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FRESNO COUNTY HEALTH PRIORITY INDEX 2022

HPI-FRESNO

Report Developed by Fresno County Department of Public Health |
Division of Epidemiology, Surveillance, & Data Management

CONTENTS

This report was produced by the Fresno County Department of Public Health Epidemiology Program. If you have questions regarding HPI-Fresno, please go to FCDPH Epidemiology Webpage for Contact Information.

1 TECHNICAL SUMMARY

The Fresno County Department of Public Health, in collaboration with the Fresno Community Health Improvement Partnership (FCHIP) Land Use and Planning Workgroup, identified the need to provide a tool to assist in healthy land use and planning decisions for public infrastructure, facility, and service resource allocations focused on areas of most health burden.

The Health Priority Index (HPI-Fresno), compiles data from national, state, and local sources to visualize the level of health burden within each census tract in Fresno County.

2 INTRODUCTION

2.1 HEALTH PRIORITY INDEX (HPI-FRESNO) OVERVIEW

HPI-Fresno compiles data from federal, state, and local sources onto one map. The purpose of this map is to provide an easy-to-use tool that can assist in better understanding the local community.

2.2 HOW HAS THE MAP CHANGED?

The goals of HPI-Fresno have remained the same. With the 2022 updates some of the methodology and data sources have been modified due to the availability of more comprehensive data.

Comparison of 2015 (Legacy) to 2022 HPI-Fresno

	HPI-Fresno 2015	HPI-Fresno 2022
Environmental	Cal-EnviroScreen Pollution Burden Score (Fresno County (FC) Census Tracts(CT) compared to whole State)	Cal EnviroScreen 4.0 Pollution Burden updated with newer data (FC CTs compared only to FC CTs)
Mortality	Years of Potential Life Lost (YPLL) (FC CTs compared only to FC CTs)	Years of Potential Life Lost (YPLL), updated with newer data (FC CTs compared only to FC CTs)
Maternal	Pre-term Birth (FC CTs compared only to FC CTs)	Pre-term Birth (FC CTs compared only to FC CTs)
Morbidity and Mortality	Composite Morbidity & Mortality Score: combined aggregated score associated with Lung Disease, Myocardial infraction death, diabetes, colon cancer, obesity, YPLL, crude mortality	Individual chronic health conditions data: Asthma, Heart Disease, Diabetes, Cancer, YPLL
Overall Ranking	Overall Ranking: How many of above 4 measures (environmental, mortality, maternal, composite morbidity & mortality) did census tract rate in the worst 25% for Fresno County	Use of the California Health Places Index composite comprehensive score which takes into account 25 community health characteristics. CTs within Fresno County are compared only to other FC CTs & ranked from healthiest to least healthy

Other measures	Other map layers: Crime, poverty, green space	Other map layers: Hospitals, Federally Qualified Health Clinics/Rural Health Clinics, crime, poverty, Health Professional Shortage Areas, grocery store availability (drive and walk range), and farmers markets

2.3 USE SURVEY

It is requested that if you use HPI-Fresno or have any feedback that you complete a Health Priority Index Uses & Feedback Survey.

2.4 CITATION

If copying or distributing any information that you get from this website, cite HPI-Fresno.

 Suggested Citation:

The Fresno County Department of Public Health. Health Priority Index 2022 Map- Fresno (Online Map and Database). 2022. Accessed at <insert location> on <insert date>

3 METHODOLOGY

3.1 COMPOSITE HEALTH MEASURE

3.1.1 Healthy Places Index 3.0 Composite Score

The California Healthy Places Index (California-HPI) score is used for the HPI-Fresno overall Health Composite Measure. California-HPI by the Public Health Alliance of Southern California*, is a composite measure based on 23 constituent indicators. California-HPI was developed by the Public Health Alliance of Southern California with guidance from a Steering Committee of approximately 20 public health practitioners and researchers from health departments across California, including the California Department of Health and the Bay Area Regional Health Inequities Initiative. The goal of the California-HPI score is standardized estimate of health and well-being in each area of California.

The California-HPI 3.0 score is based on 8 domains with multiple indictors per domain. The higher the score, the healthier the community.

