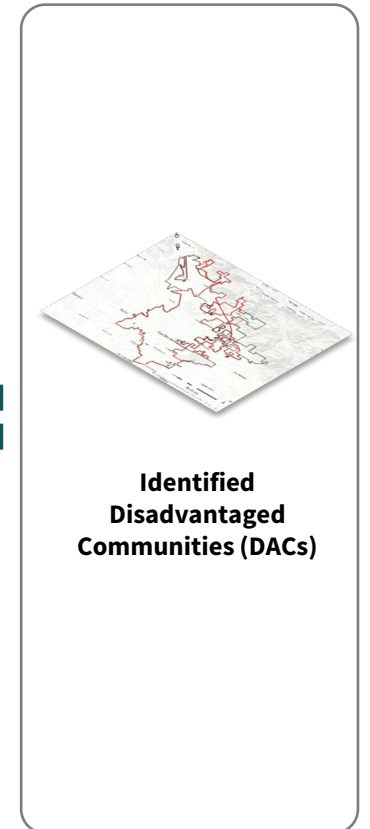
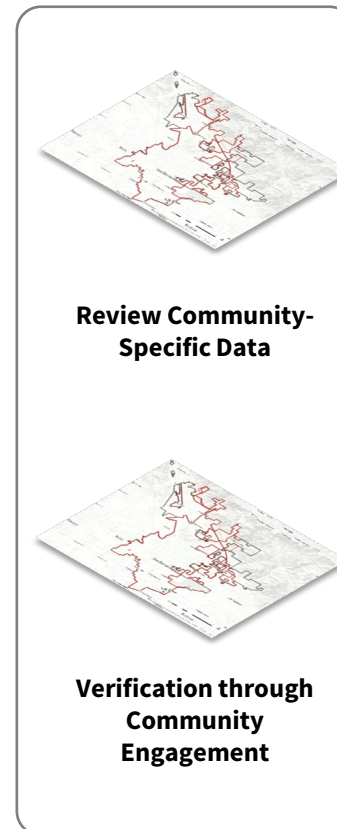
Method 2

Low-income communities with disproportionate pollution burden



Method 3

Community-specific data and groundtruthing



Low-Income Threshold

- California's Department of Housing and Community Development (HCD) releases annual state income data to determine low-income thresholds at a statewide and county level
- Since the Census Bureau's 2015-2019 American Community Survey is the most recently available income data, the 2019 HCD State Income Limits should be referenced
- The County AMI is lower than the statewide median income of \$65,760

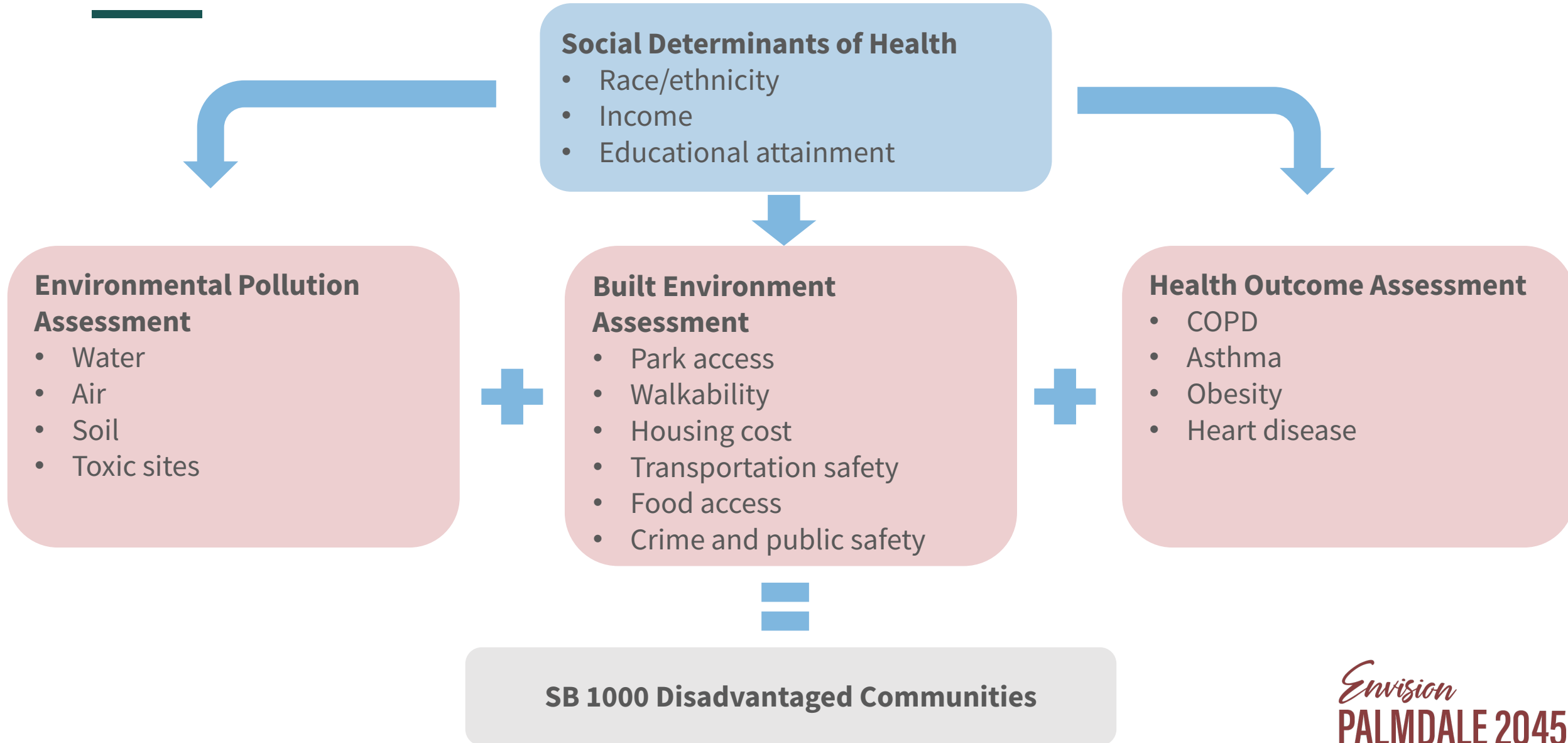
	California	Los Angeles County
Area Median Income (AMI)	\$82,200	\$73,100
80% of AMI	\$65,760	\$58,480

2019 HCD State Income Limits

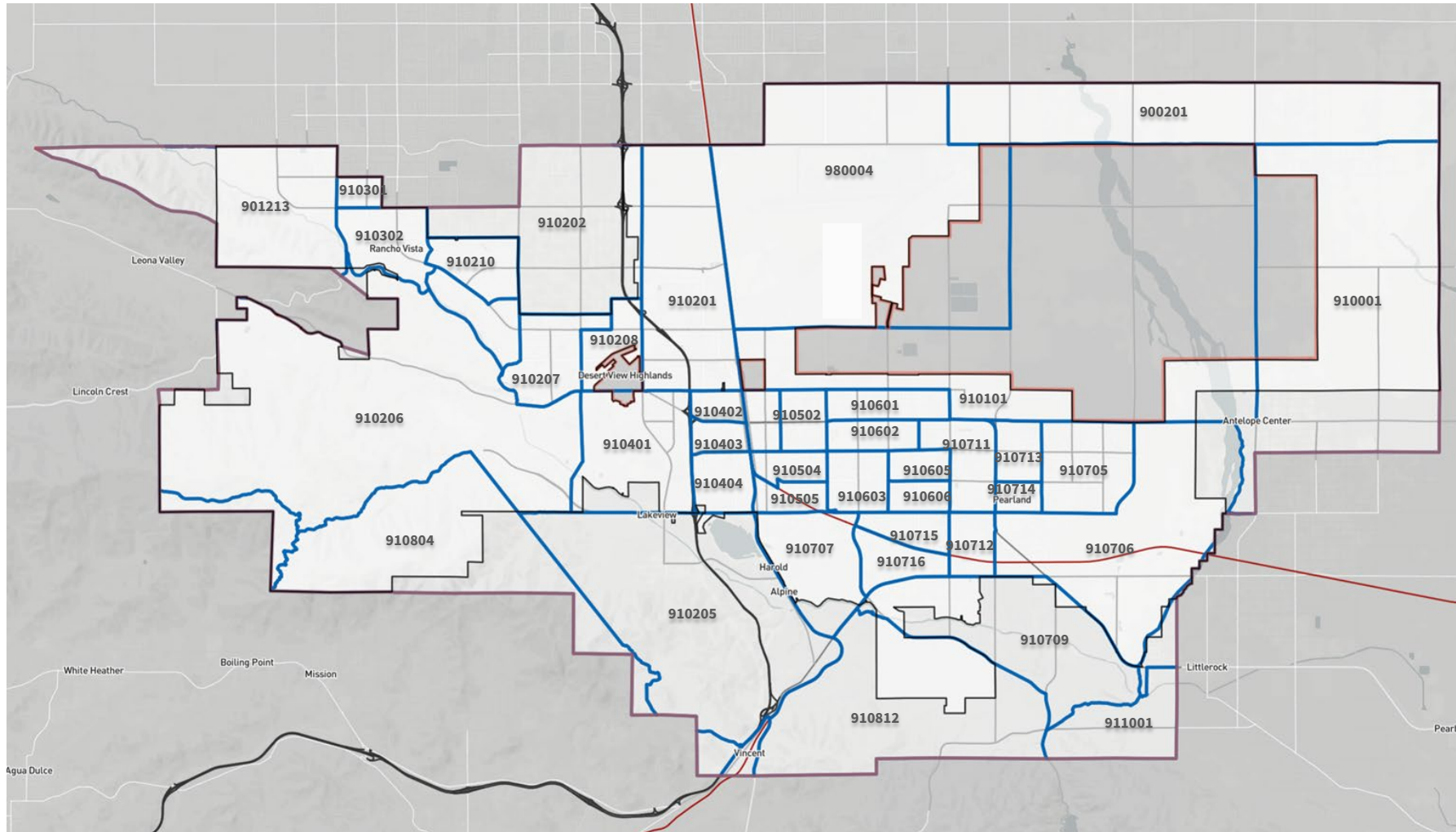


Healthy Community Assessments

Healthy Community Assessments



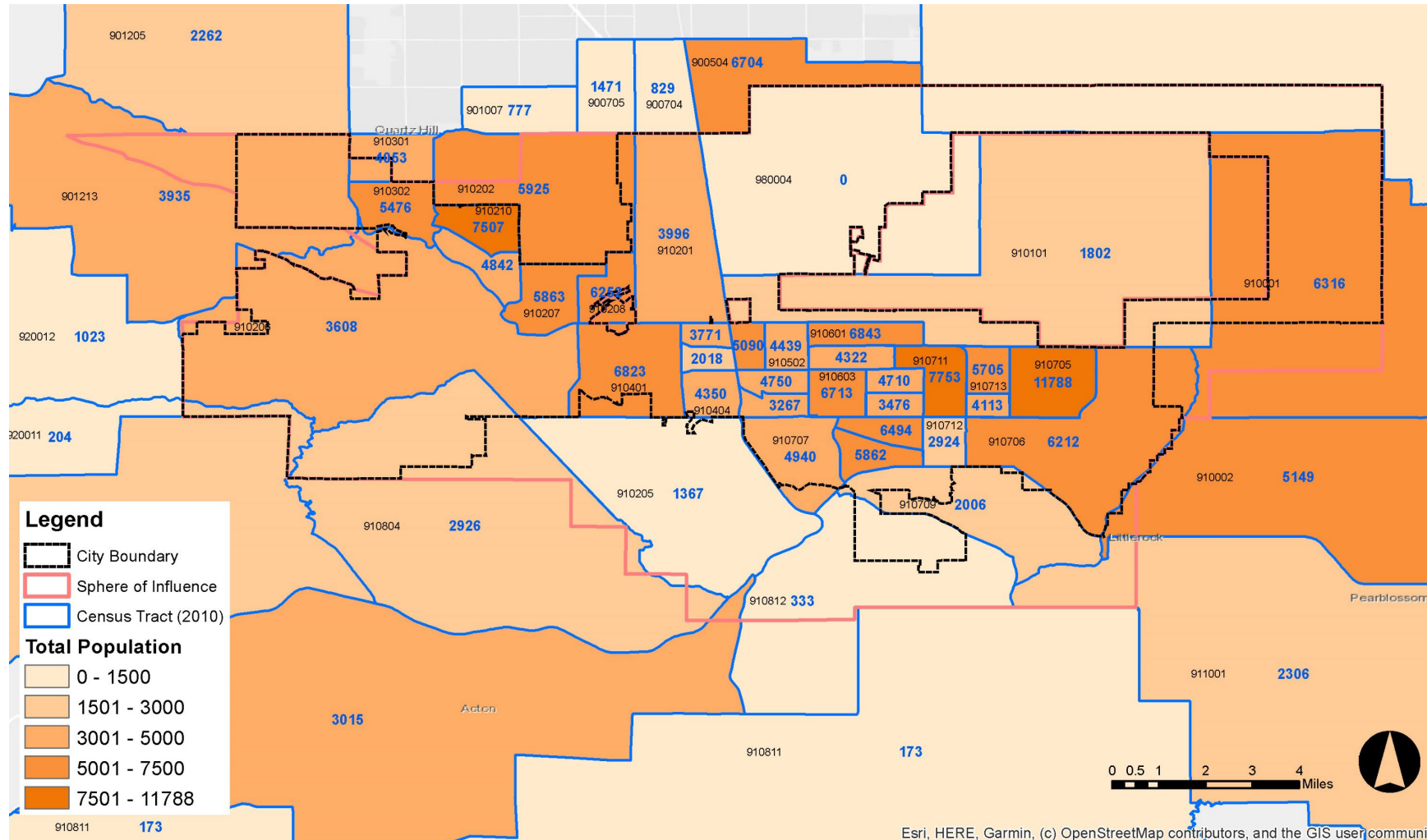
Census Tracts



Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Census Tracts

Population by Census Tracts



Top Five Populated Census Tracts

- 1.) 910705: 11,788 persons
- 2.) 910713: 7,753 persons
- 3.) 910210: 7,507 persons
- 4.) 910401: 6,823 persons
- 5.) 910603: 6,713 persons

Source: 5-Year ACS 2013-2017

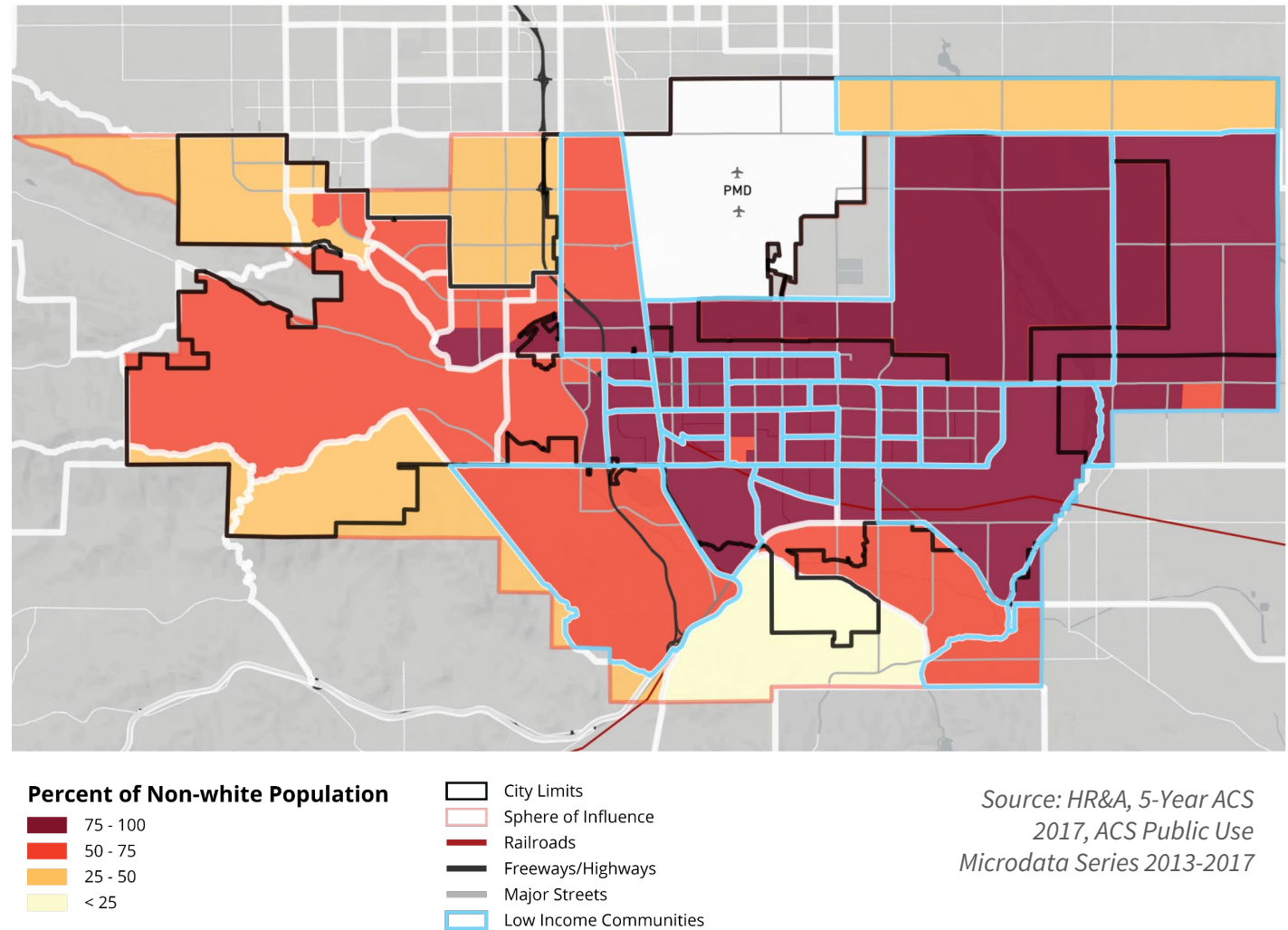
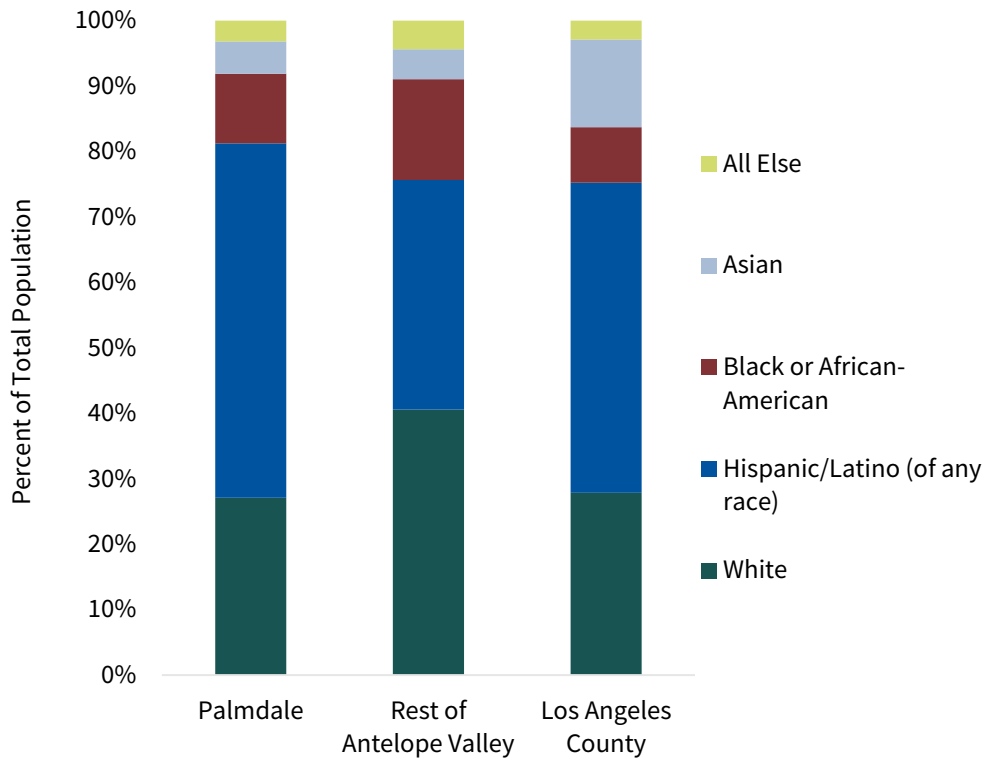
Considerations to Keep in Mind

