DRAFT BACKGROUND REPORT ENVIRONMENTAL JUSTICE

San Rafael General Plan 2040

Abstract

This report summarizes the Environmental Justice context in San Rafael, California. It will be used as the basis for new long-range planning policies and to provide context for San Rafael General Plan 2040.

Contents

Summary of Findings	3
Introduction	3
Background	4
Background Report Methodology	5
Summary of DAC data in San Rafael	6
Exposure Indicators	7
Air Quality: Ozone concentrations	8
Air Quality: PM2 Concentrations	8
Air Quality: Diesel Particulate Concentrations	10
Drinking Water Contaminant Concentrations	10
Pesticide Use	11
Toxics Release from Facilities	12
Cleanup Sites	13
Groundwater Threats	14
Hazardous Waste Generators and Facilities	14
Impaired Water Bodies	15
Solid Waste Sites and Facilities	16
Sensitive Population Indicators	17
Asthma	17
Cardiovascular Disease	17
Low Birth Weight Infants	18
Life Expectancy	19
Socioeconomic Indicators	19
Educational Attainment	20
Housing Burden	21
Linguistic Isolation	22
Poverty	22
Unemployment	23
Healthy Community Indicators	24
Walk Score	25
Healthy Food Access	26

Park Access	2/
Lead Paint	28
Discussion	28
Recommendations from Canal Residents: Police Services and Collaboration	29
Recommendations from Canal Residents: Neighborhood Infrastructure . Error! Bookmark n	
_	
Recommendations from Canal Residents: Neighborhood Infrastructure	30
Recommendations from Canal Residents: Education and After School Programs	30
Recommendations from Canal Residents: Family Self-Sufficiency and Empowerment, Comm	•
List of Figures	
Figure 1: CalEnviroScreen Ozone Map Screenshot	
Figure 2: CalEnviroScreen PM2.5 Map Screenshot	
Figure 3: Screenshot of BAAQMD Impacted Communities Map	
Figure 4: CalEnviroScreen Diesel Particulate Map Screenshot	
Figure 5: CalEnviroScreen Drinking Water Contaminant Map Screenshot	
Figure 6: CalEnviroScreen Pesticide Exposure Map Screenshot	
Figure 7: CalEnviroScreen Toxics Release Map Screenshot	
Figure 8: CalEnviroScreen Environmental Cleanup Sites Map Screenshots	
Figure 9: CalEnviroScreen Groundwater Threats Map Screenshot	
Figure 10: CalEnviroScreen Hazardous Waste Map Screenshot	
Figure 11: CalEnviroScreen Impaired Waterbodies Map Screenshot	
Figure 12: CalEnviroScreen Solid Waste Facilities Map Screenshot	
Figure 13: CalEnviroScreen Asthma Rates Map Screenshot	
Figure 14: CalEnviroScreen Cardiovascular Disease Rates Map Screenshot	
Figure 15: CalEnviroScreen Low Birth Weight Rates Map Screenshot	
Figure 16: National Center for Health Statistics Life Expectancy Map Screenshot	
Figure 17: CalEnviroScreen Low Educational Attainment Map Screenshot	
Figure 18: CalEnviroScreen Housing Burden Rates Map Screenshot	
Figure 19: CalEnviroScreen Linguistic Isolation Rates Map Screenshot	
Figure 20: CalEnviroScreen Poverty Rates Map Screenshot	
Figure 21: CalEnviroScreen Unemployment Rates Map Screenshot	
Figure 22: Walk Score Result Map for San Rafael	
Figure 23: USDA Grocery Store Access Map Screenshot	
Figure 24: ParkServe Result Map for San Rafael	
Figure 25: EPA EJ Screen Lead Paint Indicator Map Screenshot	28

Summary of Findings

As a whole, San Rafael residents are healthy, with comparatively low rates of environmentally-related health conditions such as asthma and cardiovascular disease.

Compared to the rest of California, San Rafael scores very well in terms of air and drinking water quality. Areas of the City near freeways score slightly higher than the rest of San Rafael in terms of air pollution concentrations, but these areas still score near or better than the statewide median.

San Rafael has low rates of exposure to pesticides, and very few sites where hazardous chemicals have been released. San Rafael does have some areas where environmental cleanup sites, groundwater threats, waste collection sites, and hazardous waste generating facilities are concentrated, namely in the City's south and southeast industrial areas, and to a lesser extent the Smith Ranch Road area in northeast San Rafael. The 2040 General Plan EIR will detail the nature and status of these locations more precisely

In general, San Rafael's built environment is conducive to healthy physical activity, although the City's lower-density residential areas score lower than the rest of the City in terms of the ability of residents to walk to important destinations.

One area of San Rafael stands out as having a disproportionate concentration of households facing significant socioeconomic disadvantage, not just to the rest of the City, but also to the rest of Marin County, the Bay Area, and California. This area, known as the Canal neighborhood, is also adjacent to the City's southeast industrial areas and has San Rafael's highest residential densities. Much of the Discussion Section of this report provides more context for this area, including a discussion of an existing research report done by a coalition of Canal Neighborhood residents and community advocates.

Introduction

In 2016, the State of California passed Senate Bill 1000 mandating that an Environmental Justice Element be included in all General Plans across the State. This requirement reflects consensus among researchers and policymakers that marginalized groups such as people with low incomes, communities of color, and indigenous people are disproportionately exposed to environmental hazards and resulting health impacts. These inequities are the result of a variety of structural factors both explicit and implicit throughout history, like discriminatory or negligent zoning and land use planning, and discriminatory lending practices from public and private entities. The concept of environmental justice recognizes that present-day policies may unintentionally have negative impacts on communities who are still affected by previous generations of discrimination, exclusion, and inequality. The emerging San Rafael 2040 General Plan acknowledges these dynamics and must establish policies to address them in accordance with SB 1000. In addition to establishing a dedicated standalone element addressing environmental justice in San Rafael, environmental justice and equity considerations are raised in other elements of the General Plan, including Culture and Arts, Housing, Transportation, and Environmental Hazards.

Background

Environmental Justice originally was and fundamentally still is a grassroots movement led by communities affected by environmental hazards like hazardous waste dumps and chemical manufacturing facilities. The term 'Environmental Justice' can be defined broadly as "the basic right of people to live, work, go to school play, and pray in a healthy and clean environment." The U.S. Environmental Protection Agency (EPA) now recognizes Environmental Justice as an important principle guiding environmental policymaking. The EPA defines Environmental Justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies."²

The California Environmental Protection Agency (CalEPA) defines Environmental Justice as "the fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."³

Ancillary to these formal definitions are definitions of distributive justice, social justice, and procedural justice. Distributive justice refers to the inequitable distribution of public harms and benefits across geographies and/or other groupings. Social justice is more specific, referring to the way historical injustices have had lasting intergenerational impacts that continue to be distributed along race and class lines, along with other intersecting marginalized identities. A major example of social injustice is how indigenous people, immigrants, and people of color were openly discriminated against in home loan markets prior to the passage of the Civil Rights Act. As a result, families belonging to these groups in the U.S. have had far less access to property and home ownership, the primary driver of inter-generational wealth transfer and social mobility.⁴ Procedural justice refers to decision-making processes themselves as opposed to their outcomes. It ensures that all people who are potentially affected by a decision or policy "can participate as equal partners in every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation."⁵

Environmental Justice (EJ) issues encompass all three of these concepts. SB 1000 targets environmental justice inequities that relate specifically to land use and planning decisions, by requiring every California community to proactively address environmental justice concerns in their General Plans, either by integrating the topic throughout the Plan's other elements, or by including a new element concerning EJ issues. Addressing EJ in the general plan first requires identifying "EJ communities" or "Disadvantaged Communities" (DACs). The term "disadvantaged communities" has a specific legal definition in the State

¹ Robert D. Bullard, *Dumping in Dixie: Race, Class, and Environmental Quality* (Routledge, 2018).