The California Healthy Places Index tool allows users to compare Census Tracts (CTs) in one area to CTs statewide or restricted to a specified geographic area. Percentiles shown on the Health Priority Index-Fresno are based on Fresno County CTs compared only to other Fresno County CTs. Quartiles are based on with-in county locations only; no non-Fresno County locations are considered in HPI-Fresno. This is done so that HPI-Fresno can provide a look within Fresno County, at what CTs are ranking better or worse on the composite community score.
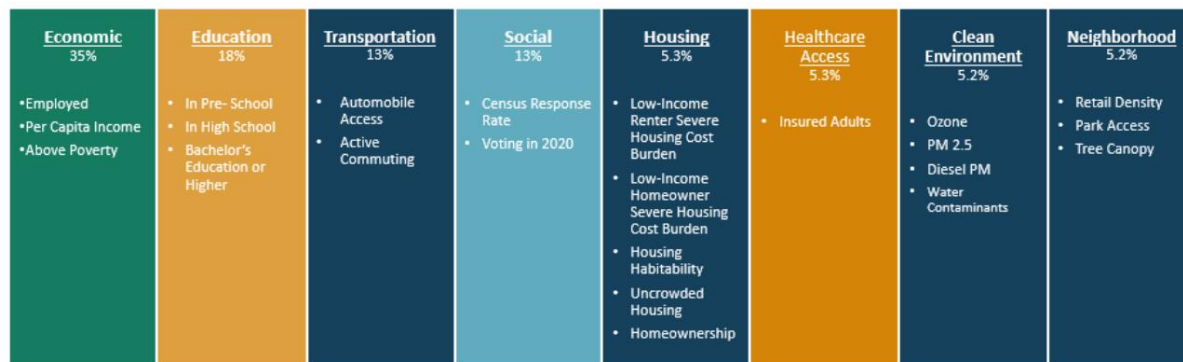
Figure source: Health Places Index (HPI 3.0) Documentation (2022). Figure 3. Retrieved at https://assets.website-files.com/613a633a3add5db901277f96/624a02bba72d6628b96ae461_HPI3TechnicalReport2022-03-31.pdf

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The HPI-Fresno tool provides a visualization of both the Healthy Places Index 3.0 (2022) composite measure as well as the Healthy Places Index 2.0 (2018) measure.

Eligibility: HPI-California CT eligibility criteria requires ≥ 1,500 population size (ACS 2015-2019) and <50% living in group quarters. Six Fresno County CTs did not meet the California HPI criteria: 1, 8, 55.25. 54.08, 79.01, 84.02.

To find out more information on the Healthy Places Index or to use their comprehensive tool, which in addition to the main composite score contains several other decision support layers, please go to https://www.healthyplacesindex.org/

3.1.2   California's Health Equity Metric

The State of California developed the health equity metric initially to compare COVID-19 infections and test positivity between the most and least advantages communities. Although initially used for COVID-19, it can be used for other equity purposes. To develop the health equity measure, each CT was divided into quartiles based on a ranking comparing all CTs in California. This is the key difference between this measure and the composite score measure in HPI-Fresno, as the latter only compares CT to other CTs within Fresno County. A rating of Quartile 1 means that the CT was determined to have the least amount opportunities for health as compared to other CT in California.

3.2 INDIVIDUAL HEALTH MEASURES

3.2.1 Asthma

HPI-Fresno shows the top 25% of census tracts with the highest prevalence of current asthma among adults ≥ 18 years (self-reported physician-diagnosed asthma). Data retrieved from CDC PLACES: Local Data for Better Health and represents results from the 2018 Behavioral Risk Factor Surveillance System survey (BRFSS).

3.2.2 Diabetes

HPI-Fresno shows the top 25% of census tracts with the highest prevalence of diagnosed diabetes among adults ≥ 18 years (self-reported). Data was retrieved from CDC PLACES: Local data for better health and represents results from the 2018 Behavioral Risk Factor Surveillance System survey (BRFSS).

3.2.3 Pre-term Birth

HPI-Fresno shows the top 25% of census tracts with the highest incidence of pre-term births. Births occurring at less than 37 weeks gestation are considered preterm. The gestational weeks can be found in Field 26A on the birth certificate. The preterm birth rate is calculated by taking the number of preterm births divided by the total number of live births within the same period in the specified geographical area, and multiplied by 100. The data source used for the raw data is the State of California, California Department of Public Health, Cal-IVRS, California Comprehensive Birth File, Accessed 7 September 2021. Calculations conducted by the Fresno County Department of Public Health.