- Census tracts do not generally coincide with jurisdictional boundaries
- Some of the census tracts are large and have areas that are unpopulated; we have removed the tract for Plant 42 from the analysis
- There are other tracts that are partially unpopulated, but need to be initially included due to income and other criteria

Social Determinants of Health

Race + Ethnicity

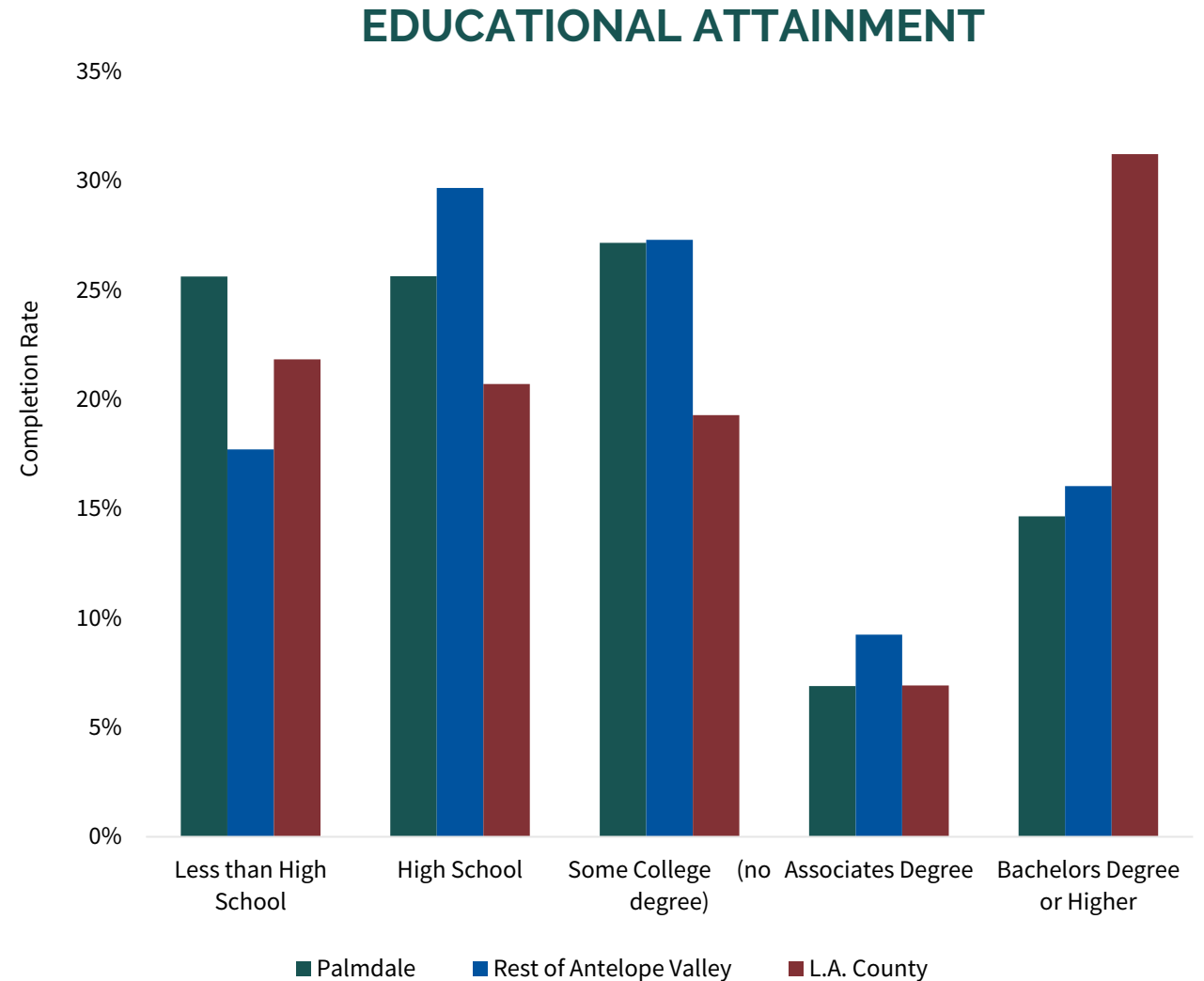
- Race is not a determinant of health on its own



Source: HR&A, 5-Year ACS 2017, ACS Public Use Microdata Series 2013-2017

Education Attainment

- Education strongly correlated with health outcomes
 - Mortality rates generally decrease as the proportion of adults with at least high school education increases

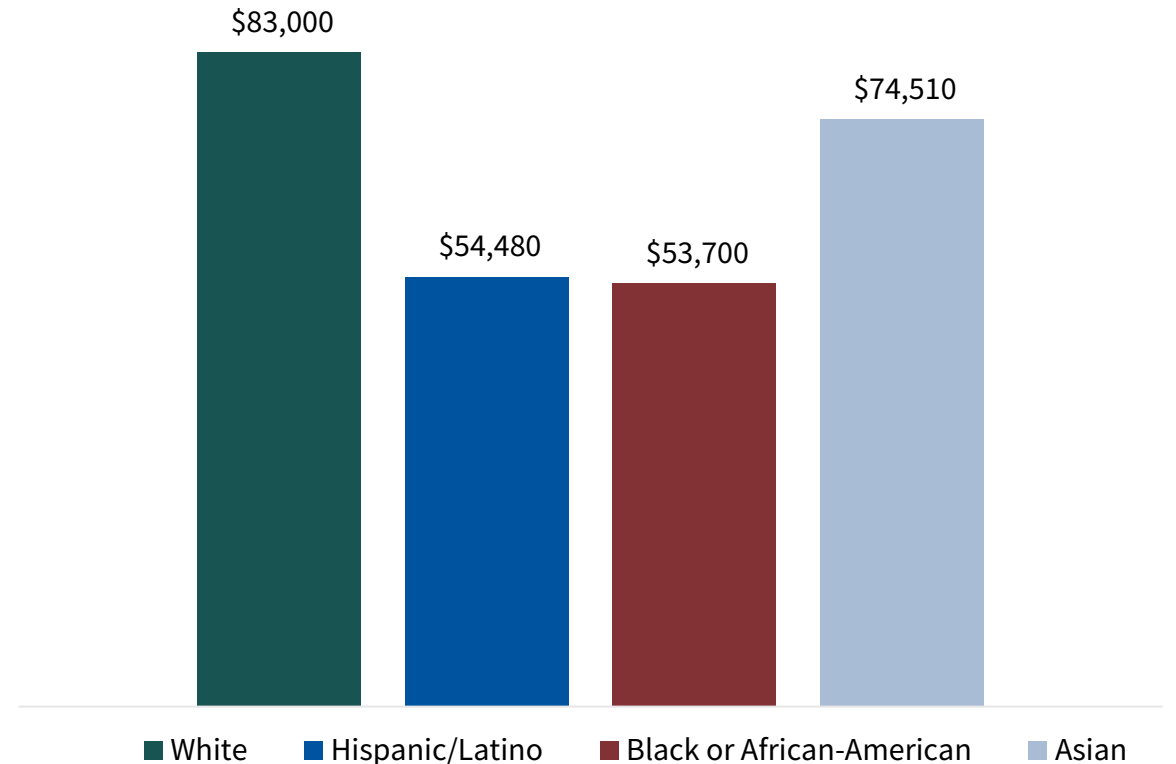


Source: 5-Year ACS 2017, ACS Public Use Microdata Series 2013-2017

Income

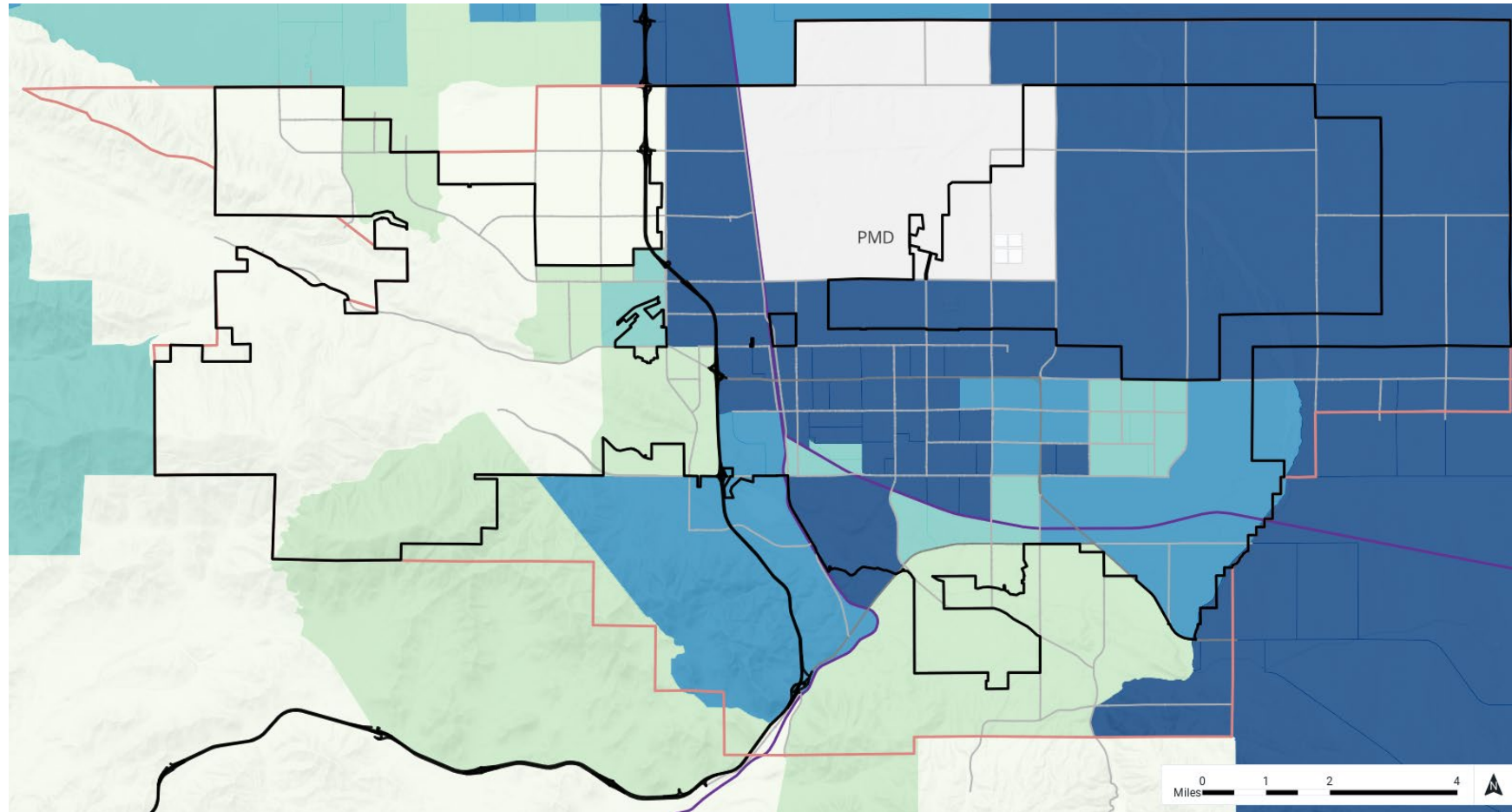
- 48% percent of Palmdale fall under 200 percent of the Federal Poverty Level.
 - 10% higher than poverty in the County (38%).
- **Stronger social determinant of health than educational attainment**
- Linked to ability to live in an area with high quality education, access healthcare, afford healthy foods, and live in healthy areas (with fewer sources of pollution and access to parks and open space)

INCOME BY ETHNICITY



Source: 5-Year ACS 2017, ACS Public Use Microdata Series 2013-2017

Median Household Income (Census Tracts)



	California	Los Angeles County
Area Median Income (AMI)	\$82,200	\$73,100
80% of AMI	\$65,760	\$58,480

Median Household Income

- < \$58,480
- \$58,480 - \$65,760
- \$65,760 - \$80,000
- \$80,000 - \$100,000
- > \$100,000

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets

Source: 5-Year ACS 2015-2019

Health Outcome Assessment

Life Expectancy and Leading Causes of Death

- Average life expectancy in Palmdale - **78.5 years**
- Los Angeles County's life expectancy - **82.3 years**
- No single cause for disparity
- **Leading causes of death** – COPD and Lung Cancer higher than County as a whole
- **Leading causes of premature death** – Drug overdose and motor vehicle crashes higher than County as a whole







Causes of Death		Causes of Premature Death (before age 75)	
Los Angeles County	Antelope Valley	Los Angeles County	Antelope Valley
Coronary Heart Disease	Coronary Heart Disease	Coronary Heart Disease	Coronary Heart Disease
Stroke	COPD	Homicide	Motor Vehicle Crash
COPD	Lung Cancer	Motor Vehicle Crash	Drug Overdose
Lung Cancer	Stroke	Drug Overdose	Homicide
Alzheimer's Disease	Alzheimer's Disease	Suicide	Diabetes

*Causes of death are listed in order of frequency
Source: Mortality in Los Angeles County (2013)*





Asthma (Percentile)

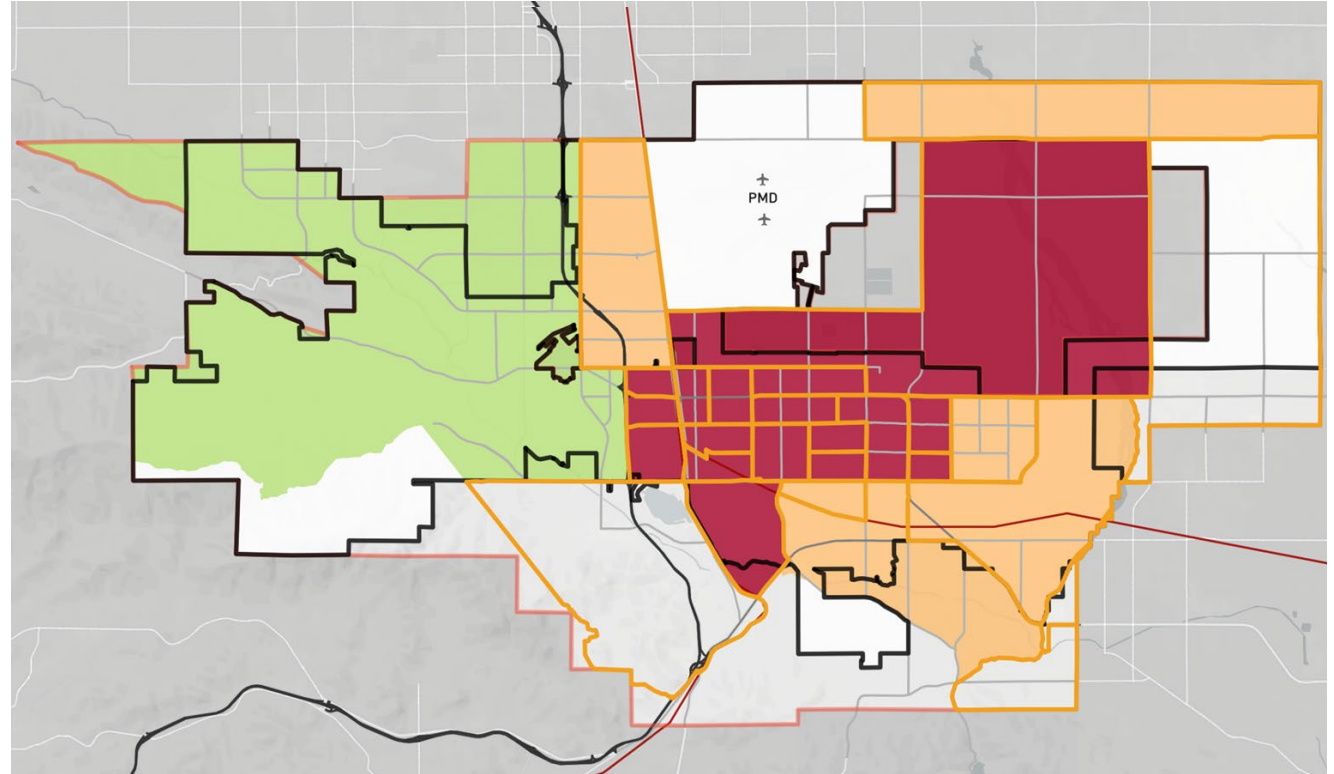
- **Higher rates** than Los Angeles County and State for both adults and children
- The lower the percentile, the higher the asthma rate (*Note: this is the opposite of most other indicators, because the data is from another source.*)

Legend

-  City Limits
-  Sphere of Influence
-  Railroads
-  Freeways/Highways
-  Major Streets
-  Low Income Communities

Asthma Percentile

-  0 - 25
-  25 - 50
-  50 - 75
-  75 - 100



Source: Healthy Places Index, Public Health Alliance of Southern California. (2020)

*Note: Empty color fill means no data is available.