² OA US EPA, "Learn About Environmental Justice," Overviews and Factsheets, US EPA, February 13, 2015, https://www.epa.gov/environmentaljustice/learn-about-environmental-justice.

³ "Environmental Justice Program | CalEPA," accessed February 18, 2020, https://calepa.ca.gov/envjustice/.

⁴ Richard Rothstein, *The Color of Law: A Forgotten History of How Our Government Segregated America* (Liveright Publishing, 2017).

⁵ "The Principles of Environmental Justice (EJ)," NRDC, accessed February 18, 2020, https://www.nrdc.org/resources/principles-environmental-justice-ej.

of California, originally for the purposes of identifying communities as target recipients for funds from the state's Cap and Trade program (SB 535). DACs are areas or neighborhoods that are most burdened by pollution (e.g. from contaminated air, water, soil or hazardous building conditions), and that have populations most vulnerable to the effects, e.g. low-income populations, those without healthcare, those facing language barriers, children, and elderly adults. Communities identified as DACs are eligible for funding for certain grants, like those for active transportation improvements.⁶

According to SB 1000, the purpose of EJ policies in a general plan is to reduce the unique or compounded health risks faced by disadvantaged communities by identifying neighborhoods that face the highest cumulative burdens and prioritizing investment in public health and protection from environmental harms in these areas. As documented by the SB 1000 Toolkit prepared by the State of California, the process of identifying disadvantaged communities must consider (at minimum) the following topics:

- Pollution Exposure and Air Quality, which includes policies to prevent and mitigate sources of toxic air pollution, and to protect sensitive populations in DACs who are at risk of exposure.
- Public Facilities, which includes policies to increase and improve public infrastructure and services like utility infrastructure, transportation infrastructure, and healthcare services
- Food Access, which includes policies to promote access to healthy food in EJ communities
- Safe and Sanitary Homes, which includes policies that ensure safe and healthy living conditions, in addition to encouraging access to affordable housing
- Physical Activity, which includes policies to improve access to physical activity in EJ communities, like open space trails, bike paths, and community center programming.
- Civil or Community Engagement, which includes policies and best practices for promoting equitable, inclusive, and meaningful community engagement in local planning processes that benefit EJ communities.

Background Report Methodology

This report identifies EJ communities within San Rafael by mapping a range of indicators, most of which were developed by the California Office of Environmental Health Hazard Assessment. This program, known as CalEnviroScreen, assigns a cumulative pollution impact score to every census tract in California and then ranks every census tract according to that score to produce a "percentile" score from zero to 100, which compares the overall score of a census tract to every other tract in California. For example, a tract in the '99th percentile' for air pollution burden means that the air pollution burden for residents in that tract is higher than 99% of all other California census tracts.

The CalEnviroScreen cumulative impact score is computed using a combination of indicators grouped according to the following categories (quoted with minor revisions from the CalEnviroScreen website):

⁶ According to the California Environmental Protection Agency (CalEPA), there are no formally designated SB535 <u>Disadvantaged Communities</u> in Marin County. However, the California Department of Water Resources has developed a mapping tool providing a <u>secondary source of data</u> on Disadvantaged Communities. The DWR maps identify the Core Canal Census tract (1122.02) as "Severely Disadvantaged" based on median household income. Three US Census block groups, corresponding to the Woodland Avenue area, eastern Downtown San Rafael, and Contempo Mobile Home Park, are also identified as "Disadvantaged" based on income.

- **Exposure indicators** are based on measurements of different types of pollution to which people may be exposed. This includes levels of drinking water contaminants and air pollution.
- **Environmental effects indicators** are based on the locations of toxic chemicals in or near communities. This category includes toxic waste sites and impaired water bodies.
- Sensitive population indicators measure the number of people in a community who may be more severely affected by pollution because of their age or health. This category includes asthma rates and the rates of babies born with low birth weights.
- Socioeconomic factor indicators are conditions that may increase people's stress or make healthy living difficult and cause them to be more sensitive to pollution's effects. This category includes poverty rates, educational attainment, and employment rates.

Evaluating these indicators meets SB 1000's criteria for assessing pollution exposure and air quality. To evaluate access to public infrastructure and healthy physical activity, this background report analyzes the following indicators:

- Overall walkability (a cumulative score of walking distance to various amenities),
- Access to grocery stores, and
- Access to parks

Older homes with a higher potential of having lead paint are also mapped, an indicator of how safe and healthy San Rafael homes are to live in.

The last required component outlined by SB 1000, Civil or Community Engagement, was addressed in San Rafael's 2020 General Plan through a standalone Governance Element. Similar policies will be included in the 2040 General Plan.

The next section provides a high-level summary of the spatial data analyzed from CalEnviroscreen and other sources. In addition to the spatial analysis conducted below, policies of the San Rafael General Plan will be informed by existing research, including a collaborative, community-driven report by residents of San Rafael's most impacted neighborhood, called Voces Del Canal (2014). The 'Discussion' section of this report summarizes key findings from Voces, in tandem with the findings from the spatial analysis detailed in the subsections below.

Summary of DAC data in San Rafael

As a whole, San Rafael residents are healthy, with low rates of asthma, low rates of cardiovascular disease, and very few infants born with low birth weights compared to the rest of California. Every census tract in San Rafael scores at the median or better compared to the rest of California in terms of these three indicators, which are all highly associated with environmental and socioeconomic factors like pollution exposure and poverty.

Compared to the rest of California, San Rafael also has very high-quality drinking water. However, the City's local watersheds: Miller Creek, Gallinas Creek, and San Rafael Creek, are considered contaminated according to CalEnviroscreen, scoring higher than the median of all California watersheds in terms of water pollution concentrations. This is not unexpected in an urbanized environment and is similar to what is encountered throughout the developed cities of the Bay Area.

In terms of air quality, San Rafael's air is relatively free of ozone, a major air pollutant that concentrates mostly in California's Central Valley due to the State's topography and weather patterns. Areas of San Rafael near highways as well as industrial-commercial areas with high volumes of truck traffic score higher than the rest of San Rafael in terms of air pollution concentrations. These areas score roughly at the median in terms of car and truck-related air pollutants compared to the rest of California.

San Rafael has very low rates of pesticide exposure, and very few sites where toxic chemicals have been released. San Rafael does have some areas where environmental clean-up sites, groundwater threats, waste collection sites, and hazardous waste generating facilities are concentrated, namely in the City's south and southeast industrial areas, and to a lesser extent the Smith Ranch Road/McInnis Park area in northeast San Rafael. While this background report maps the location of these hazardous materials and discusses them in terms of their potential impact on nearby residents, the General Plan EIR will detail the nature and status of these locations more precisely. Both this background report and the Hazardous Materials chapter of the EIR use the same data sources to identify the location of hazardous materials in San Rafael.

San Rafael's built environment is relatively conducive to healthy physical activity: Roughly two-thirds of San Rafael has a complete sidewalk network that facilitates access to destinations like parks, transit stops, grocery stores and schools. The City's more spread-out and primarily residential areas, like San Pedro Peninsula, Santa Venetia, and the northwestern area of the city between Terra Linda and Lucas Valley, score relatively low in terms of the ability of residents to walk to common destinations from their home.