3.2.4 Coronary Heart Disease

HPI-Fresno shows the top 25% of census tracts with the highest prevalence of diagnosed angina or coronary heart disease among adults ≥ 18 years (self-reported). Data was retrieved from CDC PLACES: Local data for better health and represents results from the 2018 Behavioral Risk Factor Surveillance System survey (BRFSS).

3.2.5 Cancer

HPI-Fresno shows the top 25% of census tracts with the highest prevalence of diagnosed cancer (excluding skin cancer) among adults ≥ 18 years (self-reported). Data was retrieved from CDC PLACES: Local data for better health and represents results from the 2018 Behavioral Risk Factor Surveillance System survey (BRFSS).

3.2.6 Years of Potential Life Lost

HPI-Fresno shows the top 25% of census tracts with the highest years of potential life lost (YPLL). YPLL involves the years lost to all persons who died prior to age 75. Therefore, persons who died younger than age 75 are considered to have died prematurely. For instance, a person who died at age 50 would be said to have lost 25 years of expected life while someone who died at age 80 would have lost no additional years of expected life. In this report, years of potential life lost is calculated for all who died before age 75. All years of potential life lost from each cause were added together to attain the total years lost for the census tract. The data source used for the raw data is the State of California, California Department of Public Health, Cal-IVRS, California Comprehensive Death File. Calculations conducted by the Fresno County Department of Public Health.

3.3 PHYSICAL, ENVIRONMENT, BUILT ENVIRONMENT, AND AREA RESOURCES

3.3.1 Composite Pollution Burden

HPI-Fresno highlights the top 25% of census tracts in Fresno County that are ranking the highest for level of pollution burden based on the Cal-EnviroScreen 4.0 Pollution Burden Score. The score is developed based on:

Exposure Indicators

- **Ozone:** Mean of summer months (May-October) daily maximum 8 hour ozone concentration (ppm), averaged over 3 years (2016-2018) from the Air Monitoring Network, CARB
- **Fine Particles (PM 2.5):** Annual mean Particulate Matter (PM) 2.5 concentrations (weighted average of measured monitor concentrations and satellite observations, μg/m^3, over 3 years (2015-2017) from CARB
- **Diesel PM:** Gridded diesel PM emissions from on-road and non-road sources (tons/year; 2016) from EMFAC, CEIDARS, CARB
- **Drinking water:** Drinking water contaminant index for selected contaminants (2011-2019) from multiple sources
- **Potential risk for lead exposure in children living in low-income community:** Percentage of households within a census tract with likelihood of lead-based paint hazards from the age of the housing (5-year estimate 2014-2018) combined with percentage of low-income households (<80% county median family income) and have children <6 years old (5-year estimates 2012-2016) from California Residential Parcel Data, American Community Survey, and HUD-CHAS
- **Pesticides:** Total pounds of 83 selected active pesticide ingredients (filtered for hazard and volatility) used in production-agriculture per square mile in the census tract, averaged over 3 years (2016-2018)
- **Toxic Release:** Toxicity-weighted concentrations of modeled chemical releases to air from facility emissions and off-site incineration (averaged over 2014-2016) from US EPA
- **Traffic:** Sum of traffic volumes adjusted by segment length (vehicle-kilometers per hour) divided by total road length (kilometers) within 150 meters of census tract (estimates for 2017)

Environmental Effects Indicators (half weighting)

- **Cleanup Sites:** Sum of weighted sites within census tract (data downloaded 2020) from Envirostor, DTSC
- **Groundwater Threats:** Sum of weighted scores for sites within census tract (data downloaded 2020) from GeoTracker SWRCB, CIWQS
- **Hazardous Waste:** Sum of weighted permitted hazardous waste facilities (data downloaded 2020), hazardous waste generators (2017-2019), and chrome plating facilities within census tracts (2018) from DTSC, CARB
- **Impaired Water Bodies:** Sum of number of pollutants across all impaired water bodies designated within census tract (2014/2016) from SWRCB
- **Solid Waste:** Sum of weighted solid waste sites and facilities (2020) from SWIS

For more information on this source, please go to:
https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

3.3.2 Primary Care Health Professionals Shortage Areas (HPSA)

HPSA are published by Health Resources and Services Administration (HRSA), Bureau of Health Workforce (BHW), Division of Policy and Shortage Designation (DPSD) and governed by the National Health Service Corps (NHSC) statute and regulations. HPSA can be used to identify areas that are experiencing shortages of health professionals. This helps to identify areas most in need of the distribution of limited resources to assist with increasing supply, capacity, and distribution of health professions.