Coronary Heart Disease (Percentile)

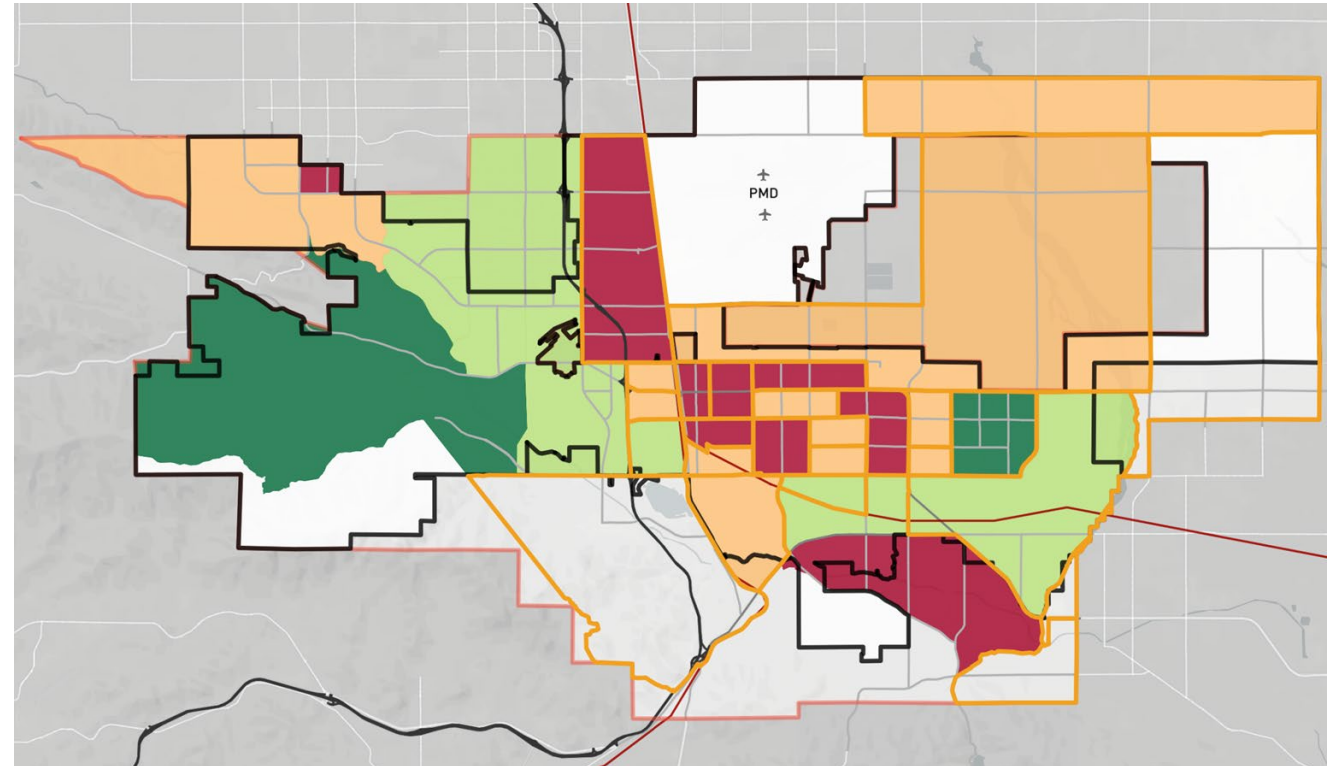
- **4.9%** of Palmdale adults have experienced Coronary Heart Disease
- **Higher** death rate than Los Angeles County
- The lower the percentile, the higher the heart disease rate (*Note: this is the opposite of most other indicators, because the data is from another source.*)

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Low Income Communities

Coronary Heart Disease Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100



Source: Healthy Places Index, Public Health Alliance of Southern California. (2020)

*Note: Empty color fill means no data is available.

Chronic Obstructive Pulmonary Disease (Percentile)

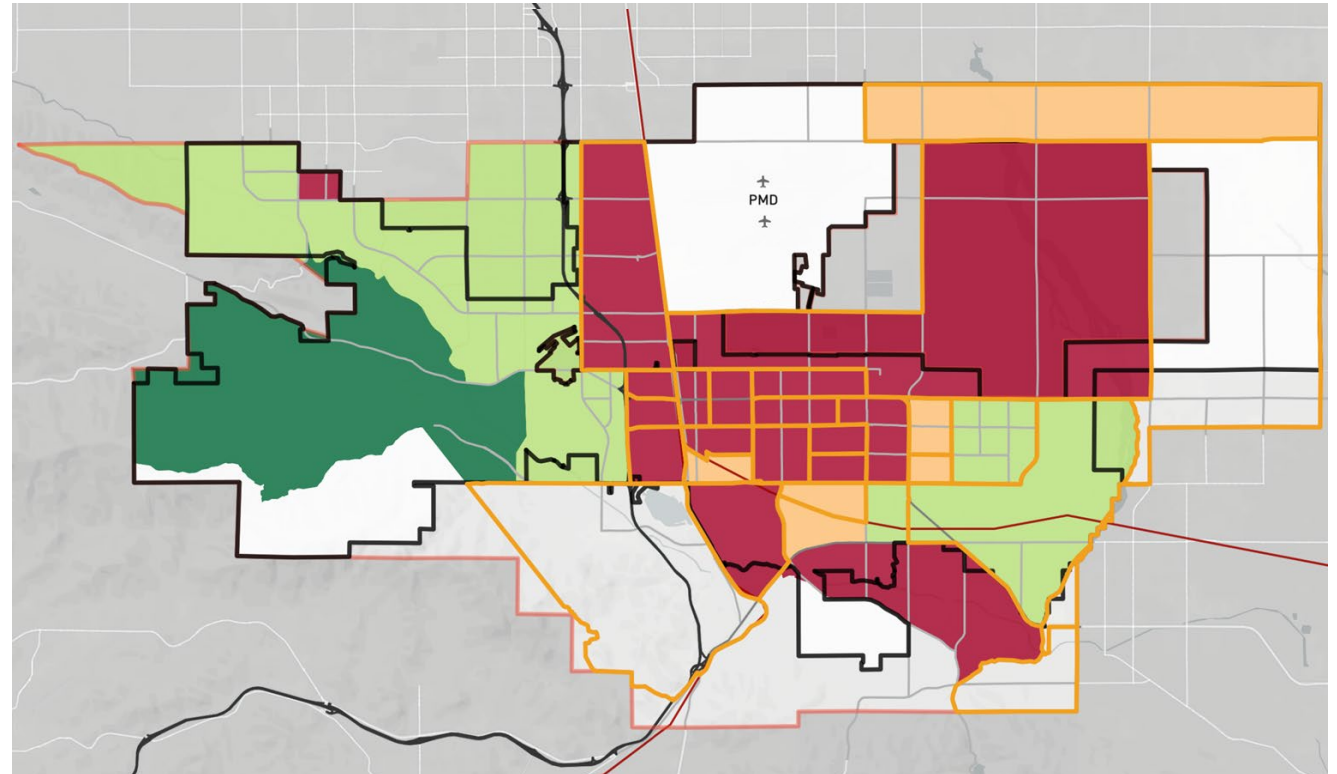
- 6% of Palmdale adults have experienced COPD
- Double than Los Angeles County death rate
- The lower the percentile, the higher the COPD rate (*Note: this is the opposite of most other indicators, because the data is from another source.*)

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Low Income Communities

Chronic Obstructive Pulmonary Disease Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100



Source: Healthy Places Index, Public Health Alliance of Southern California. (2020)

*Note: Empty color fill means no data is available.

Obesity (Percentile)

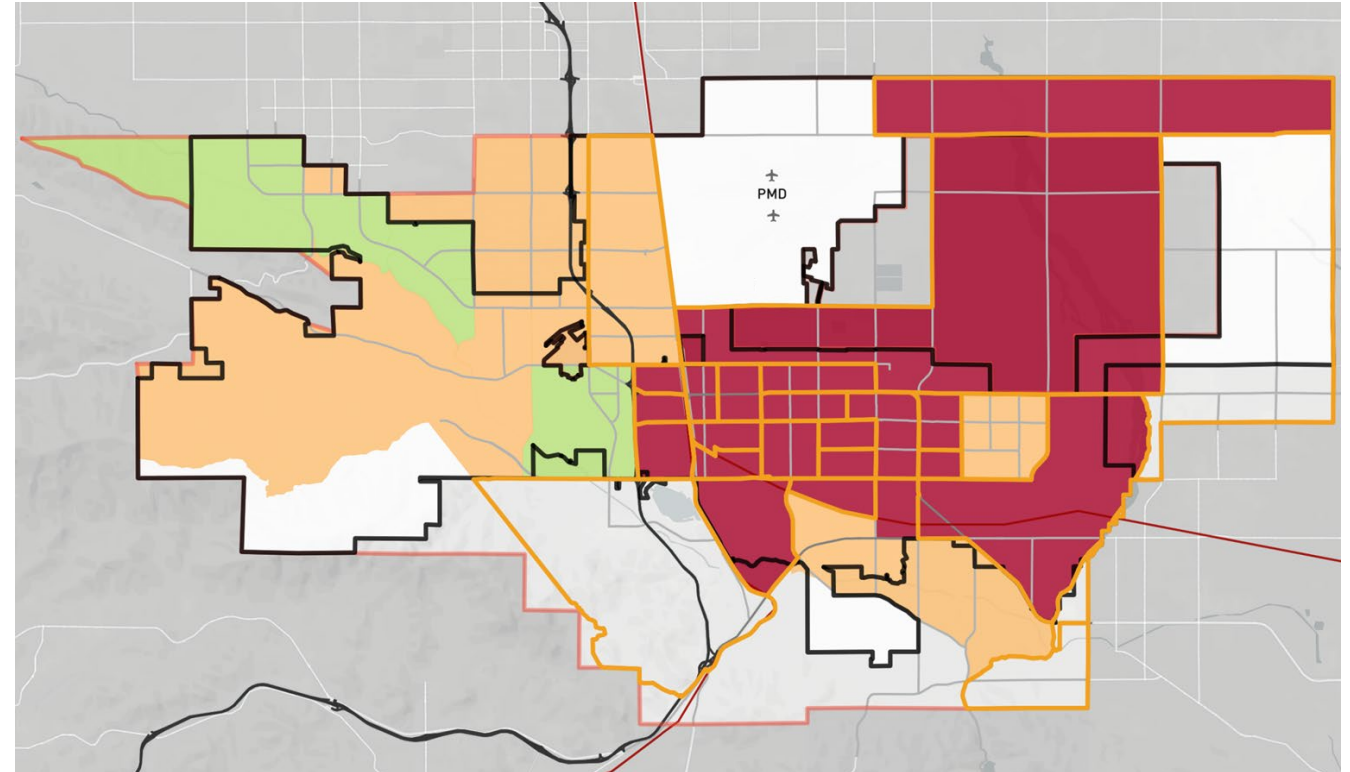
- **31%** of Palmdale adults are obese; higher than Los Angeles County (26%)
- **41%** of Palmdale youth are obese; higher than Los Angeles County (28%)
- The lower the percentile, the higher the obesity rate (Note: this is the opposite of most other indicators, because the data is from another source.)

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Low Income Communities

Obesity Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100



Source: Healthy Places Index, Public Health Alliance of Southern California. (2020)

*Note: Empty color fill means no data is available.

Built Environment Assessment

Cost-burdened Households (Percentile)

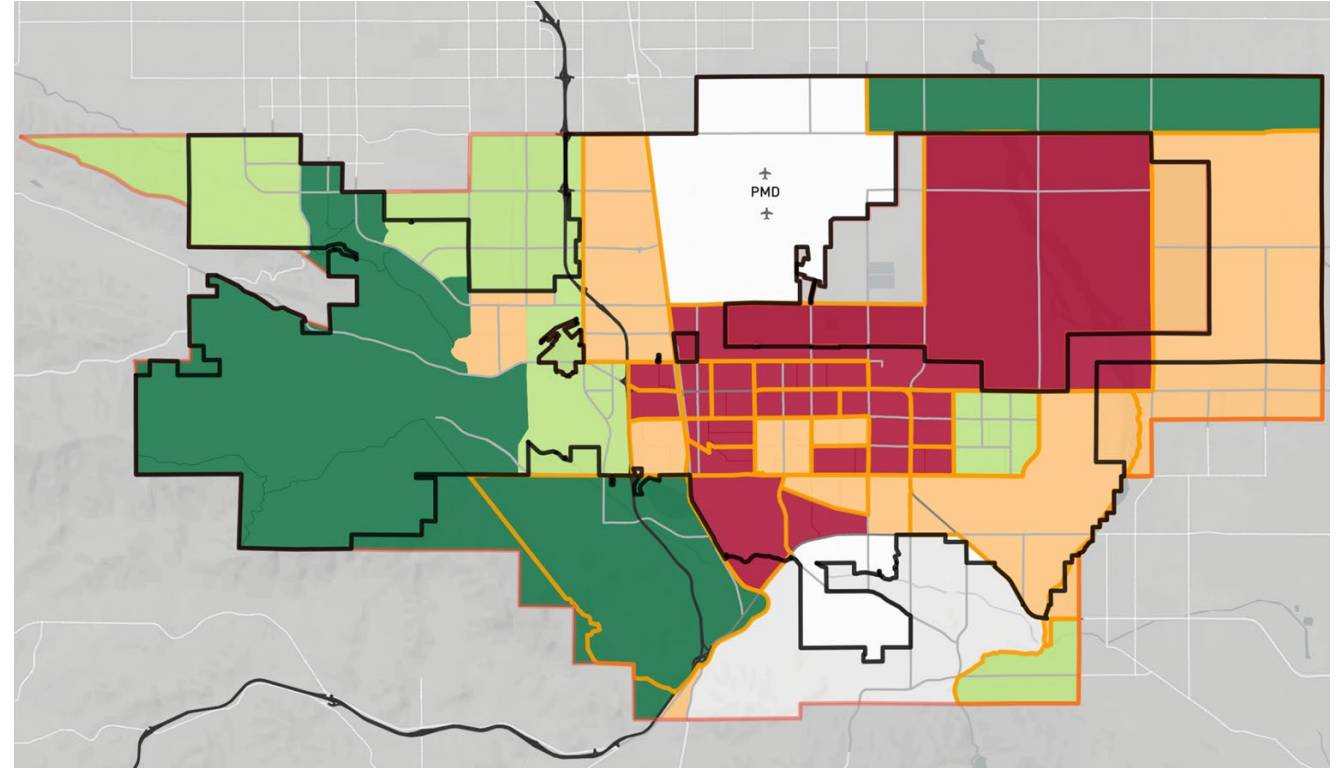
- Households that pay more than 30% of income on housing = “cost-burdened”
- 45% of all households in Palmdale are housing cost-burdened

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Low Income Communities

Cost-burdened Households Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100



Source: CalEnviroScreen 3.0 (2018)

*Note: Empty color fill means no data is available.