In terms of healthy homes and living conditions, roughly half of San Rafael neighborhoods have high concentrations of homes that were built before 1960, an indicator sometimes associated with lead paint exposure risk. These neighborhoods include the Sun Valley, Gerstle Park, Montecito, and Black Canyon neighborhoods. It should be noted that this data source, from the U.S. Environmental Protection Agency, omits some areas of San Rafael due to unavailable or inadequate data. Omitted areas include the Canal neighborhood, the Peacock Gap neighborhood, and the Smith Ranch neighborhood.

One area of San Rafael stands out as having a disproportionate concentration of households facing significant socioeconomic disadvantage, like low educational attainment levels, high rent-burden, low incomes, high linguistic isolation, and low employment compared not just to the rest of the City, but also to the rest of California. This area, known as the Canal neighborhood, is also adjacent to the City's southeast industrial areas, and has San Rafael's highest residential densities. Finally, as shown in Section 4.10 the General Plan EIR, much of the Canal Neighborhood is at high risk of flooding under likely sealevel rise scenarios between now and 2040, especially during concurrent storms and king-tide events.

The following subsections analyze spatial data, mostly from CalEnviroscreen with some other sources, to identify areas of San Rafael which may exhibit characteristics of a DAC. For each figure in the following subsections, San Rafael is shown inside a red rectangle unless where noted.

Exposure Indicators

Cal EnviroScreen uses seven different indicators to measure the amounts and concentrations of various types of pollution to which communities may be exposed. Each of the seven exposure indicators was

mapped by census tract using the CalEnviroScreen online mapping tool. The subsections below summarize findings from each.

Air Quality: Ozone concentrations

The following image depicts ozone concentrations in most Northern California census tracts. Ozone is the primary ingredient in smog. CalEnviroScreen identifies the primary sources of ozone pollution as trucks, cars, planes, trains, factories, farms, construction, and dry cleaners. While the image shows a very large area (extending from the Pacific Ocean to Nevada), the figure illustrates that coastal areas have lower levels of exposure than inland and mountain areas. California's topography tends to trap air pollutants in the Central Valley basin and east of the Sierra Nevada Mountain range while air currents from the Pacific Ocean keep coastal areas like San Rafael (inside the small red rectangle) relatively free of ozone pollution.

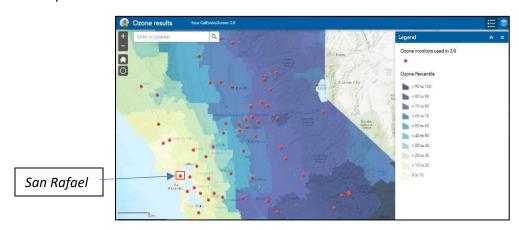


Figure 1: CalEnviroScreen Ozone Map Screenshot

Air Quality: PM2⁷ Concentrations

CalEnviroScreen describes Particulate matter, or PM2.5, as very small particles in air that are 2.5 micrometers (about 1 ten-thousandth of an inch) or less in diameter. The primary sources of PM2.5 are cars and trucks, factories, and burning wood (including wildfires). The following map shows PM2.5 levels by census tract in the Bay Area, from the California Air Resources Board (CARB):

8

⁷ PM2 is 2.5 parts per million



Figure 2: CalEnviroScreen PM2.5 Map Screenshot

Mapping PM2.5 concentrations recorded by CARB sensors shows that this air pollutant follows roughly the same geographic pattern as ozone concentrations, concentrating in the Central Valley Basin and leaving coastal areas like San Rafael relatively unaffected.

However, data from the Bay Area Air Quality Management District (BAAQMD) shows that much of San Rafael is in a '24-hour exceedance zone' for PM2.5. BAAQMD defines these zones as areas where '24-hour fine particulate matter (PM2.5) levels exceeded the federal standard (35mg/parts per million or m3) during three recent winters (2010-2012).87 The following map depicts BAAQMD's 24-hour PM2.5 Exceedance data for San Rafael:



The BAAQMD data shows that approximately half of San Rafael is in a 24-hour PM2.5 exceedance area, including Downtown, all of the City's southern neighborhoods, most of San Pedro peninsula, Los Ranchitos, and significant portions of Santa Venetia. ⁹

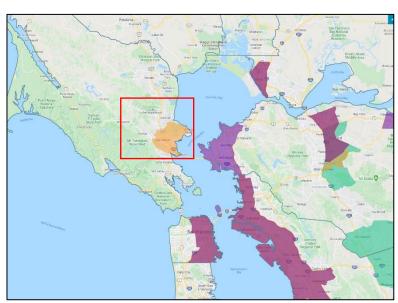


Figure 3: Screenshot of BAAQMD Impacted Communities Map

⁸ See: Bay Area Air Quality Management District Interactive Data Maps. https://www.baaqmd.gov/about-air-quality/interactive-data-maps

⁹ The areas in purple on Figure 3 are the most severely impacted by ozone, as well as other air pollutants.

However, none of San Rafael is what BAAQMD defines as a "Cumulative Impact Area," which is an area with "high concentrations of air pollution and populations most vulnerable to air pollution's health impacts" according to BAAQMD's Community Air Risk Evaluation (CARE) program. By comparison, much of San Francisco, Contra Costa, and Alameda Counties exhibit these characteristics.

Air Quality: Diesel Particulate Concentrations

Diesel particulate is a mixture of chemicals and particulate matter emitted from machinery that uses diesel engines, including trucks, buses, trains, ships, and other equipment. The highest levels of diesel PM are near ports, rail yards and freeways. The following image depicts diesel particulate concentrations by California census tract (percentile):

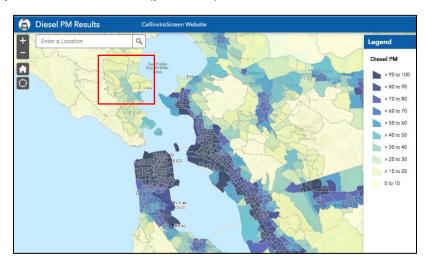


Figure 4: CalEnviroScreen Diesel Particulate Map Screenshot

Mapping diesel exhaust concentrations by California census tract show that diesel is much more spatially concentrated in major urban areas (like San Francisco, Oakland and San Jose) compared to Ozone or PM2. While San Rafael is less impacted than more major urban parts of the Bay Area, it is noticeable that census tracts located along Highway 101 are exposed to higher concentrations of diesel exhaust than other San Rafael Census tracts. All San Rafael census tracts score below the 50th percentile in terms of exposure to diesel exhaust compared to other California Census tracts.

Drinking Water Contaminant Concentrations

While most drinking water in California meets requirements for health and safety, agricultural runoff, industrial effluent, and sewage can contaminate drinking water. This is especially likely to occur during intense periods of rain when drainage systems become overwhelmed. The CalEnviroScreen water quality score combines data on the average concentrations of 13 different water contaminants and average frequency of two types of water quality violations across California water districts when water

samples are routinely tested. The following image depicts water quality scores across San Rafael and surrounding census tracts:

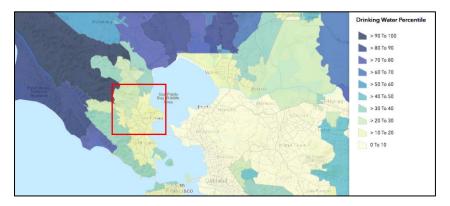


Figure 5: CalEnviroScreen Drinking Water Contaminant Map Screenshot

Marin's urbanized areas, confined largely to the eastern part of the County and which include San Rafael, have low rates of water contamination compared to the rest of the state (no higher than the 20th percentile compared to other CA census tracts for water contamination) and compared to the western parts of Marin County, which have some of the highest water contamination rates in the country. These areas, such as the Point Reyes National Seashore and Tomales Bay areas, have higher rates of water contamination due to the prevalence of commercial cattle raising in the area and the resulting waste runoff entering waterways.