For more information on scoring: https://www.federalregister.gov/documents/2003/05/30/03-13478/criteria-for-determining-priorities-among-health-professional-shortage-areas and https://bhw.hrsa.gov/workforce-shortage-areas/shortage-designation/scoring

3.3.3 Hospitals

Location of local hospitals within Fresno County. Information was retrieved from ESRI community and derived from various sources for the Homeland Infrastructure Foundation-Level Data (HIFLD) database https://gii.dhs.gov/HIFLD. *Source:* Oak Ridge National Laboratory (ORNL); National Geospatial-Intelligence Agency (NGA) Homeland Security Infrastructure Program (HSIP) Team.

3.3.4 Federal Qualified Health Centers (FQHC) and Rural Health Clinics (RHC)

Location of Fresno County FQHC and RHC. List of facilities developed by the Fresno County Department of Health and community partners.

3.3.5 National Farmers Market Directory

This list includes two or more farm vendors with agricultural products for sale directly to customers at recurrent locations. Maintained by the Agricultural Marketing Services, US Department of Agriculture.

For more information: https://www.ams.usda.gov/local-food-directories/farmersmarkets

3.3.6 Grocery Stores

This feature is by census block instead of census tract. There are two different grocery store measures:

1. Number of stores that are within a 10-minute drive.

Driveable Stores 10 minutes
- 30+
- 12 – 29
- 2 – 11
- 0 – 1

2. Are there stores within an estimated 10-minute walk?

▾ ☑ Grocery (10-minute Walk time) Census Block

  N   *N= No Store within 10-minute walk*
  Y   *Y= Yes Store(s) within 10-minute walk*

Data came from *ESRI data enrichment tools & Business analyst tools.*

3.4 OTHER INDICTORS

3.4.1 Poverty

HPI-Fresno shows the top 25% of census tracts for poverty in Fresno County. Data came from *ESRI data enrichment tools & Business analyst tools.*

3.4.2 Crime

HPI-Fresno shows the top 25% of census tracts for crime in Fresno County. Crime Index data came from *ESRI data enrichment tools & Business analyst tools.*

4 MAP FEATURES AND HOW TO USE GUIDE

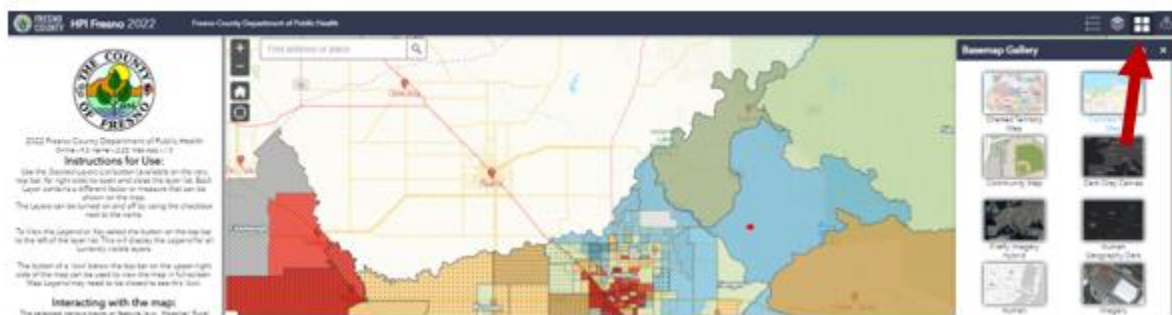### 4.1 TURNING ON AND OFF LAYERS/FEATURES

Use the Stacked Layers List button (available on the very top bar, far right side) to open and close the layer list. Each Layer contains a different factor or measure that can be shown on the map.

The Layers can be turned on and off by using the checkbox next to the name.

4.2 CHANGE BASEMAP (BOTTOM LAYER)

Use the 4 Square button (available on the very top bar, far-right side) to select and change the basemap.
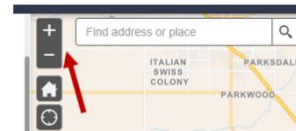
4.3 LEGEND OR KEY OF MEASURES

To View the *Legend* or *Key,* select the button on the top bar to the left of the layer list. This will display the *Legend* for all currently visible layers/features (all layers/features turned on).

4.4 ZOOMING IN AND OUT

The '+ | - ' toggle switch (or a mouse scroll wheel) can zoom in or out of the map.

4.5 SEARCHING

There are two primary methods to search for an area.