Age of Housing

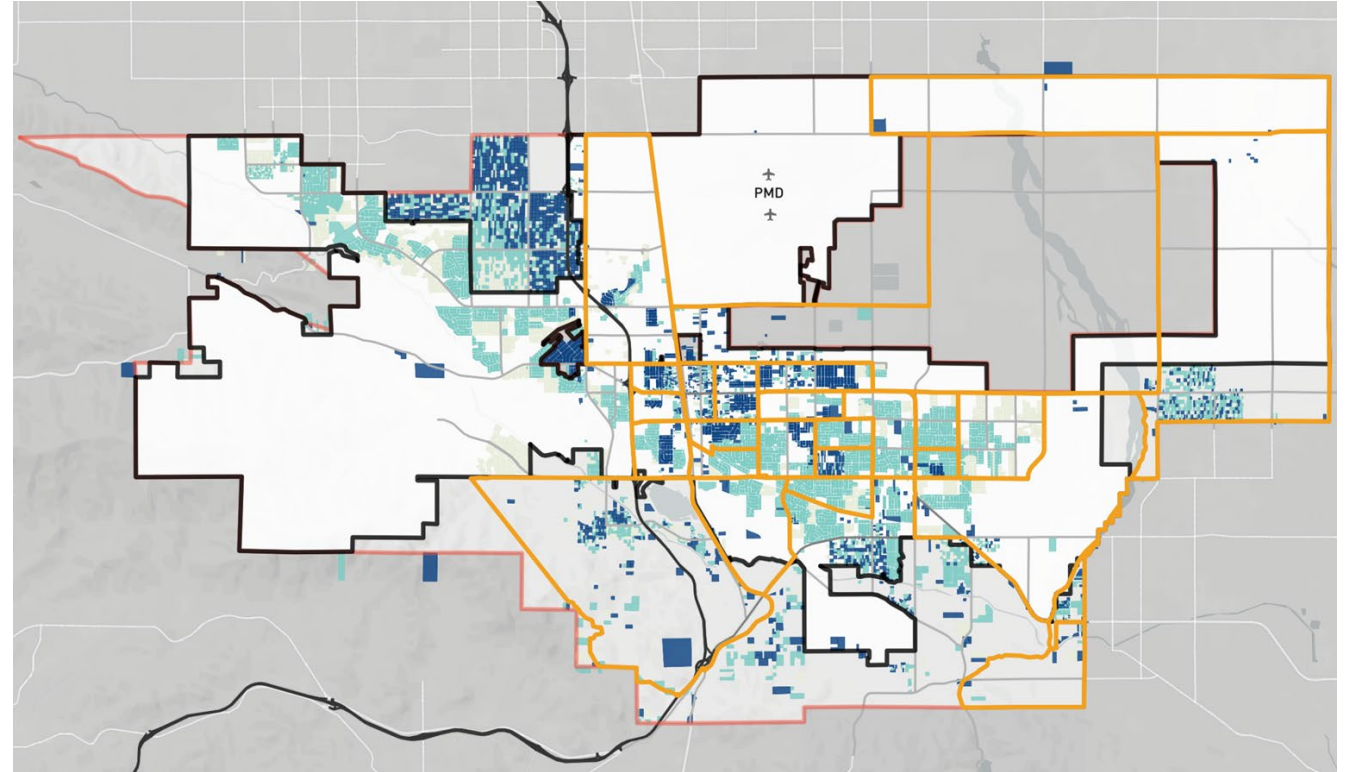
- Approximately 80% of housing built after 1980
- Lead-based paint banned in 1978
- Pockets of older homes in Palmdale

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Low Income Communities

Year Built

- Prior to 1980
- 1980 - 2000
- 2000 - 2017



Source: Parcel Reference Data via Urban Footprint (2020). Year built data available up to 2017.

*Note: Empty color fill means no data is available.

Walk Access to Parks

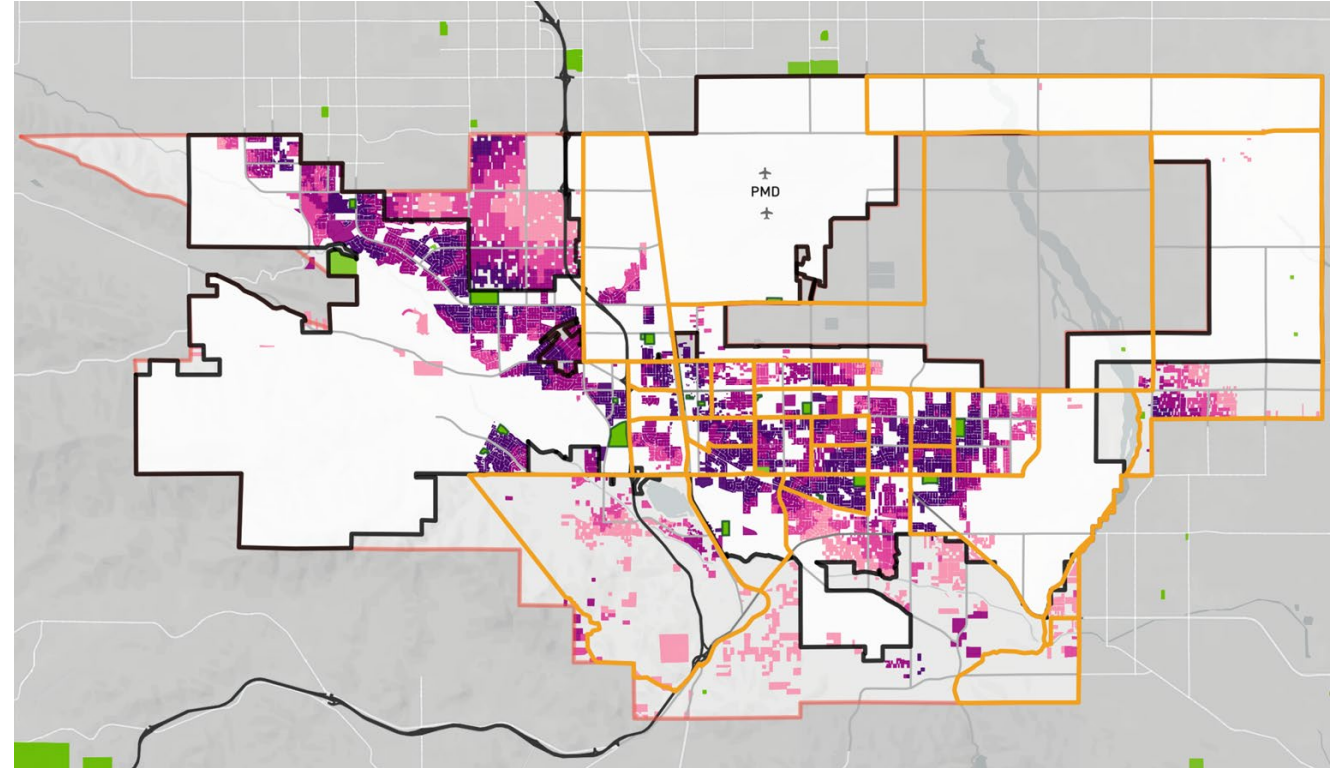
- Parks are distributed across the City
- 10-minute walk – 1/2 mile

Legend

- City Limits
- Sphere of Influence
- COP Developed Parks
- Other parks
- Railroads
- Freeways/Highways
- Major Streets
- Low Income Communities

Walking Time to Park (minutes)

- < 10
- 10 - 20
- 20 - 30
- 30 - 61



Source: COP developed parks dataset; Urban Footprint Analysis

*Note: Only residential parcels are shown on the map.

Supermarket Access (Percentile)

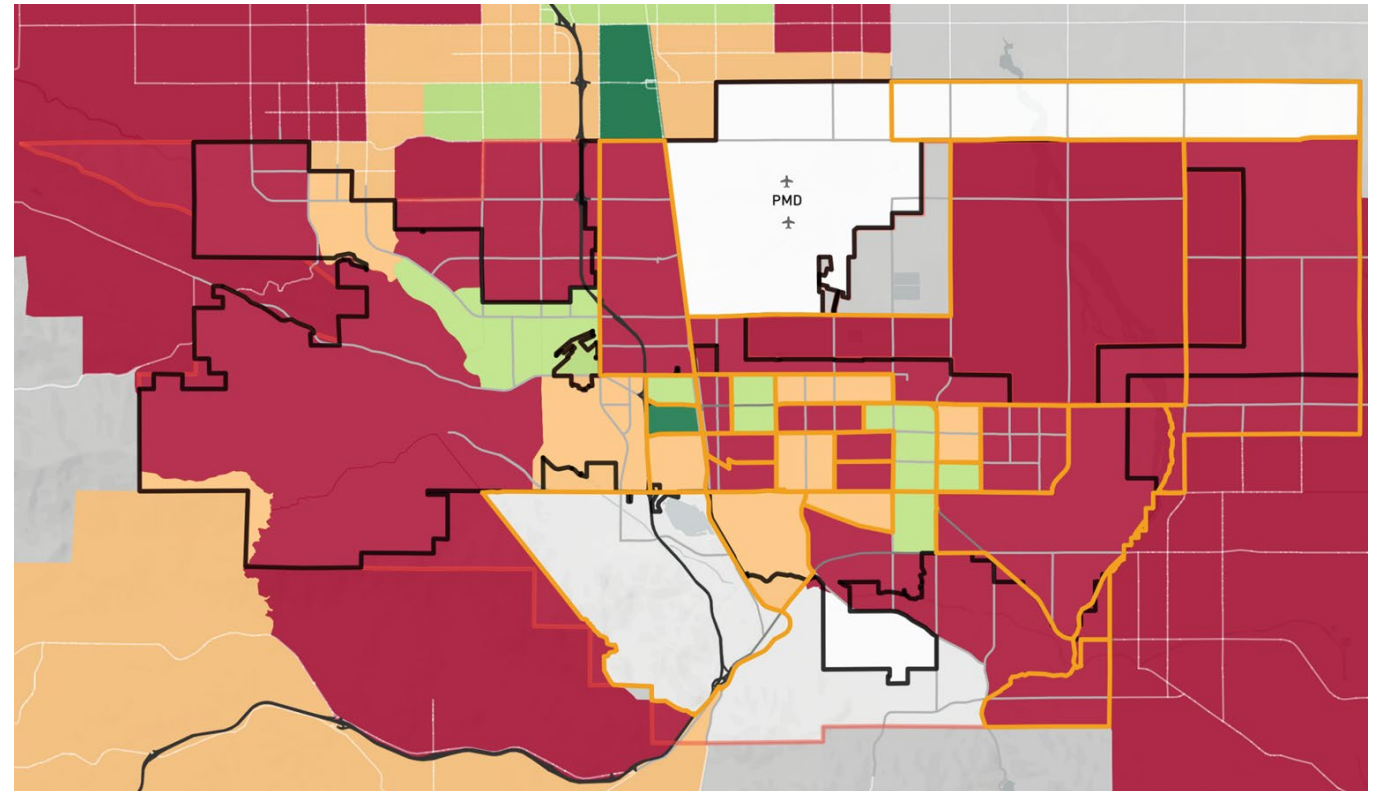
- “Food access” is based on physical access to a food store
- Various low-income census tracts, where over a quarter of the population lives, are **more than a mile away** from a supermarket or grocery store, (primarily south of Avenue Q and east of Sierra Highway)
- Limited grocery stores located in/near neighborhoods in western Palmdale
- Between 2002-2011, food insecurity increased 24% across the Antelope Valley
- The lower the percentile, the lower the supermarket access (*Note: this is the opposite of most other indicators, because the data is from another source.*)

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Low Income Communities

Supermarket Access Percentile

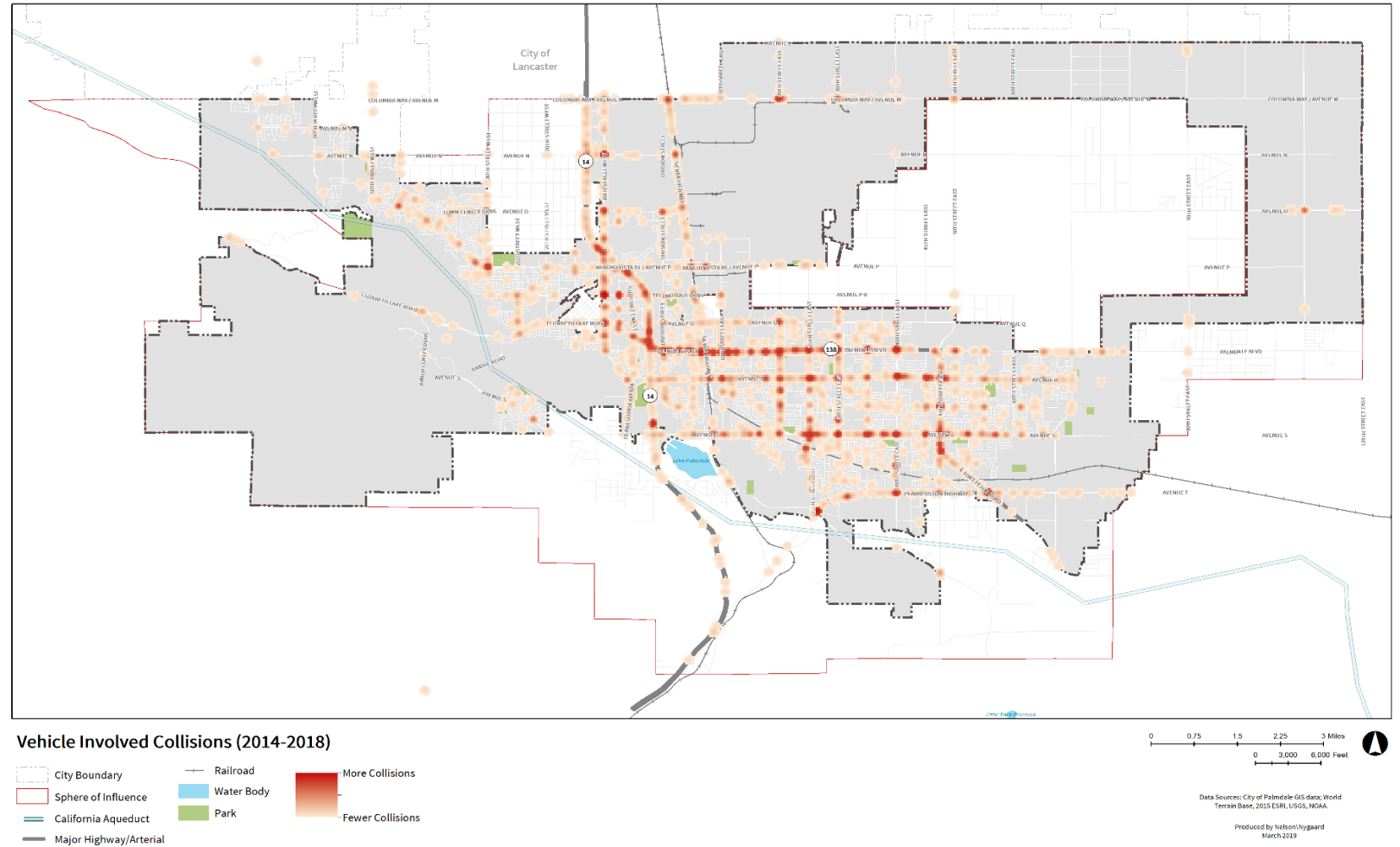
- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100



Source: Healthy Places Index, Public Health Alliance of Southern California. (2020)
*Note: Empty color fill means no data is available.

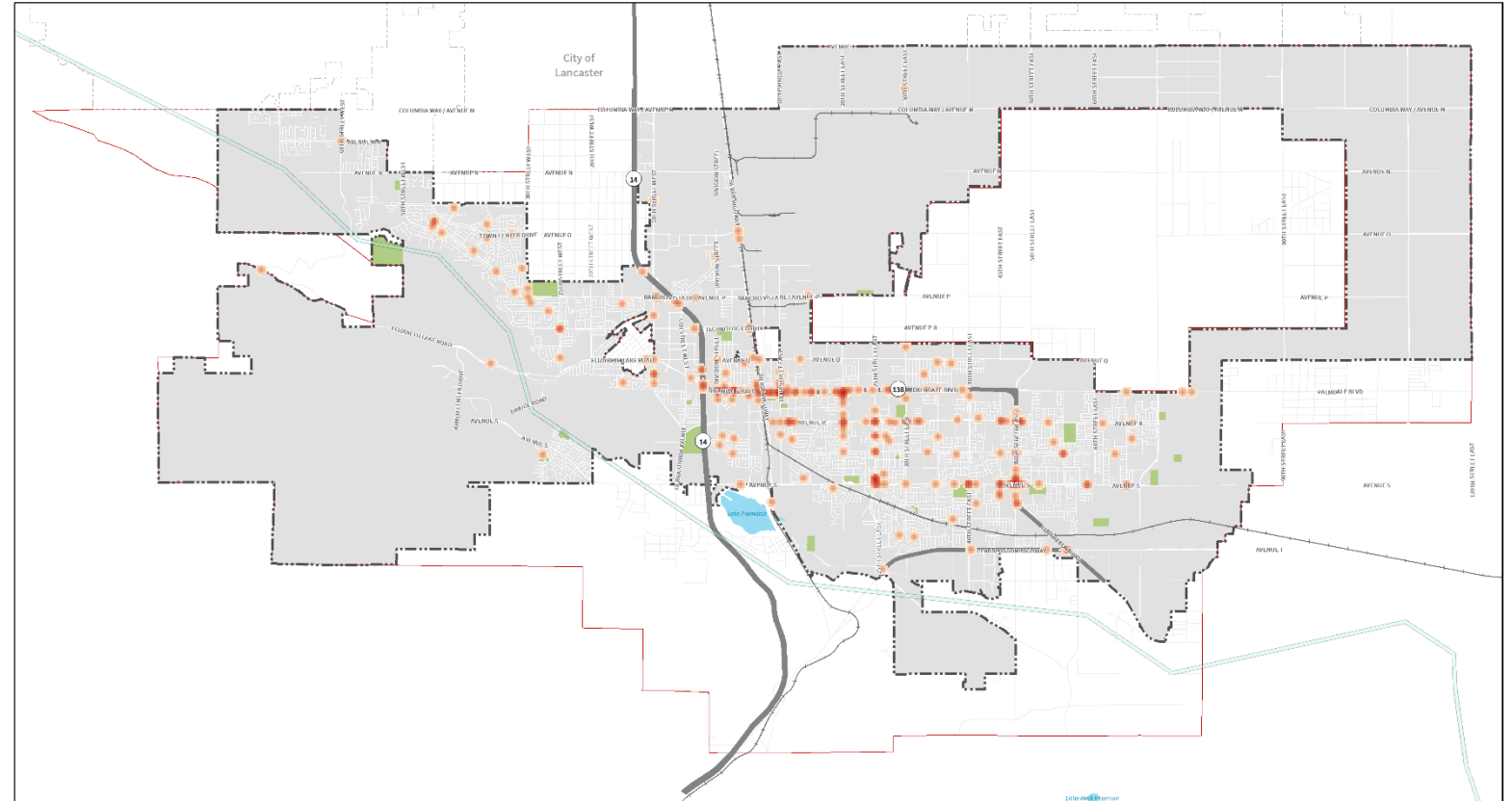
Vehicle Involved Collisions

- Heat map
- Concentrated along SR14 between 10th Street West and Palmdale Boulevard, and along Palmdale Boulevard between SR-14 and 25th Street East
- Other concentrations along 47th Street East and East Avenue S
- In 2014-2018, 2% of collisions resulted in fatalities and 7% resulted in severe or fatal injuries

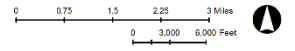
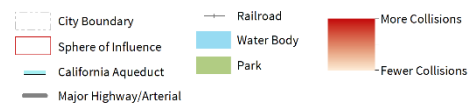


Pedestrian and Bicycle Collisions

- Heat map
- Higher occurrence east of SR-14 along Palmdale Boulevard, Avenue S, and Avenue R.
- Concentration of collisions at the intersections of major arterials.
- In 2014-2018, there were 299 incidents. 17% resulted in severe or fatal injuries.