Only 30% of all other census tracts in California score better in terms of water quality compared to any San Rafael Census tract.

Pesticide Use

Data on pesticide use comes from the California Department of Pesticide Regulation, which keeps a record of where and when agricultural pesticides are used across the State. Pesticide use is most common in agricultural areas. The following image depicts pesticide use (in pounds per square mile for 70 agricultural pesticides)¹⁰ in San Rafael and surrounding census tracts.

¹⁰ Note: This indicator does not include household pesticide use or pesticide uses for non-agricultural purposes like golf courses



Figure 6: CalEnviroScreen Pesticide Exposure Map Screenshot

As the map indicates, San Rafael has no significant exposure to agricultural pesticides. Only two tracts in unincorporated Lucas Valley appear to have any exposure to pesticides, but these are still below the average exposure to pesticides across California census tracts (60% of California census tracts are exposed to higher levels of pesticides than these two tracts in unincorporated Lucas Valley)

Toxics Release from Facilities

Toxics release data comes from the U.S. Environmental Protection Agency (EPA), which has recorded and made public all data on major sources of toxic pollutants in the U.S. since 1986, a program known as the Toxics Release Inventory (TRI). The Toxics Release score from CalEnviroScreen also takes into account geographic differences determining how likely toxics are to spread and/or concentrate in certain areas, as well as differences in toxicity levels of the 595 different chemicals registered as toxic in the TRI. The image below shows locations of toxic release sites and relative exposure (in terms of percentile) to toxics in San Rafael and surrounding census tracts:

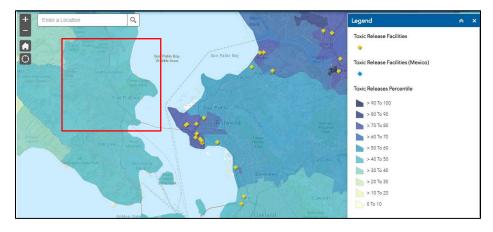


Figure 7: CalEnviroScreen Toxics Release Map Screenshot

All of Marin County is notably free of toxic release facilities, which is especially striking when compared to neighboring communities in Contra Costa County. All San Rafael census tracts score better than at least half of all California census tracts in terms of exposure to toxic facilities registered in the TRI.

Environmental Effects

These are defined by CalEnviroScreen as *locational* indicators of toxic chemicals, distinct from the previous set of indicators, which measure *amounts* and *concentrations* of pollution. Cal EnviroScreen uses five different indicators to identify geographic concentrations of pollution sources. Each of the indicators was mapped by census tract using the CalEnviroScreen online mapping tool. The subsections below summarize findings from each:

Cleanup Sites

These are sites that are contaminated with harmful chemicals and need significant environmental remediation according to the California Department of Toxic Substances Control and the U.S. EPA's Superfund program. The following map shows the location of specific environmental cleanup sites (in blue) as well as the relative concentration of environmental clean-up sites in or near California census tracts. The geographic concentration indicator accounts for the type of site and how close the site is to where people may live:

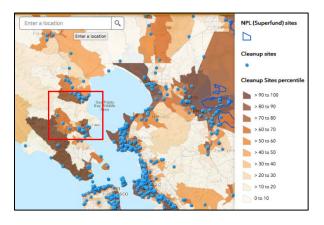




Figure 8: CalEnviroScreen Environmental Cleanup Sites Map Screenshots

Two census tracts (comprising San Rafael's Canal Neighborhood) contain higher-than-average concentrations of sites needing environmental cleanup. This is consistent with current land uses in the area, which contains most of San Rafael's industrial uses. Just north of San Rafael City Limits and to the east of Highway 101 is the former Hamilton Air Force Base, which also contains a high concentration of cleanup sites. Although the former Air Base is not within San Rafael, the Census Tract is close to the Smith Ranch Road area.¹¹

¹¹ Note: The large census tract comprising much of West Marin and the Marin Headlands is shown in dark brown because it contains several former military sites in the Marin Headlands Area that are registered as environmental clean-up sites, although population density is very low in this tract (approximately 1,038 people living within an area of 52.8 square miles)

Groundwater Threats

Most often, groundwater threats come in the form of leaking underground storage tanks containing toxic chemicals. Leaking underground tanks can contaminate soil and leach into groundwater. Gas stations storing gasoline and diesel fuel underground are a common example of a groundwater threat. The California State Water Resources Control Board keeps a database of locations where groundwater may be threatened by certain sources of pollution. In the following image, these locations are shown (as purple dots) against California Census tracts which are given a score by CalEnviroScreen based on the type of site and how close it is to neighborhoods where people live.

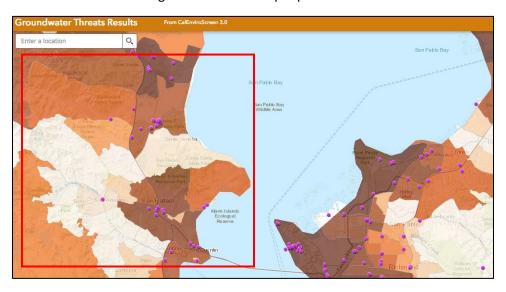


Figure 9: CalEnviroScreen Groundwater Threats Map Screenshot

There are three locations where groundwater threats are concentrated in the San Rafael area. One is in the vicinity of McInnis Park and the Las Gallinas Wastewater Treatment Plant. Another is located in Downtown San Rafael, associated with past light industrial uses (like a former PG&E facility) as well as some operating currently, like a dry-cleaning facility.

Further south and to the east, near the Richmond-San Rafael Bridge entrance, are three sites which are current and former solid waste facilities as well as a storage yard for a construction company. As previously mentioned, this area—the southeast quadrant of San Rafael on either side of highway 580—has historically been where San Rafael's and most of Marin County's industrial uses are located.

Hazardous Waste Generators and Facilities

Distinct from clean-up sites, these are currently operating commercial and industrial facilities that produce a range of toxic waste as a result of normal operations. These could include engine oil from an auto-mechanic or pharmaceutical waste from a research lab. The following map depicts the location of hazardous waste facilities against California census tracts, scored by the number of waste-generating facilities within them and ranked by percentile:

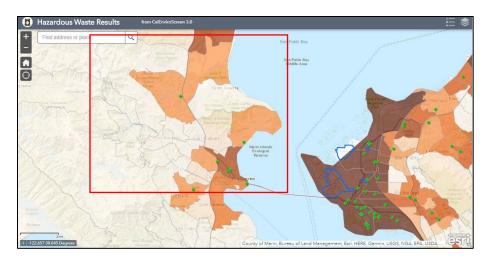


Figure 10: CalEnviroScreen Hazardous Waste Map Screenshot

Although San Rafael has more facilities generating hazardous waste than other cities in Marin, the difference between San Rafael and neighboring Richmond to the east is striking. The five sites in the San Rafael City Limits are owned by various utilities and large-scale commercial facilities. Three of these are in one census tract near the Canal neighborhood. As previously mentioned, San Rafael's industrial uses are concentrated in this area. San Quentin State Prison is also identified as a hazardous waste producing facility, and while not within City Limits, it is very close to the southeastern edge of this same census tract, just south of the entrance to the Richmond-San Rafael Bridge.

Impaired Water Bodies

Impaired water bodies are any streams, lakes, rivers, or other water bodies that test positive for a certain concentration of pollutants (typically from agricultural and industrial runoff). Although focusing mostly on freshwater sources, Cal Enviroscreen also includes estuaries and bays in this category, including San Francisco Bay.