1) ***Search Feature***
   Use the Search bar to find a location and zoom to the area. The 'Home' button brings the map back to the original zoom scale.
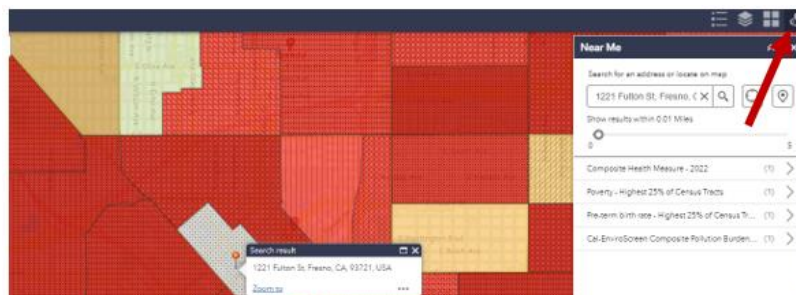   The cross-hair button will use your device's current location (if available) to locate your current position on the map.

2) ***Near Me Feature***
   Use the button in the far-right side of the map to search for an address on the map and show features within a selected mileages from the address.
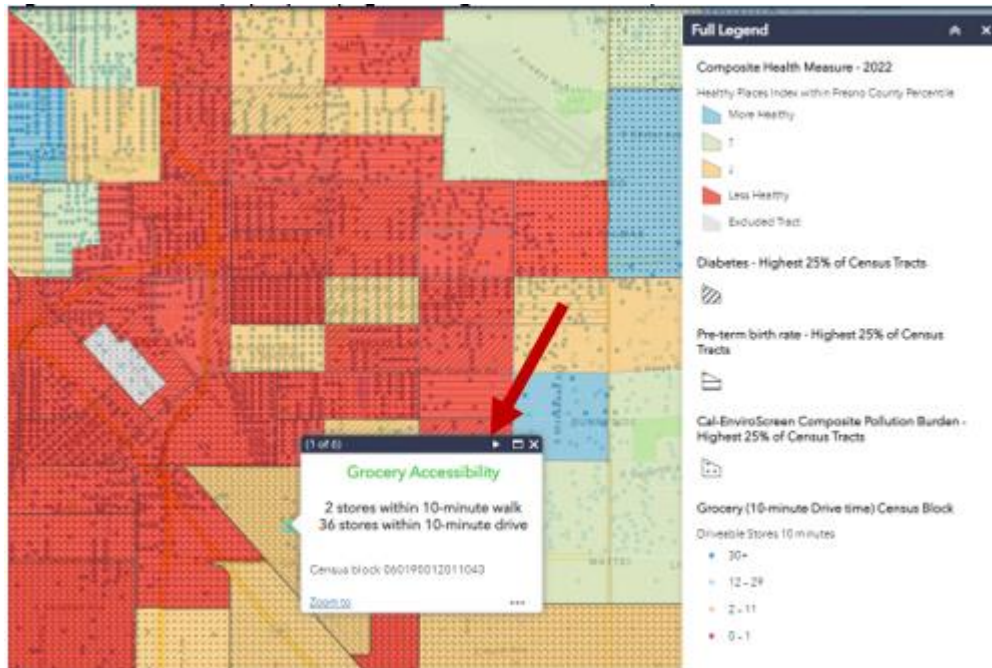
4.6 FULL SCREEN OR INCREASE MAP SIZE

The *box* button below the top bar on the upper-right side of the map can be used to view the map in full-screen. The map *Legend* may need to be closed to see this *box*.

Another method to increase the size of the map is to minimize the *Instructions menu* by clicking the arrow at the right center of the *Instruction menu*. The box may be re-opened at any time to review these instructions by selecting the arrow at the center left of the screen.

4.7 DETAILED INFORMATION ABOUT A CENSUS TRACT OR FEATURE

Census tracts or feature (e.g., Hospital, Rural Health Clinic, etc.) may be clicked to open a 'pop-up' box with additional information. There may be more than one item listed - so use the arrows in the top right corner of the 'pop-up' to scroll through the stacked layers. Only information from layers/features that are turned on will be visible.

5 ACKNOWLEDGEMENTS

The Fresno County Department of Public Health wants to acknowledge the dedication of the GIS team of the Fresno County Internal Service Department for the time they spent to help develop the HPI-Fresno map tool. Additional thanks go to all the creators of the source data that was used in the creation of this map and to those who have provided feedback.