Bicycle and Pedestrian Involved Collisions (2014-2018)

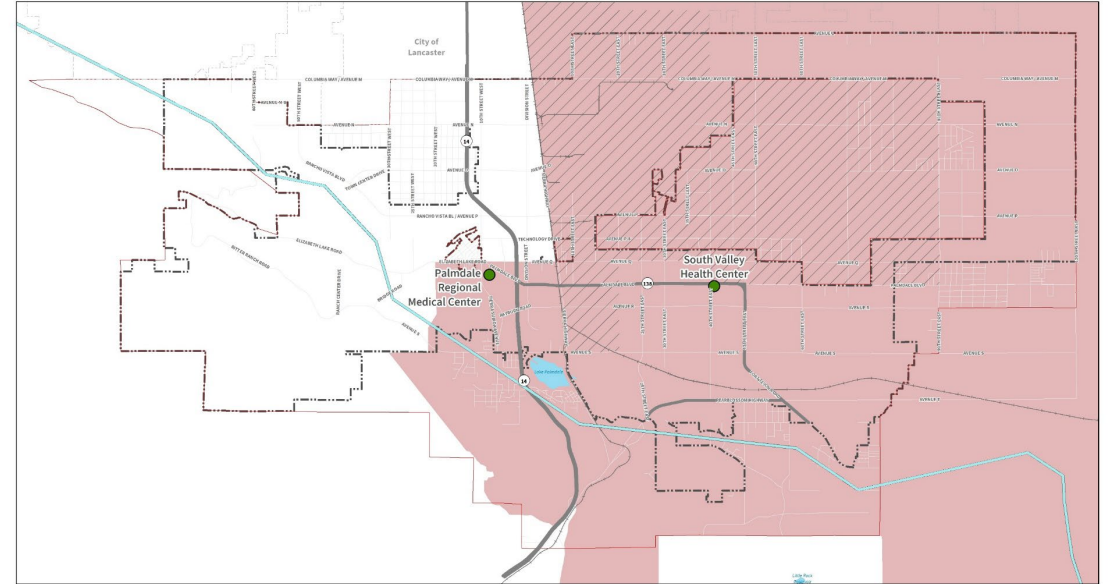


Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.
Produced by Nelson\Nygaard
March 2019

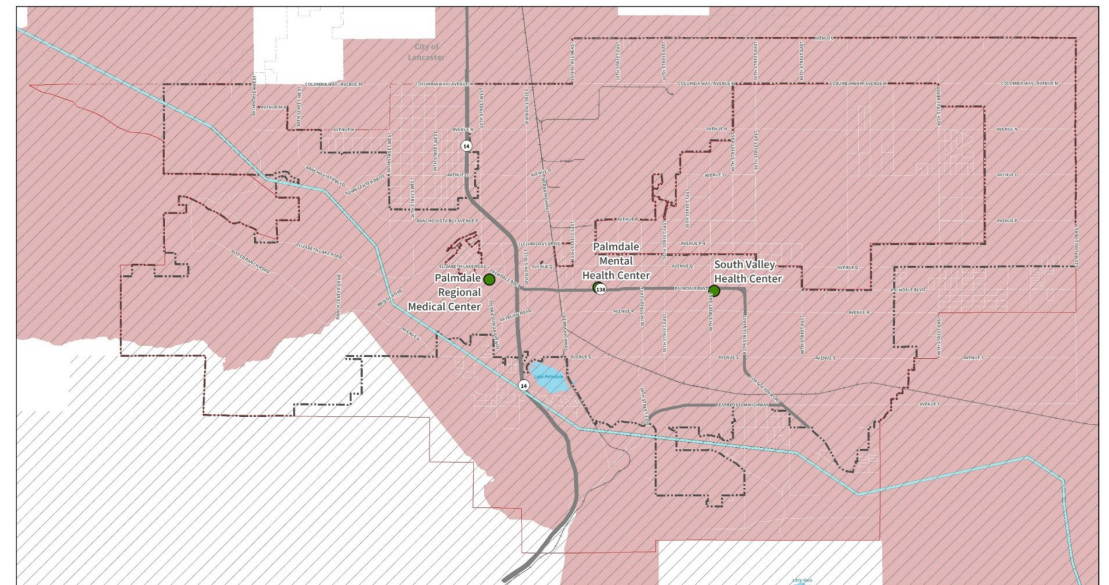
Access to Healthcare

- 25% of adults in Palmdale report difficulty accessing health care
- Medical Health Provider Shortage Area – east of SR-14
- Almost entire City is designated as a Mental Health Provider Shortage Area

PRIMARY CARE PROVIDER SHORTAGE AREA



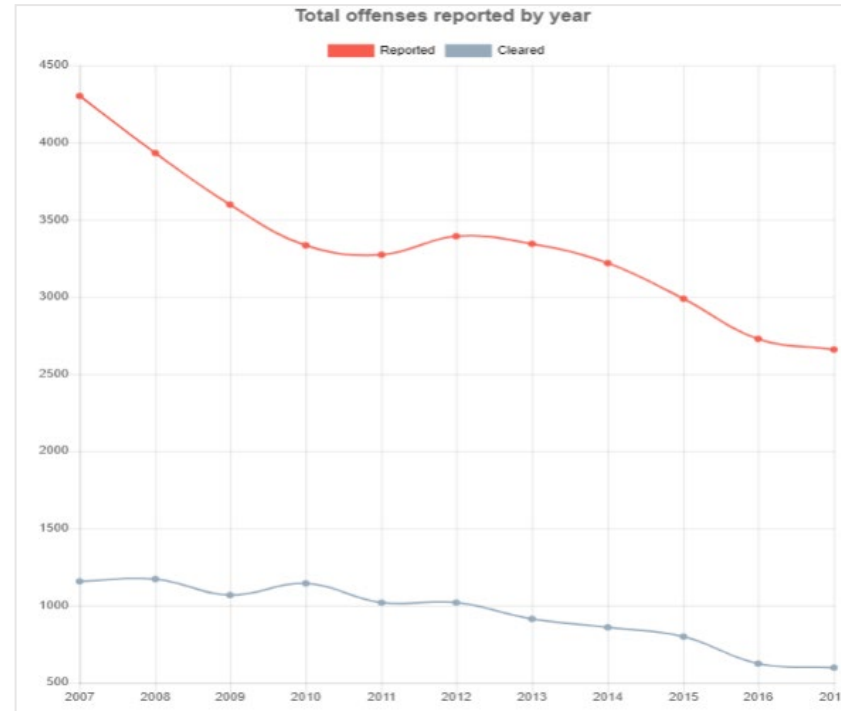
MENTAL HEALTH CARE PROVIDER SHORTAGE AREA



Crime + Public Safety

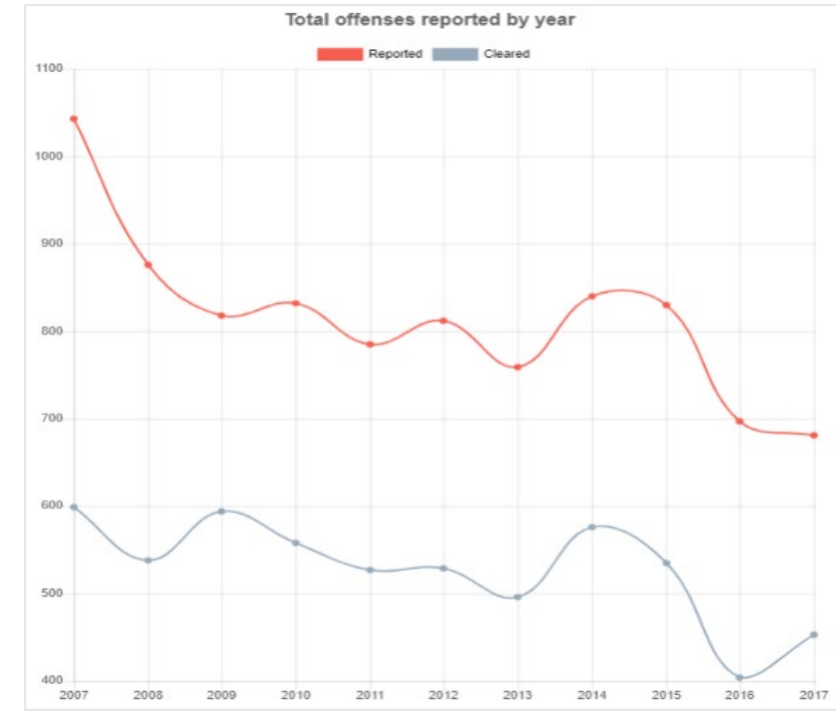
- Real and perceived crime can have health, social, and behavioral implications
- In general, community safety has improved in recent years
- Overall, serious crime rates (per 100,000 population) are lower in Palmdale (436.5) than in the County (551)*
- Palmdale recently named among top 10% of the safest cities in California (Safety.com, 2020)

Property Crime Offenses



Source: FBI Crime Data Explorer (2007-2017)

Violent Crime Offenses



Source: FBI Crime Data Explorer (2007-2017)

The US Department of Justice defines serious crime as Part 1 offenses and include murders, nonnegligent homicides, forcible and revised rape, robberies, aggravated assaults, burglaries, motor vehicle thefts, larceny-thefts, and arsons.

*LA County Health Profile. (2018). City of Palmdale. Retrieved from: <http://publichealth.lacounty.gov/ohae/docs/cchp/pdf/2018/Palmdale.pdf>.

Environmental Pollution Assessment

Method 1: CalEnviroScreen 4.0

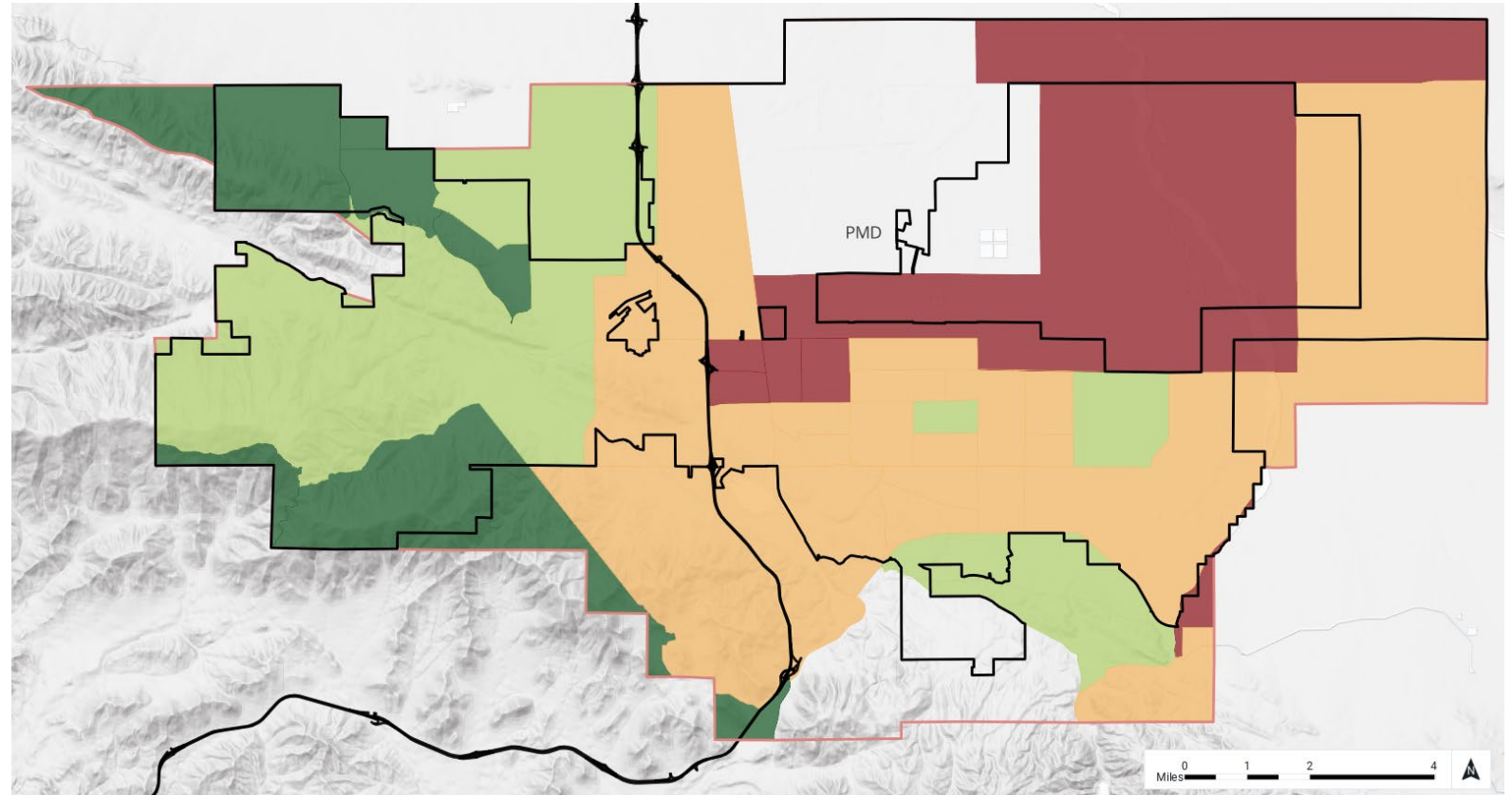
- A few central areas of the City have an overall CalEnviroScreen score above the 75th percentile.
- Method 1 identified qualified Disadvantaged Communities.

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets

CalEnviroScreen Percentile

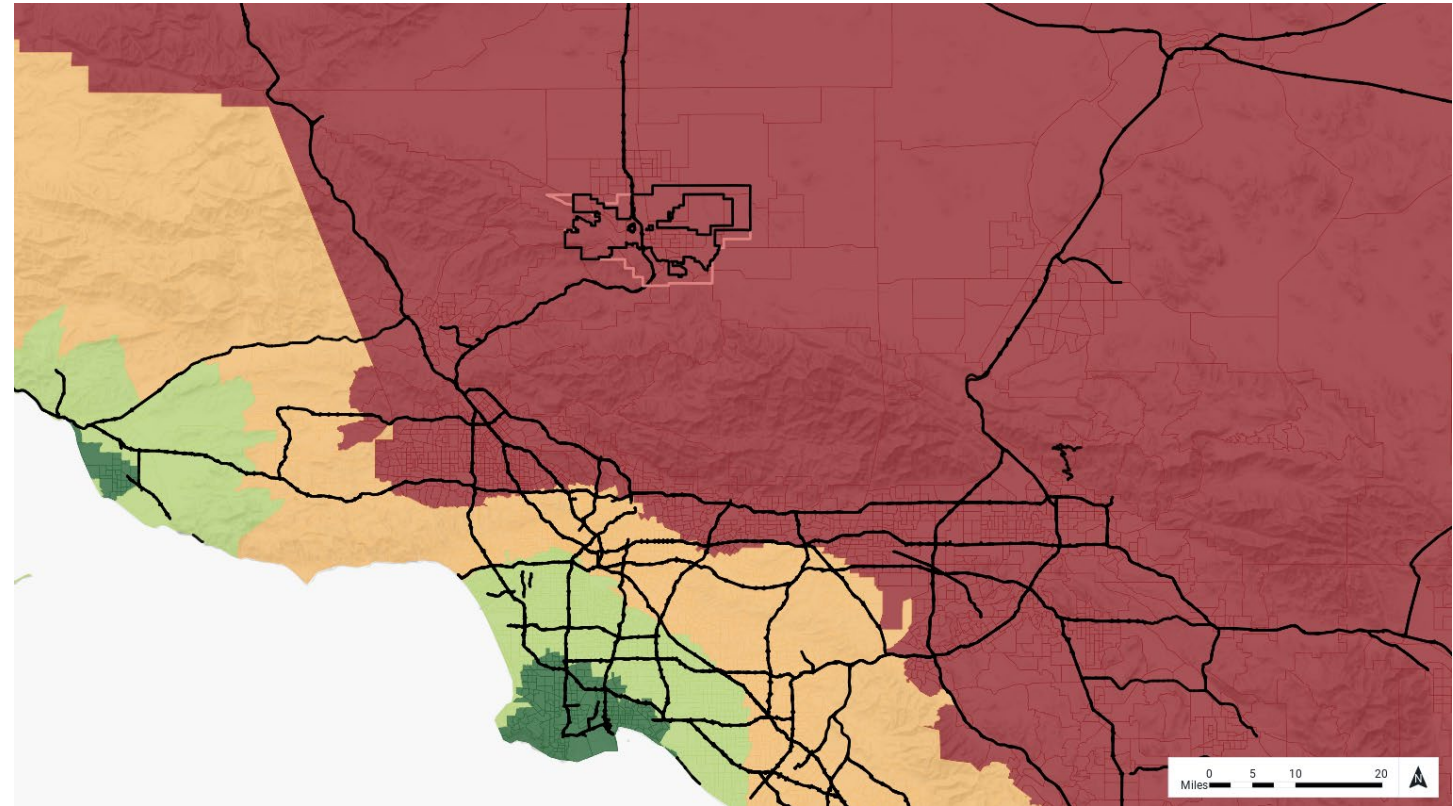
- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100



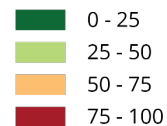
Source: CalEnviroScreen 4.0 (2021)
*Note: Empty color fill means no data is available.