Figure 11: CalEnviroScreen Impaired Waterbodies Map Screenshot

Because San Rafael's eastern boundary runs along the San Francisco Bay shoreline, the City's eastern census tracts are depicted in dark brown, indicating their relative proximity to San Francisco Bay. In addition, the San Rafael Canal, the eastern portion of Gallinas Creek, and all of Miller Creek within the City's Planning Area are considered "impaired streams" as of 2012 by the State Water Resources Control Board, scoring around the 60th percentile compared to other California watersheds in terms of pollution levels.

Solid Waste Sites and Facilities

CalEnviroscreen defines solid waste sites as places where household garbage and other types of waste are collected, processed and/or stored, including landfills, transfer stations, recycling centers, and composting facilities. This dataset includes waste facilities that collect waste from homes, industry, and commercial activities. The image below shows solid waste facilities in San Rafael:

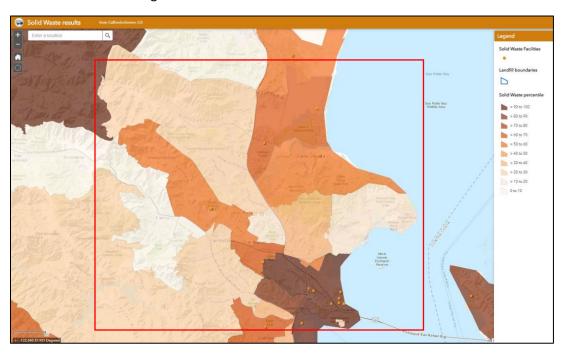


Figure 12: CalEnviroScreen Solid Waste Facilities Map Screenshot

Seven of the City's twelve solid waste facilities—including the City's four currently active sites—are in San Rafael's industrial areas immediately east and west of Highway 580. This area is mostly devoted to commercial and industrial uses, with little housing. West of highway 580 is a large, currently active facility operated by Marin Sanitary Service. This facility contains two different waste disposal sites depicted on the map. South of this location also west of Highway 580 is a Central Marin Sanitary Agency (CMSA) limited volume waste transfer station. Towards downtown East of Highway 580, there are two waste disposal sites that are now closed and two sites that are active. The two active sites are owned by CalRecycle. One of the inactive sites is owned by a construction company and the other is property of San Quentin state prison. Aside from the two Marin Sanitary Service facilities, and the two CalRecycle facilities discussed above, all other sites identified in the above figure are no longer operational.¹²

¹² Note: the dark brown area in the upper left-hand corner of Fig 12 includes large-scale agricultural composting operations.

Sensitive Population Indicators

Cal EnviroScreen uses three different indicators to measure the percentage of the population in each census tract that may be more severely affected by exposure to pollution due to their health.

The subsections below summarize findings from mapping the three different sensitive population factors by San Rafael census tract.

Asthma

Outdoor air pollution can exacerbate symptoms of asthma and trigger asthma attacks. There is also a significant causal link shown between certain types of air pollution and infants born with asthma.

The figure below depicts the number of hospital visits related to asthma per 1,000 people in each census tract.

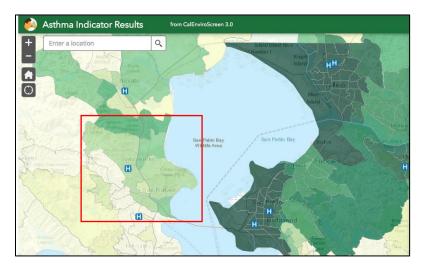


Figure 13: CalEnviroScreen Asthma Rates Map Screenshot

The Northeast San Rafael area as well as the tracts bordering Highway 580 on either side are slightly darker green than other San Rafael census tracts, indicating slightly higher asthma rates compared to the rest of the City. However, compared to neighboring Richmond and other communities in Contra Costa County, asthma rates are relatively low in San Rafael overall.

Cardiovascular Disease

People with cardiovascular disease have a greater risk of heart attack and death from heart attack when exposed to pollutants for prolonged time periods, specifically air pollution. The following figure depicts hospital visits for cardiovascular disease

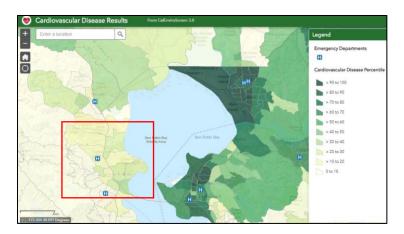


Figure 14: CalEnviroScreen Cardiovascular Disease Rates Map Screenshot

Similar to Asthma, San Rafael has a relatively low percentage of residents who visit the hospital for cardiovascular disease. Census tracts in San Rafael do not exceed the 40th percentile compared to other California census tracts. This is especially striking when compared to communities in neighboring Contra Costa County and in Vallejo to the northeast.

Low Birth Weight Infants

Babies born with low birth weights are more likely to develop chronic illnesses like Asthma. Babies are more likely to be born with low birth weights when mothers are exposed to pollution from traffic, industry or agriculture, or when mothers experience extreme stressors like poverty, domestic abuse, and homelessness. The following image shows the percentage of low birth weights averaged over a seven-year period in each San Rafael census tract.



Figure 15: CalEnviroScreen Low Birth Weight Rates Map Screenshot

San Rafael has relatively low rates of infants born with low birthweights compared to communities in Solano and Contra Costa Counties across the San Pablo Bay. No San Rafael census tract exceeds the 40th percentile of all California census tracts in this respect.

Life Expectancy

This indicator is not included in Cal EnviroScreen but is available as an interactive web-map as part of an Associated Press analysis of detailed life expectancy data from the National Center for Health Statistics. The map below depicts life expectancies by census tract for children born between 2010 and 2015. The analysis found strong relationships between income, education, health insurance coverage, racial segregation, and life expectancy. The map below shows these results for San Rafael census tracts:

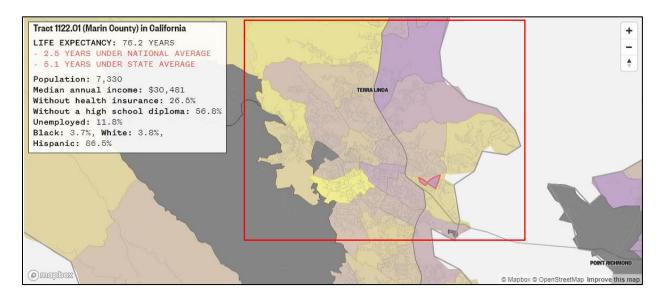


Figure 16: National Center for Health Statistics Life Expectancy Map Screenshot

Two San Rafael census tracts score below both national and state averages for life expectancy. One is a large tract at the City's northeast border containing Contempo Mobile Home Park and the Smith Ranch Road neighborhood as well as the North San Rafael Commercial Center. The average life expectancy in this tract is 77.3 years among the 4,085 residents (1.4 years below the national average and 4 years below the state average). The other is the smaller, more densely populated census tract comprising the Canal neighborhood, with an average life expectancy of 76.2 years across 7,330 residents (2.5 years below the national average and 5.1 years below the state average). The average life expectancy in California is 80.9 years and the average life expectancy in San Rafael is 81.8 years.

Socioeconomic Indicators

Cal EnviroScreen uses five different indicators to measure socioeconomic conditions which can pose challenges to living a healthy lifestyle and/or hinder people's ability to protect themselves against health effects from pollution exposure. On a map, these factors are typically depicted as the percentage of people or families living in each census tract that have these characteristics.

The subsections below summarize findings from mapping the five different socioeconomic factors by San Rafael census tract.