Method 2: Pollution Factors—Ozone

- Ozone is the primary component of smog, and it causes numerous adverse health effects, including respiratory irritation and worsening of asthma and other lung diseases.
- Entire Antelope Valley basin has poor ozone levels.
- The entire city is over the 75th percentile for ozone pollution. Therefore, all low-income areas would be qualified as Disadvantaged Communities.
- **Palmdale (60 ppb) has higher levels of Ozone than the County (50 ppb), but lower than the State established standard (70ppb).**



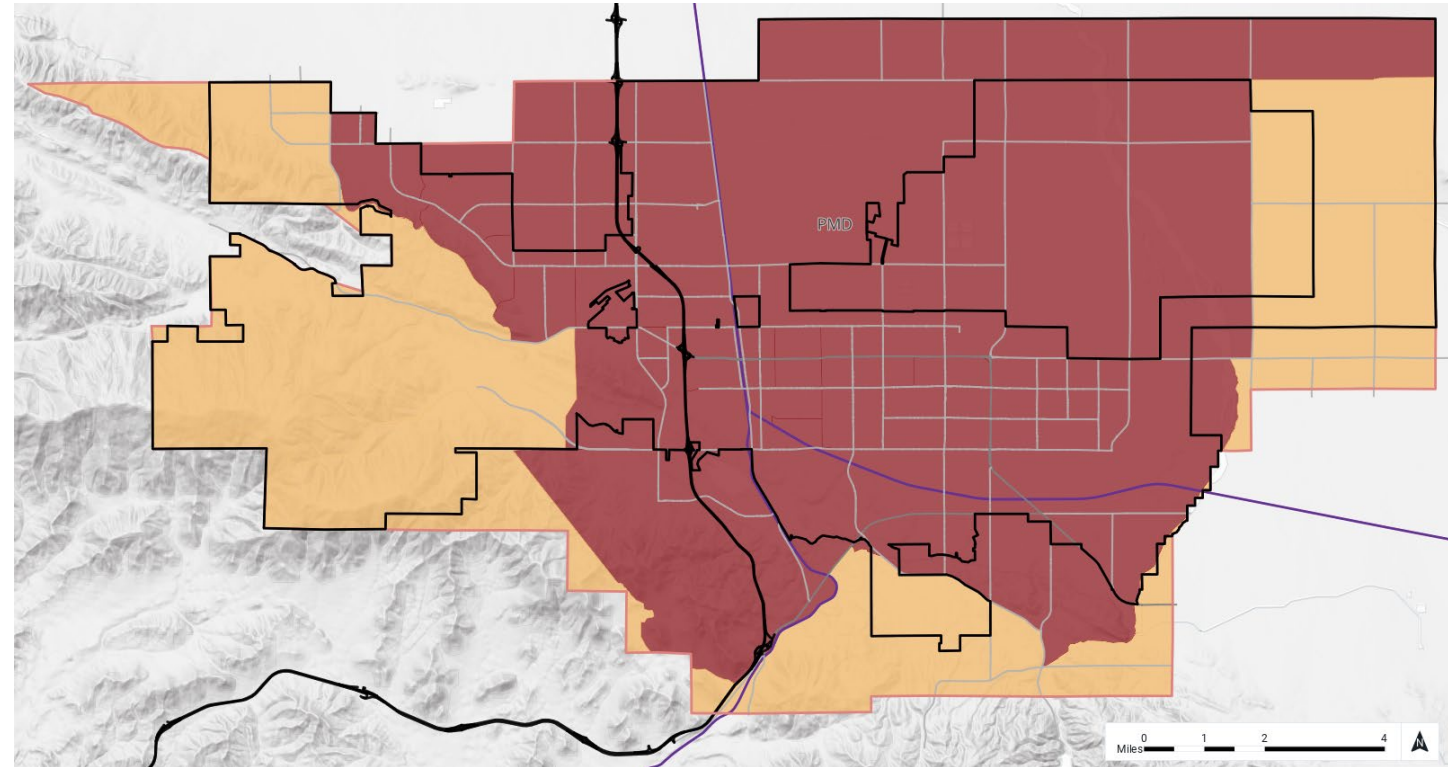
Pollution Factor Percentile



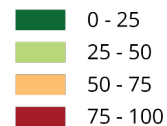
Source: CalEnviroScreen 4.0 (2021)

Method 2: Pollution Factors—Toxic Releases

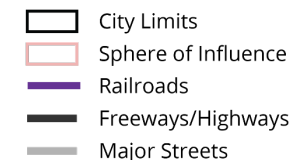
- Industrial facilities (Plant 42 and the associated military and industrial operations) that make or use toxic chemicals can release these chemicals into the air. People living near facilities may breathe contaminated air regularly or if contaminants are released during an accident.
- Majority of the city has a high relative concentration of toxic chemicals released into the air compared to the rest of the state.
- Much of the city is above the 75th percentile for toxic releases. Thus, many low-income areas would qualify as Disadvantaged Communities.



Pollution Factor Percentile



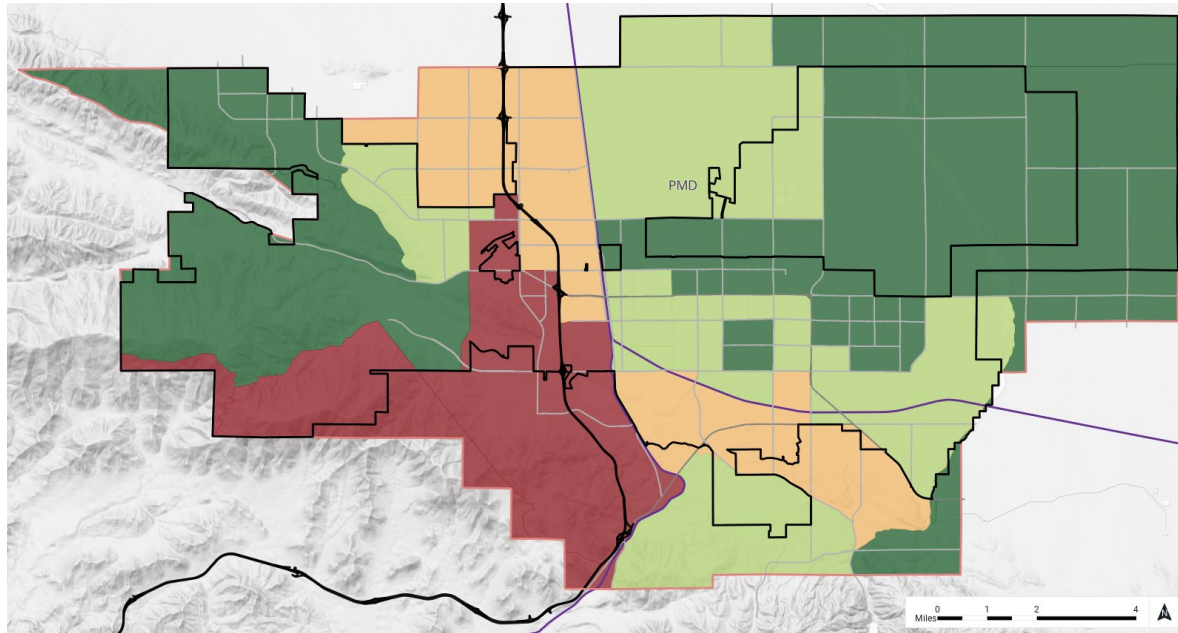
Legend



Source: CalEnviroScreen 4.0 (2021)
*Note: Empty color fill means no data is available.

Method 2: Other Significant Pollution Factors

Traffic Density



Note: One low-income census tract (910404) along SR-14 scored in the top 25% for this indicator and, thus, can be considered a “Disadvantaged Community”

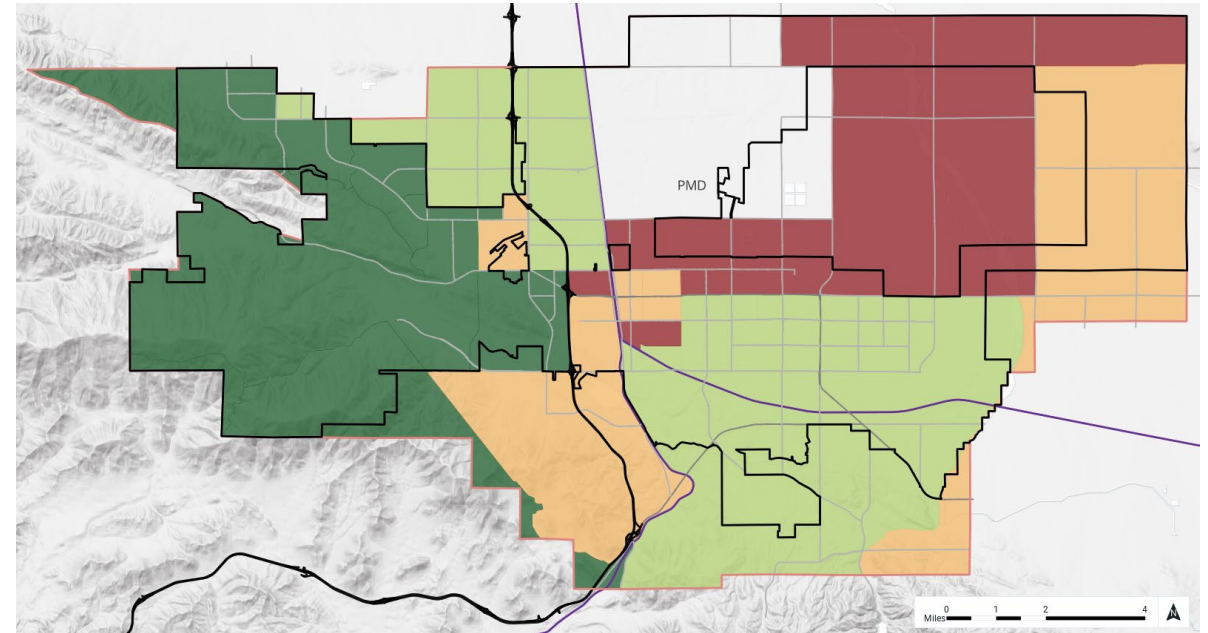
Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets

Pollution Factor Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100

Children’s Lead Risk from Housing



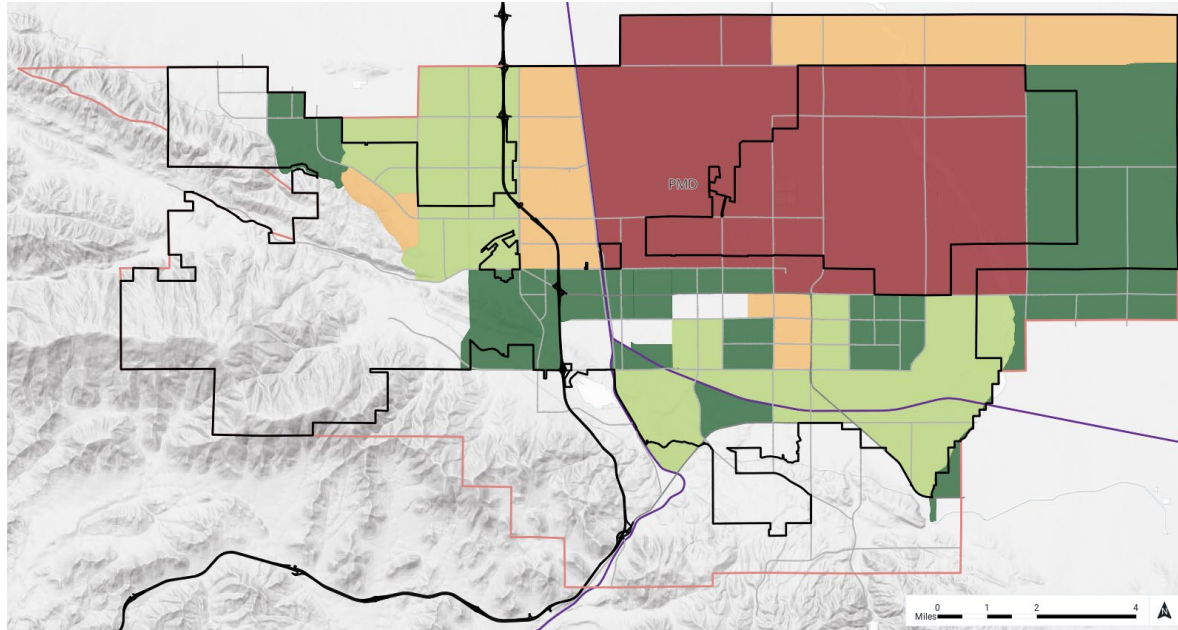
Note: New indicator added in CES 4.0. The identification is based on the age of homes and low-income households to identify the likelihood, not actual, prevalence of lead in homes. Four low-income census tracts scored in the top 25% for this indicator and, thus, can be considered “Disadvantaged Communities”

Source: CalEnviroScreen 4.0 (2021)

*Note: Empty color fill means no data is available.

Method 2: Other Significant Pollution Factors

Hazardous Waste



Note: The two census tracts (980004 & 910101) with a high pollution burden for hazardous waste are both unpopulated areas owned by Plant 42 and the airport. Neither of these census tracts are low-income areas.

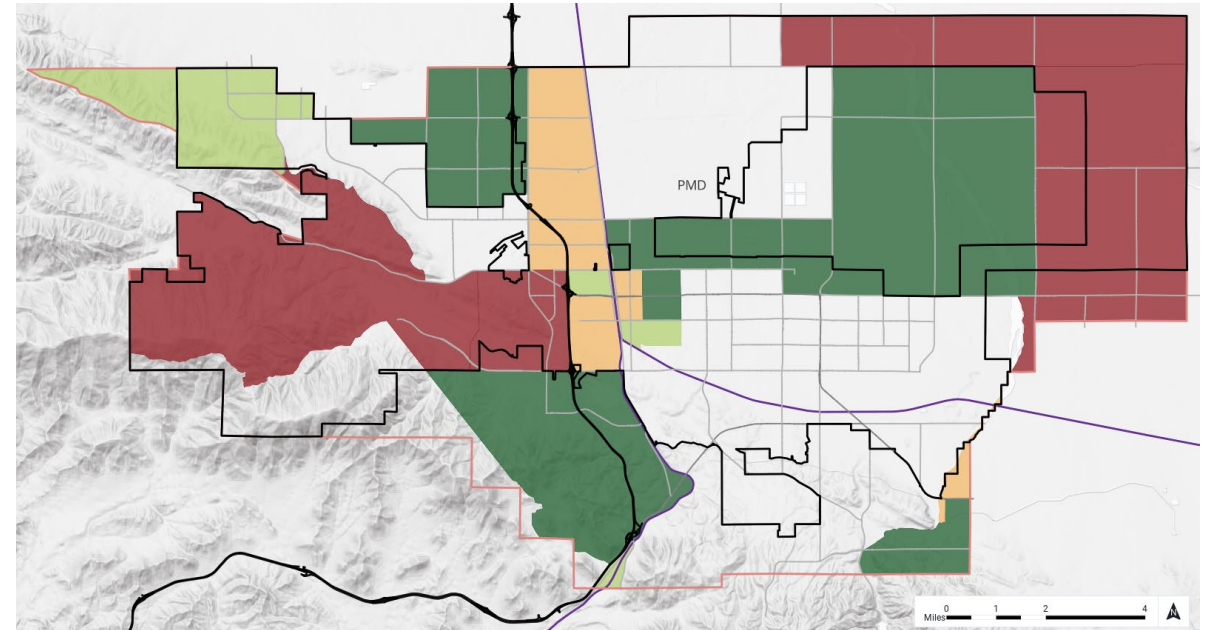
Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets

Pollution Factor Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100

Solid Waste Sites

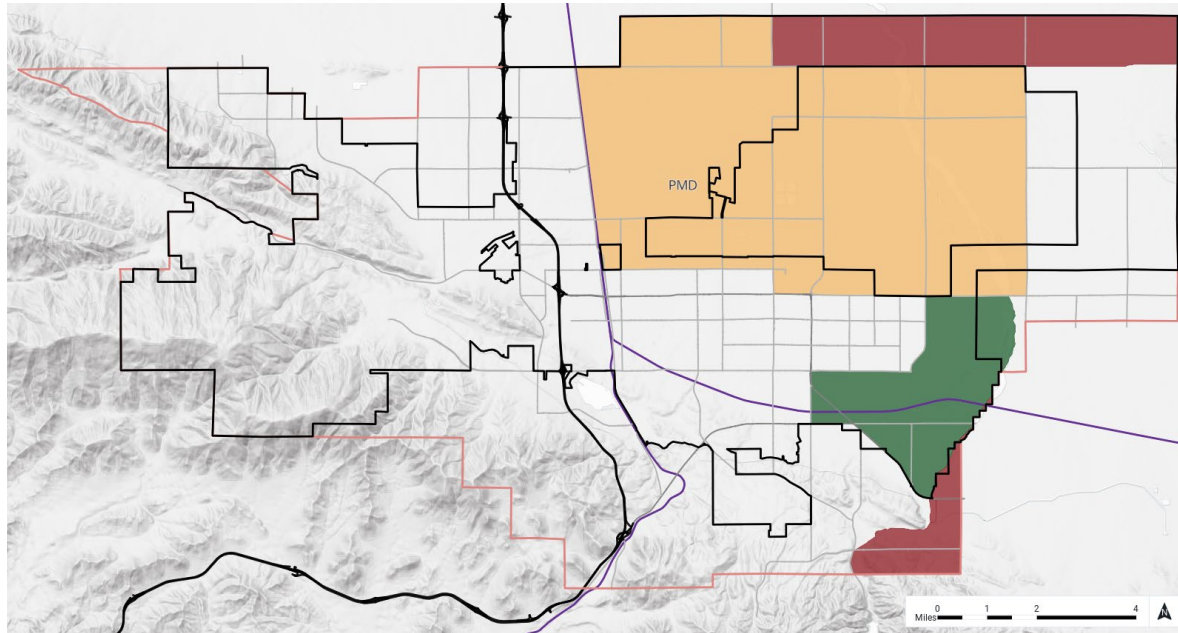


Note: This indicator measures the presence of solid waste sites rather than actual risk of harm from these facilities. The census tract on the western edge of the city (910206) is the location of the City's landfill. Moreover, this census tract is not a low-income area.

Source: CalEnviroScreen 4.0 (2021)
 *Note: Empty color fill means no data is available.

Method 2: Other Significant Pollution Factors

Pesticide Use

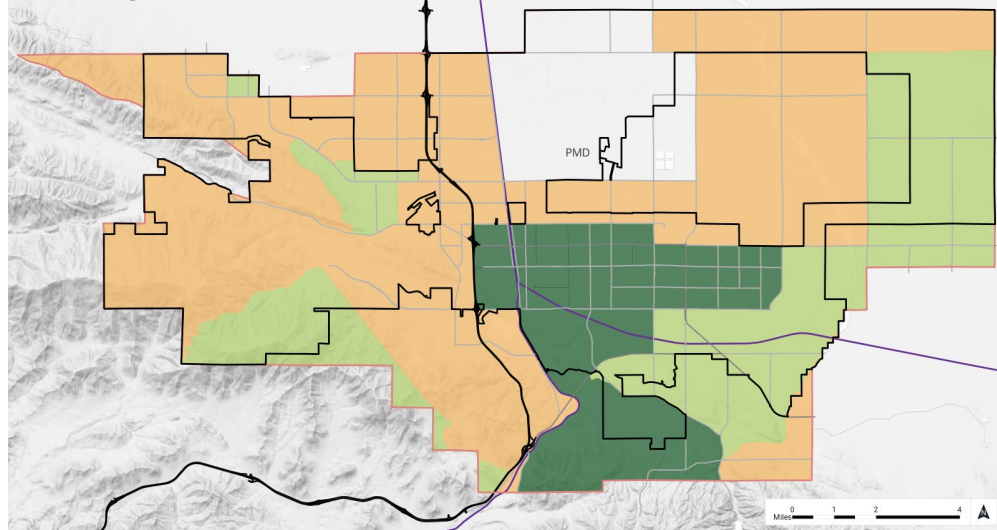


Note: The two census tracts (900201 & 911001) with a high pollution burden for pesticides are located primarily outside the city, and their areas that fall within the city are unpopulated. Moreover, neither of these census tracts are low-income areas.

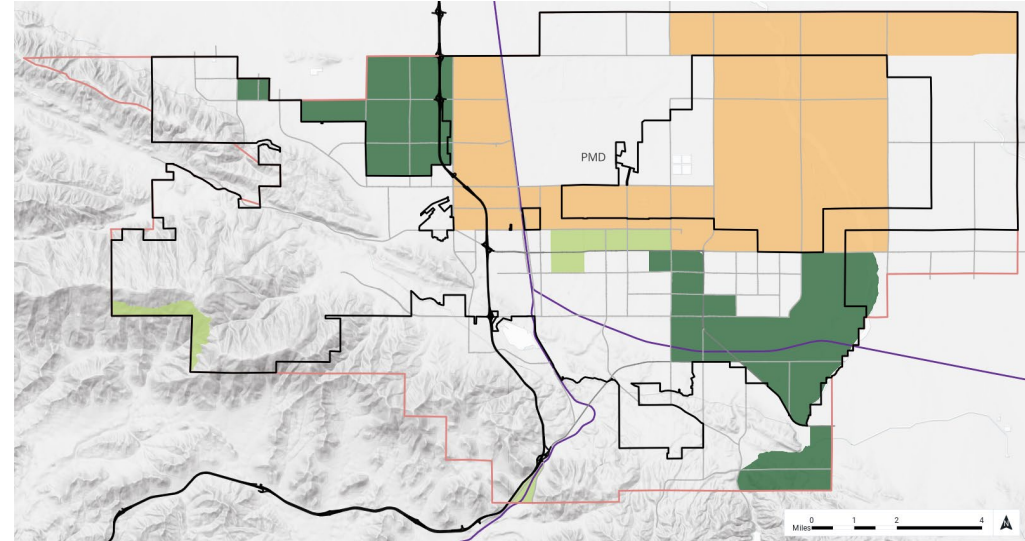
Source: CalEnviroScreen 4.0 (2021)
*Note: Empty color fill means no data is available.

Method 2: Non-Significant Pollution Factors

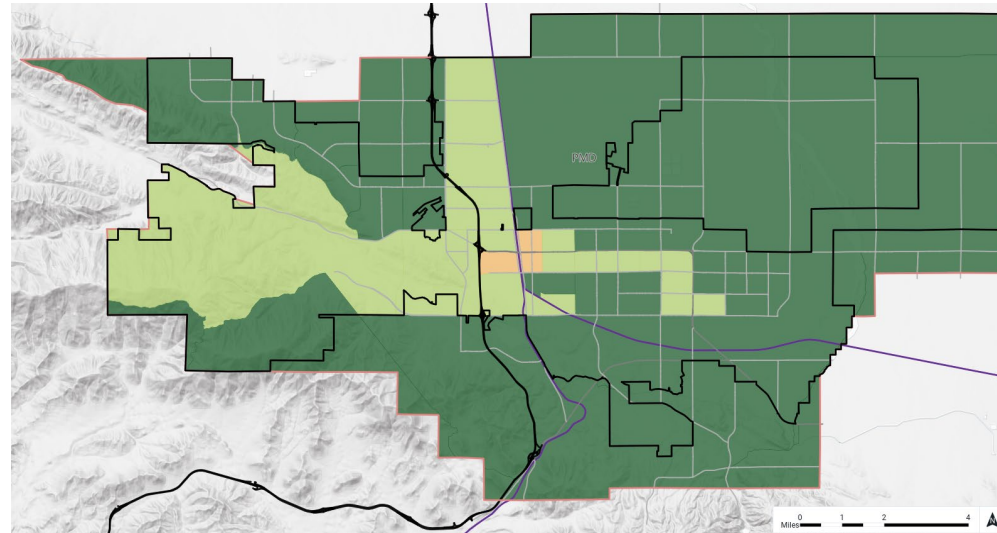
Drinking Water Contaminants



Clean Up Sites



Diesel Particulate Matter



Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets

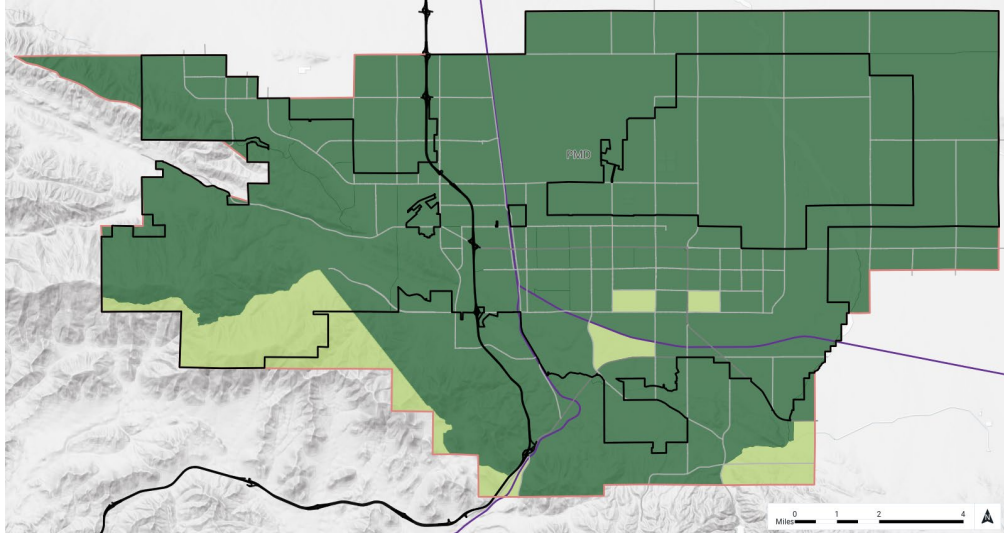
Pollution Factor Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100

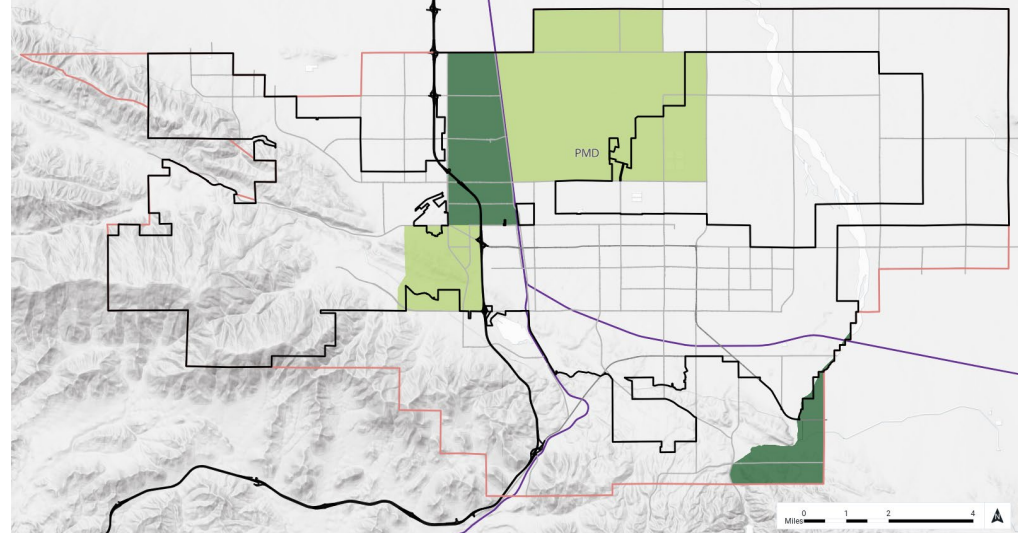
Source: CalEnviroScreen 4.0 (2021)
*Note: Empty color fill means no data is available.

Method 2: Non-Significant Pollution Factors

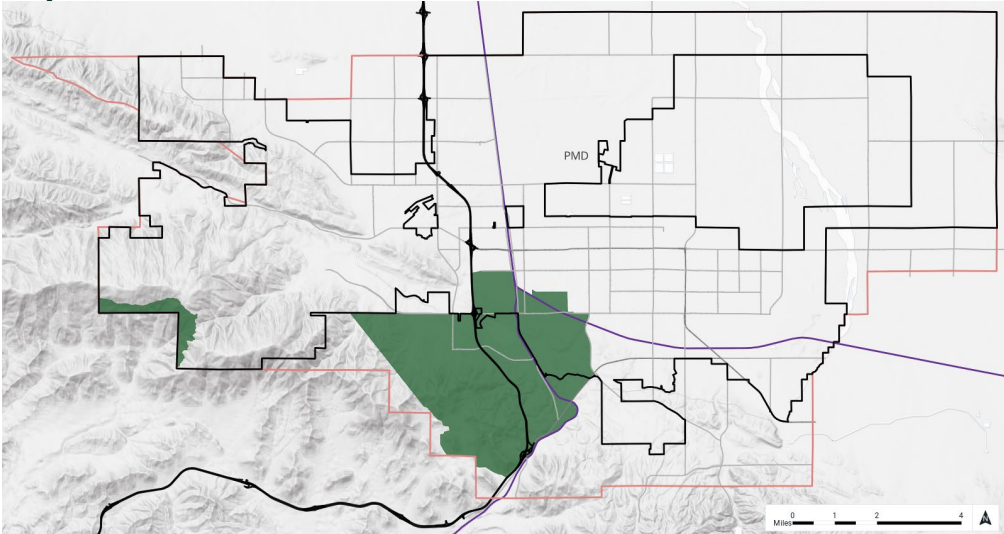
Particulate Matter 2.5



Groundwater Threats



Impaired Waterbodies



Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets

Pollution Factor Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100

Source: CalEnviroScreen 4.0 (2021)
*Note: Empty color fill means no data is available.

A dark teal overlay on a photograph of a residential street. In the background, a sign with the word 'PALM' is visible. The scene includes a paved road, a sidewalk, and some vegetation.

Other Indices

Healthy Places Index (Percentile)

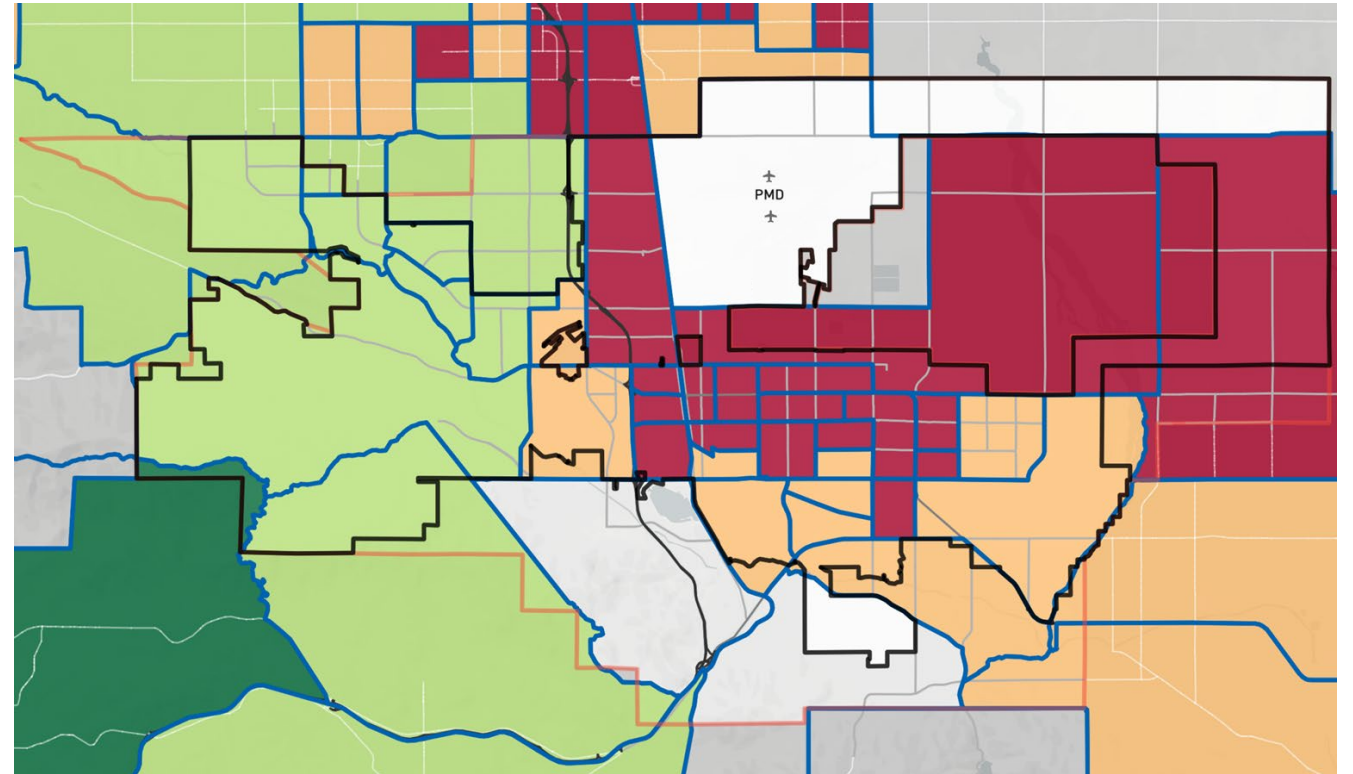
- The central and eastern parts of the City have relatively low Healthy Places Index scores.
- The lower the percentile, the worse the health outcomes (*Note: this is the opposite of most other indicators, because the data is from another source.*)

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Census Tracts

Healthy Place Index Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100



Source: Public Health Alliance of Southern California (2019).

*Note: Empty color fill means no data is available.

Social Vulnerability Index (Percentile)

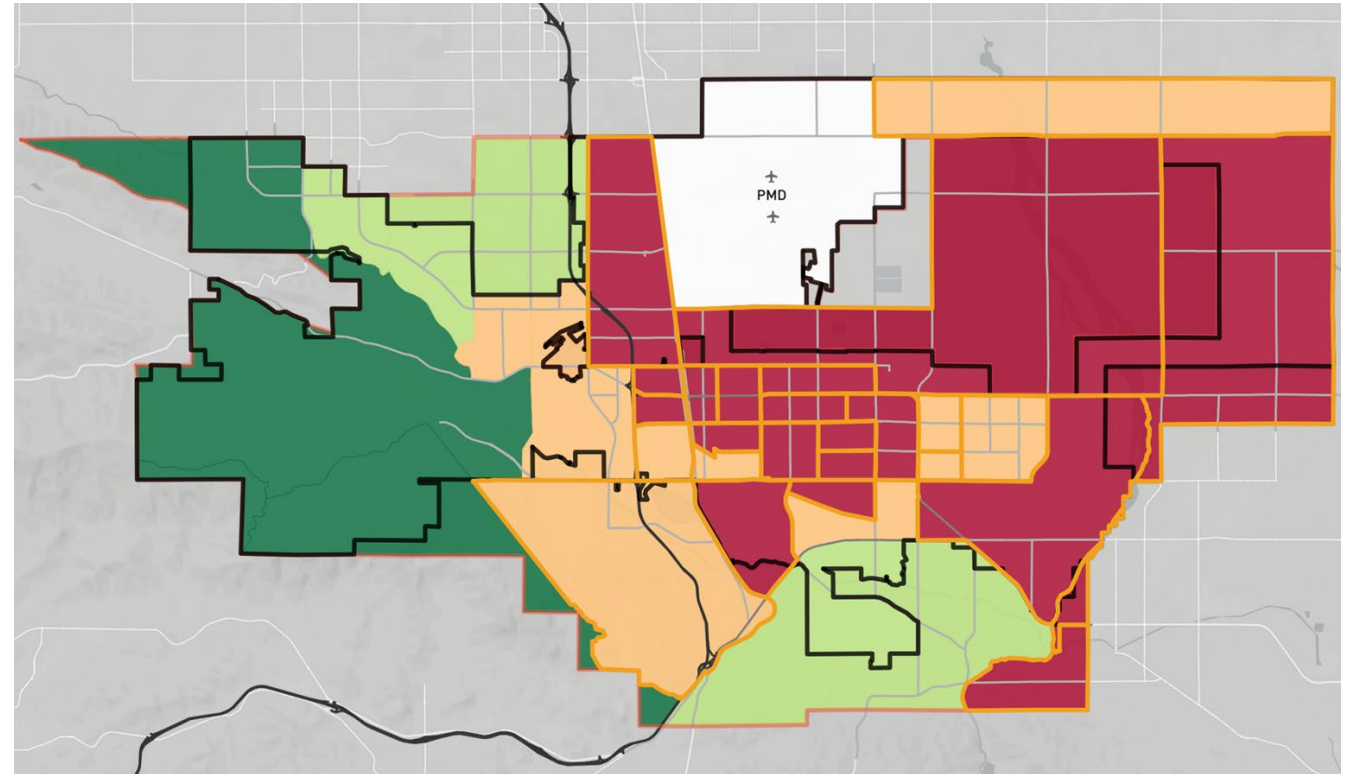
- **CDC Social Vulnerability Index (CDC SVI)** uses 15 U.S. census variables to help local officials identify communities that may need support before, during, or after disasters.