Educational Attainment

Cal EnviroScreen includes Educational Attainment levels in their pollution vulnerability score because of the close link with education and the health effects of pollution. Numerous studies have shown that people with more education are likely to have better health and live longer, that communities with more educated people tend to be less polluted, and that adults with less education have higher rates of pollution-related health problems. The fact that higher educational attainment leads to higher earnings accounts for much of the relationship between educational attainment and health, but there is substantial evidence that the causal relationship between education and long-term health still persist, even when controlling for a person's income.¹³ The Map below depicts educational attainment rates in San Rafael census tracts. The darker areas have lower rates:

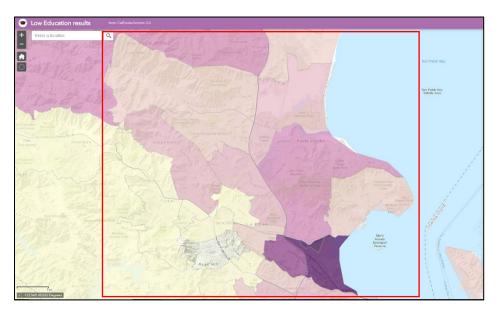


Figure 17: CalEnviroScreen Low Educational Attainment Map Screenshot

Two census tracts comprising San Rafael's Canal neighborhood score very high compared to the rest of California in terms of the percentage of adults over 25 with less than a high school education. In the smaller tract, a dense residential area where much of San Rafael's multifamily housing is concentrated, 57% of adults over the age of twenty-five have not graduated from high school. This is a higher percentage than 97% of all other census tracts in California. In the adjacent Canal census tract, comprised primarily of commercial and industrial uses but with a residential population of 4,217 people, 38% of adults have not graduated from high school. This is higher than 85% of all other California census tracts. All other San Rafael census tracts score in the 40th percentile or lower compared to other California census tracts for adults over 25 without a high school diploma.

¹³ Robert A. Hahn and Benedict I. Truman, "Education Improves Public Health and Promotes Health Equity," *International Journal of Health Services* 45, no. 4 (2015): 657–678.

Housing Burden

CalEnviroScreen measures housing burden as the percentage of households in a census tract that are very low income (making less than 80% of the countywide median income) and that also pay more than 50% of their household income on rent or mortgage payments. California has higher housing costs compared to other states in the U.S., and a higher percentage of residents spending more than half of their incomes on housing. The percentage of households in California who pay more than 50% of their incomes on housing has also been increasing over the last decade. People with less money left over after paying for housing may not be able to afford medical care and are more likely to live in pollution-burdened areas because of the associated lower rents.

The following map shows cost-burdened households by census tract in San Rafael:

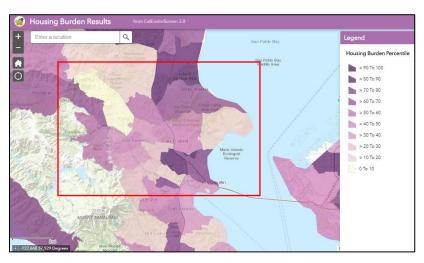


Figure 18: CalEnviroScreen Housing Burden Rates Map Screenshot

The map shows several census tracts in San Rafael that score higher than 80% of all other California census tracts in terms of the percentage of low-income, cost-burdened households within them. In the northeastern part of the City, the census tract encompassing most of the Contempo Mobile Home Park/Smith Ranch area has 27% of its approximately 4,048 residents who are in lower-income, cost-burdened households—higher than 82% of all other California households. At the southern end of the City, the tract immediately west of Highway 580 (lincluding Woodland Avenue) has 28% of its 4,315 residents in lower-income, cost-burdened households (higher than 83% of all other CA census tracts). In the same vicinity, east of Highway 580 are the two tracts that make up San Rafael's Canal neighborhood. In the smaller, denser Canal census tract, 49% of the approximately 7,809 residents live in low-income, cost-burdened households, which is at the 97th percentile compared to all California census tracts. In the larger tract, where industrial and commercial uses are present in addition to housing, 26% of residents are in lower-income, cost-burdened households, which is higher than 78% of the rest of the state.

¹⁴ From the California Legislative Analyst's Office. https://lao.ca.gov/reports/2015/finance/housing-costs/housing-costs.aspx

Linguistic Isolation

'Linguistically isolated households' is a term used by the U.S. Census Bureau to describe households where no one over the age of 14 speaks English "well" (using the scale of 'not at all,' 'not well,' or 'very well' to measure respondent English-speaking abilities). Adults who are not able to speak English well are more likely to face difficulty when accessing social services and medical care, and they are less likely to get the care and information they need. Linguistically isolated households are also less likely to receive or understand important information when there is an emergency.

The following map shows linguistically isolated households in San Rafael:

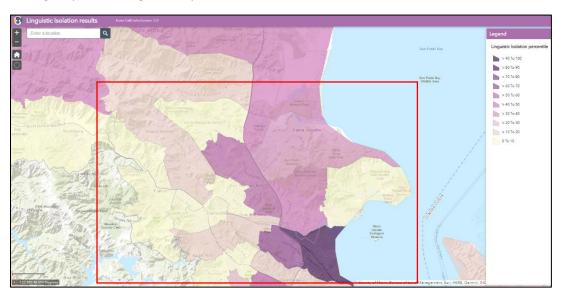


Figure 19: CalEnviroScreen Linguistic Isolation Rates Map Screenshot

In San Rafael, the two census tracts comprising the Canal neighborhood stand out in terms of the percentage of linguistically isolated households. In the smaller but more populous tract, 46% of households do not speak English well, higher than 99% of all other California census tracts. In the geographically larger Canal census tract, 34% of households do not speak English well, higher than 96% of all other California census tracts. Most residents in these tracts speak Spanish at home (84% and 67% respectively).

Poverty

Family income is arguably the most influential social determinant of pollution exposure and the resulting health effects. Geographic concentrations of poverty are strongly correlated with geographic concentrations of pollution sources like factories, hazardous waste facilities, and environmental cleanup sites. Income can also negatively affect someone's health when they cannot afford healthy living and working conditions, nutritious food and necessary medical care. Someone with a low income is more likely to live near major pollution sources, more likely to experience health problems from living near pollution sources, and less likely to be able to afford medical care to treat pollution-related health problems like asthma, cardiac disease, or cancer.

The following map depicts federal poverty status by census tract in San Rafael (the darker colors indicate higher poverty rates):

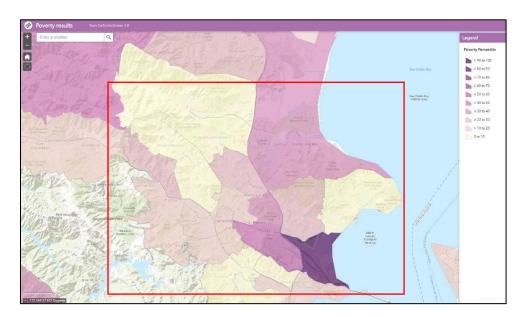


Figure 20: CalEnviroScreen Poverty Rates Map Screenshot

The two census tracts comprising San Rafael's Canal neighborhood score above the 80th percentile for the percentage of residents living below the Federal Poverty Line (FPL), which is set according to average incomes, household size and age of household members in the entire United States. Because the FPL is based on national averages, it does not account for regional differences in the cost of living. Individuals living below the federal poverty line in high-cost areas like Marin County and the greater Bay Area face higher income burdens than individuals living below the federal poverty line in lower-cost regions. In the smaller but more populous Canal census tract, 38.9% of residents live below the Federal Poverty Line. In the larger Canal census tract, 17.6% of residents live below the Federal Poverty Line.