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Low Income Communities

Social Vulnerability Index Percentile

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100



Source: Social Vulnerability Index, CDC. (2018)

*Note: Empty color fill means no data is available.



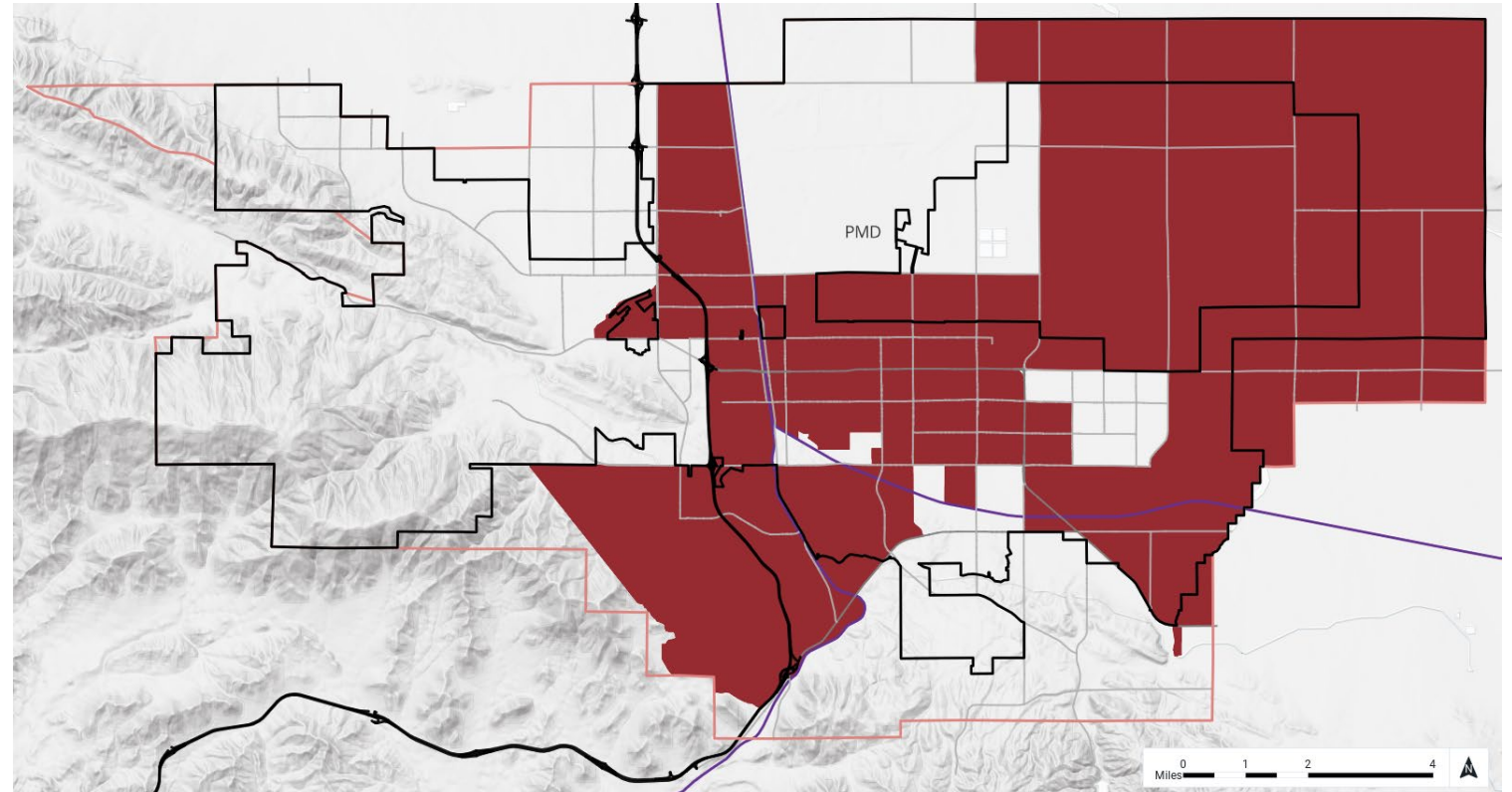
Conclusions

Method 1 + Method 2: Disadvantaged Communities

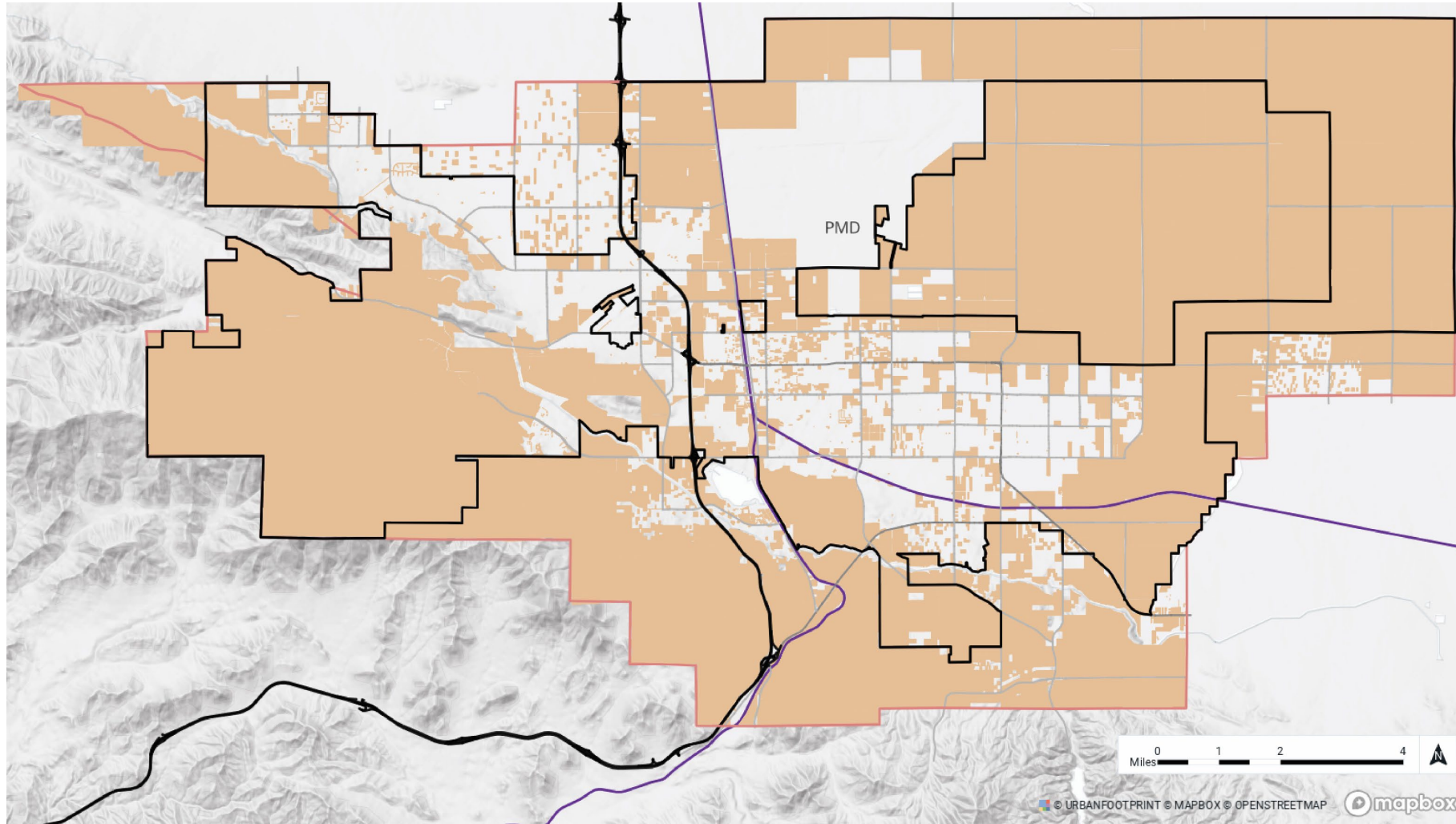
Identified Disadvantaged Communities (census tracts and block groups)

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Disadvantaged Communities



Vacant Areas



Legend

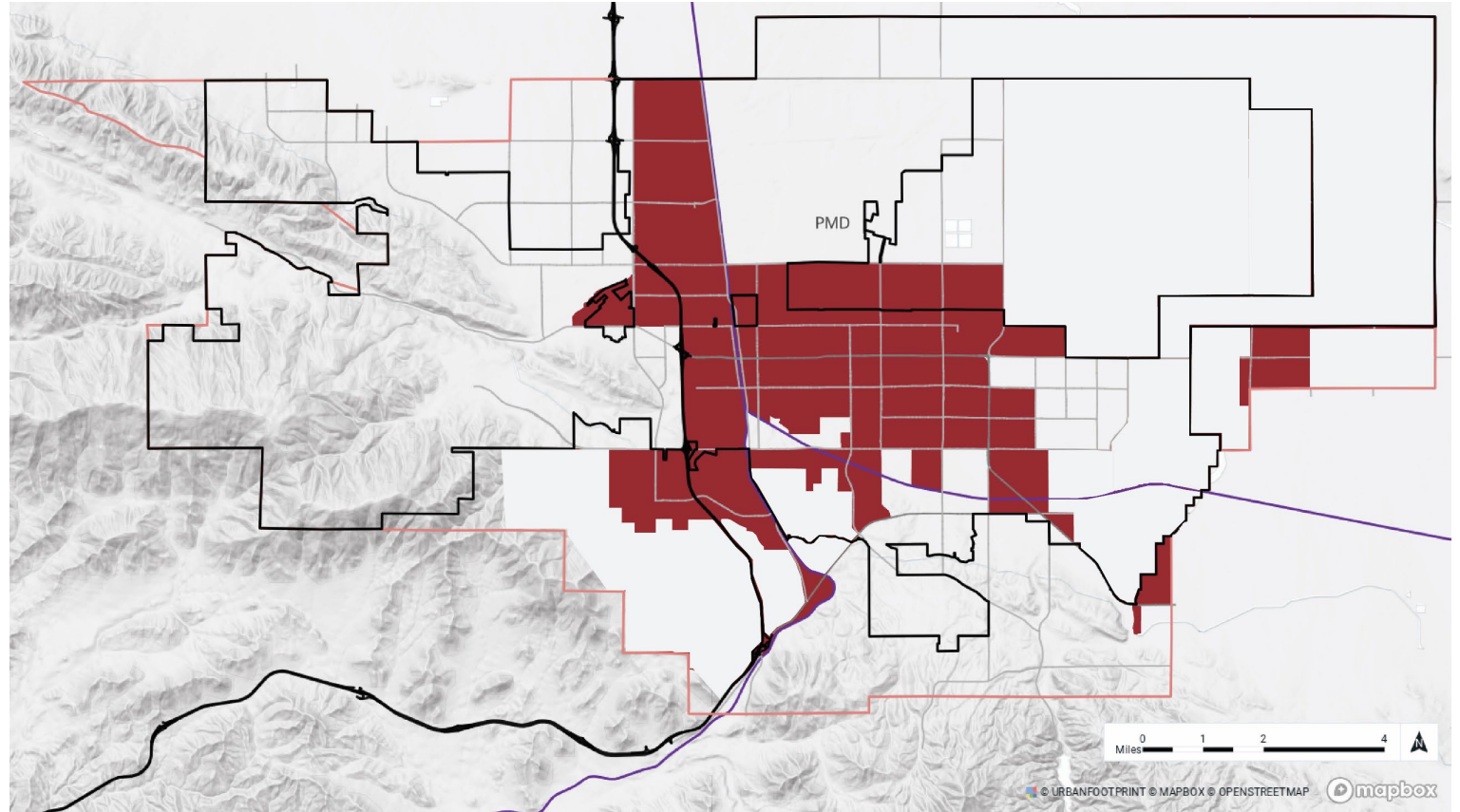
- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Vacant Areas

M1 + M2: Disadvantaged Communities Modified

Identified Disadvantaged Communities without vacant areas

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Disadvantaged Communities

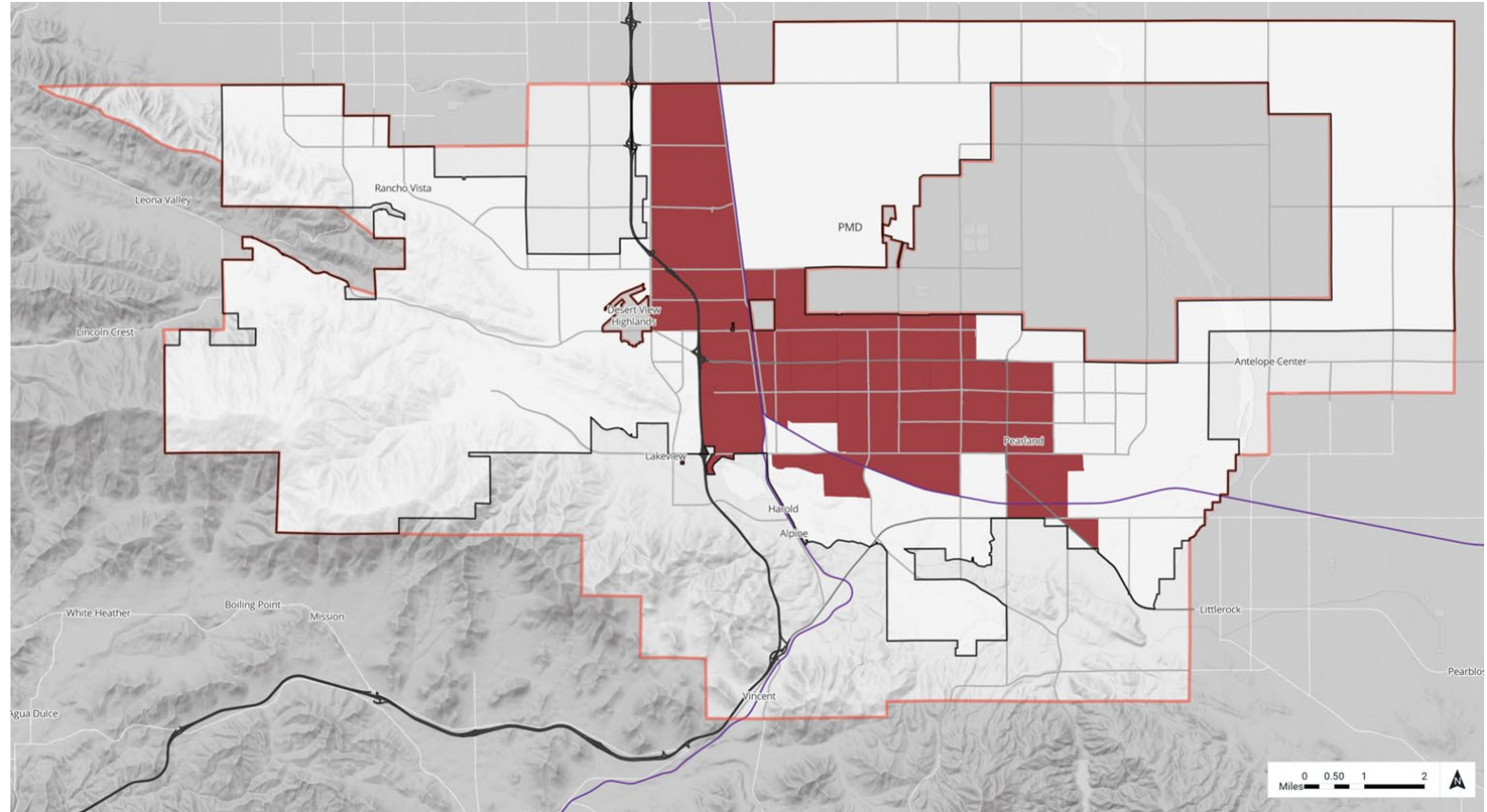


M1 + M2: Disadvantaged Communities Modified within City Limits

Identified Disadvantaged Communities without vacant areas and within the City's limits

Legend

- City Limits
- Sphere of Influence
- Railroads
- Freeways/Highways
- Major Streets
- Disadvantaged Communities



Conclusions

- While Palmdale is doing well for many environmental pollution factors, multiple indices indicate disproportionate health impacts on low-income areas.
- Most of the city has a high pollution burden for ozone and toxic air emissions from facilities.
- A few low-income areas also have a high pollution burden for traffic-related air pollution and children's lead risk from housing.
- Additional major health impacts from the built environment include: the cost and age of housing, walkability of neighborhoods, pedestrian and vehicle collisions, access to healthy food, and access to parks and recreational facilities.
- The General Plan addresses these health impacts through the goals, policies, and actions in the Equitable and Healthy Communities Element.