Indeed, both American Community Survey (ACS) data and an existing community-driven research report on the Canal neighborhood indicate that many families in the Canal overcome the high cost of rent in San Rafael by 'overcrowding,' which the California Department of Housing and Community Development defines as more than one person occupying each room in a dwelling unit, including dining and living rooms but excluding kitchens and bathrooms. According to the 2013-2017 ACS, 66% of the renter households in Tract 1122.02 and 42% of the renter households in Tract 1122.01 met the Census definition of overcrowding (more than 1.0 person per room), compared to 19% of renter households in the city as a whole.

Unemployment

CalEnviroScreen includes unemployment in their overall vulnerability score because unemployed people are less likely to have health insurance or access to medical care, because poor health can make it

harder for someone to find or keep steady work, and because stress from long-term employment can lead to chronic illnesses, such as heart disease, which can shorten a person's life. Unemployment is measured by the U.S. census as the percentage of the population over 16 that is eligible for work (e.g. not retired or unable to work due to a disability) but not working. The following map depicts unemployment rates in San Rafael census tracts:

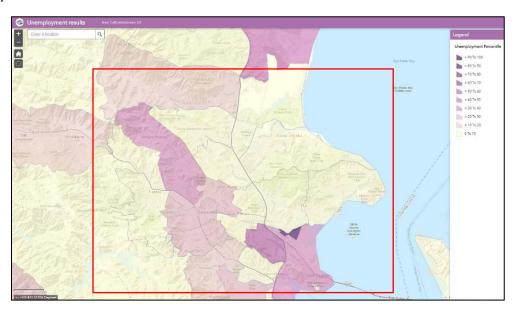


Figure 21: CalEnviroScreen Unemployment Rates Map Screenshot

Among all San Rafael census tracts, unemployment is highest in the smaller census tract comprising San Rafael's Canal neighborhood (in dark purple). Sixteen percent of adults in this tract are unemployed, which is higher than 82% of all other California census tracts. The larger Canal census tract, depicted in a lighter purple, has an unemployment rate of 8%, which is higher than 37% of other California census tracts. The census tract west of these two tracts and immediately west of Highway 101 in southern San Rafael (along Woodland Avenue), has an unemployment rate of 10%, higher than 56% of California census tracts. All other census tracts in San Rafael have relatively low unemployment rates, scoring in the 25th percentile or lower compared to all California census tracts in terms of unemployment.

Unemployment rates for the three census tracts discussed above are consistent with health insurance coverage data from the National Center for Health Statistics. According to this data source, 26.5% of residents in the smaller Canal neighborhood census tract lack health insurance, 25.4% of residents in the larger Canal census tract lack health insurance, and 16.4% of residents in the tract immediately west of Highway 101 in southern San Rafael lack health insurance.

Healthy Community Indicators

In addition to the indicators included in CalEnviroScreen, this analysis also considers neighborhood walkability, as well as neighborhood access to healthy food and parks, which are all strongly correlated

with a range of health indicators like obesity, heart disease, and life expectancy. ¹⁵ Finally, this section also examines areas in San Rafael where houses were built before 1960, an indication of where households may be exposed to unhealthy construction materials in their home, primarily from lead paint.

Walk Score

Walk Score is a private company that maintains a public access walkability database which assigns a numerical 'walkabilty' score to any address in the United States, Canada and Australia. For each address, Walk Score analyzes hundreds of walking routes to nearby amenities like grocery stores, parks, schools, public transit stops, etc. Amenities within a five-minute walk are given maximum points, while amenities further away are given progressively fewer points, with no points given after a 30-minute walk. Walk Score also measures the overall pedestrian friendliness of an area by analyzing population density and road characteristics like block length and intersection density. The Walk Score index uses data from Google, Factual, Great Schools, Open Street Map, the U.S. Census, Localeze, and places added by the Walk Score user community. The following map shows Walk Score results for San Rafael:¹⁶

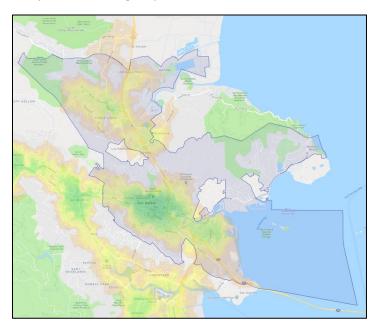


Figure 22: Walk Score Result Map for San Rafael

¹⁵ Emily Talen and Julia Koschinsky, "The Walkable Neighborhood: A Literature Review," *International Journal of Sustainable Land Use and Urban Planning* 1, no. 1 (2013); Bethany B. Cutts et al., "City Structure, Obesity, and Environmental Justice: An Integrated Analysis of Physical and Social Barriers to Walkable Streets and Park Access," *Social Science & Medicine* 69, no. 9 (2009): 1314–1322; Ariane L. Bedimo-Rung, Andrew J. Mowen, and Deborah A. Cohen, "The Significance of Parks to Physical Activity and Public Health: A Conceptual Model," *American Journal of Preventive Medicine* 28, no. 2 (2005): 159–168; Heidi M. Blanck et al., "Let's Go to the Park Today: The Role of Parks in Obesity Prevention and Improving the Public's Health," *Childhood Obesity (Formerly Obesity and Weight Management)* 8, no. 5 (2012): 423–428; Martin White, "Food Access and Obesity," *Obesity Reviews* 8 (2007): 99–107; Sheila E. Fleischhacker et al., "A Systematic Review of Fast Food Access Studies," *Obesity Reviews* 12, no. 5 (2011): e460–e471; Renee E. Walker, Christopher R. Keane, and Jessica G. Burke, "Disparities and Access to Healthy Food in the United States: A Review of Food Deserts Literature," *Health & Place* 16, no. 5 (2010): 876–884.

¹⁶ Note: Walkscore includes the San Rafael City Boundary, shaded in blue

The Walk Score map shows San Rafael's downtown area as having the highest walkability scores (indicated in green), followed by the Montecito-Happy Valley neighborhood and the Canal neighborhood. The area immediately northwest of Northgate Mall at the intersection of Freitas Parkway and Las Gallinas Avenue is also relatively walkable. The Santa Venetia, Sun Valley, and Los Ranchitos neighborhoods score relatively low in terms of walkability, as does the entire San Pedro Peninsula.

Healthy Food Access

United States Department of Agriculture (USDA) maintains a publicly available database of supermarket access for every U.S. census tract. As the following map indicates, three census tracts in San Rafael have a significant proportion of low-income residents *and* over half of these low-income residents live farther than one half-mile from the nearest supermarket (note: this is measured as a street-networked mile rather than a Euclidean 'as the crow flies' mile).

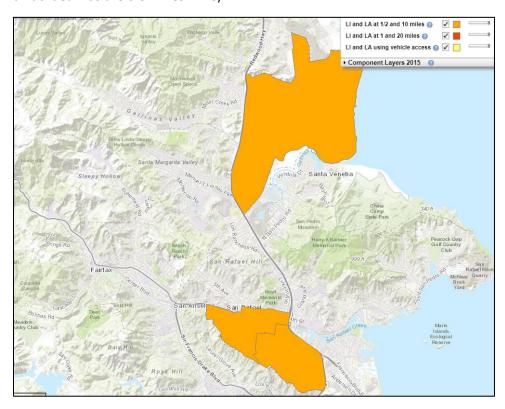


Figure 23: USDA Grocery Store Access Map Screenshot

According to Figure 23, two of the three census tracts with a "Low Income/Low Access' designation according to the USDA's food access database are located immediately west of Highway 101. These two tracts encompass Gerstle Park, Picnic Valley, Bret Harte, and the central part of Downtown. One other census tract in the northeastern part of the City is also identified as "Low Income/Low Access." This tract includes parts of the Civic Center neighborhood, the Smith Ranch Road area, and the North San Rafael Commercial Center. It is worth noting that this data is from 2015, prior to when the Sprouts grocery store opened on Irwin Street in South San Rafael. Moreover, this area includes a Safeway store and a

neighborhood market in Bret Harte. By contrast, there are no full-service markets or grocery stores in the northeast area of the city.

Park Access

The Trust for Public Land national non-profit organization maintains a public-access database tracking access to urban parks, called ParkServe. ParkServe identifies all urban parks and measures a ten-minute walk "service area" for each one. Through this process, ParkServe then maps all areas outside of a ten-minute walk to any park, depicted in the figure below for San Rafael:¹⁷



Figure 24: ParkServe Result Map for San Rafael

The levels of 'Park Need' on the map balance the ten-minute walking distance threshold with several other relevant demographic variables resulting in the ranked indicator (low, medium, and high park need). These indicators are: population density (weighted at 50%), density of children aged 19 and younger (weighted at 25%), and density of households making 75% or less of the county-wide median income (weighted at 25%).

Figure 24 shows that several areas in San Rafael have a high park need (in red). The largest areas are in Northeast San Rafael, the Montecito neighborhood, Lincoln Hill, and small portions of the West End/Sun Valley neighborhoods.

 $^{^{17}}$ Note: ParkServe includes the San Rafael City Boundary depicted as a white line

Lead Paint

The U.S. Environmental Protection Agency (EPA) maintains an Environmental Justice database and interactive web-map, similar to CalEnviroScreen. It includes datasets available on a national scale. One of these is the 'Lead Paint' indicator, which uses census data to identify homes built before 1960, which are more likely than newer homes to have lead paint or other harmful building materials. Figure 25 below depicts homes built before 1960 in San Rafael by census block group (a smaller geography than a census tract):

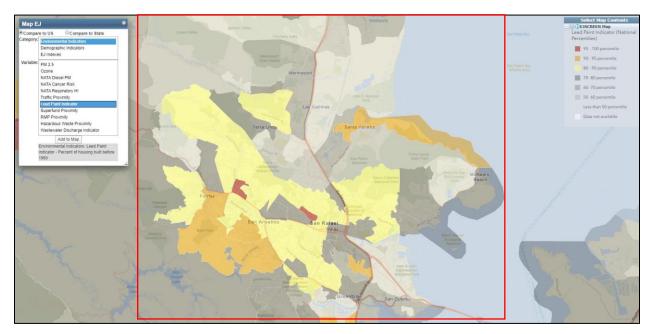


Figure 25: EPA EJ Screen Lead Paint Indicator Map Screenshot

One block group, in the Sun Valley neighborhood on San Rafael's western boundary, stands out on the map as having a large concentration of pre-1960 housing stock. In addition, the census block group containing parts of Santa Venetia and other large areas (Terra Linda, parts of Downtown, Montecito and Black Canyon area) include substantial numbers of pre-1960 homes. Some San Rafael block groups do not have available data, like in the Canal neighborhood, the Peacock Gap neighborhood, and in the Smith Ranch neighborhood.

Discussion

In terms of cumulative pollution burden (a single score combining all CalEnviroscreen indicators), all census tracts in San Rafael score at the median or better compared to other California census tracts. This discussion focuses on the Canal neighborhood in particular. Although pollution burden scores in this area are generally better than the statewide median, the two census tracts making up the Canal score higher than other San Rafael census tracts for PM2.5 concentrations, diesel particulate concentrations, density of environmental cleanup sites, groundwater threats, and solid waste facilities. In addition, most households in the Canal face a significantly higher socioeconomic burden compared to

the rest of Marin County. Additionally, the smaller Canal neighborhood census tract has one of the highest residential densities in the County, the highest incidences of overcrowding, and the highest concentration of children in the County. More than 80% of households in this census tract having at least one child under the age of 18 according to 2017 American Community Survey estimates.

Several existing reports provide further context. The first is a collaborative, community-driven report written by local experts, advocates and leaders in the Canal Community, and the other written by academic researchers. The discussion below summarizes these reports.

The first report, published in 2014 titled *Voces del Canal*, is the end-result of a multi-year project led by a coalition of more than thirteen resident leaders in partnership with Dominican College researchers. The project team engaged over 678 Canal residents in neighborhood surveys, participatory research workshops, and community focus groups to identify the neighborhood's top policy concerns and associated recommendations. The report combines the results of these efforts with insights from twenty key-interviews with local service providers.

Voces Del Canal describes the Canal neighborhood as a culturally rich immigrant gateway community with a robust network of neighborhood organizations and community leaders. The neighborhood is also home to important cultural events in San Rafael, like the Dia De Los Muertos celebration, as well as family programs in the neighborhood's Pickleweed Park and Albert Boro Community Center.

The report's vision statement is to promote a safe, clean and healthy community for all of San Rafael, where families and children can walk and play freely, housing conditions are safe and high-quality, where all children have access to education and arts resources to support their pathway to a higher education and other opportunities, and where the history of San Rafael and the cultural heritage of all San Rafael residents are celebrated. To this end, the report's Analysis of Community Concerns section details barriers identified by Canal residents and service providers organized under the following categories:

- Police Mistrust
- Poor Neighborhood Conditions
- Low Performing and Under-Resourced Schools
- Lack of Safe, Healthy After-school Opportunities for Children,
- Barriers to Family Economic Mobility
- Barriers Between Residents and Service Providers
- Barriers Between Service Providers
- Barriers Between residents and City Leaders/Decision-Makers, and
- Barriers Between Residents

Below are some of the associated recommendations arising from the above list of community concerns

Recommendations from Canal Residents: Police Services and Collaboration

 Partnership-building activities between residents and local police, including Neighborhood Safety Committee meetings, to address police related concerns and organized events such as neighborhood walks and police "walking the beat," where police routinely walk through the neighborhood to create personal relationships and learn about community issues.

- Additional cultural competence training for police staff with support from community members in curriculum development.
- Establish San Rafael as a "Sanctuary City" to protect immigrants' concerns about deportation and raids

Recommendations from Canal Residents: Neighborhood Infrastructure

- Additional street lighting, security cameras, traffic signage, and designated pedestrian walkways.
- Recycling education programs and installation of public recycling and more trash containers.
- Safer and adequate housing, via better housing code enforcement and public housing services.
- Safer physical spaces for children and families to convene, including parks and indoor facilities for after-school programs and cultural events.

Recommendations from Canal Residents: Education and After School Programs

- Stronger academic programming and college readiness support in under-performing schools serving the Canal.
- More opportunities for parent collaboration with school administrators to discuss strategies for supporting their children' success.
- Parent workshops to help them navigate the school system and become more informed advocates for their children's academic needs.
- More affordable (if not free) and accessible after-school activities, including arts and culture, sports extra-curricular programs.
- More youth rehabilitation programs for at-risk youth to help (re)build stability in their lives.
- Additional funding support for existing community efforts to address after-school programming needs.

Recommendations from Canal Residents: Family Self-Sufficiency and Empowerment, Community Cohesion

- Opportunities to strengthen investment in more employment and job training activities, ESL classes, housing support and financial literacy.
- Cultivation of leaders in the Canal who are trusted by residents and can create connections with the broader community through trainings and education on topics such as community organizing, advocacy, etc.
- A stronger and coordinated resident advocacy network to increase community participation
- More opportunities for fostering community relationships, trust, and peer support between families and neighbors, including community education workshops, cultural fairs, community garden projects, and other recreational activities.
- More effective, culturally relevant avenues for outreach including accessing informal social networks such as markets, churches, home visits, school events, cultural activities, etc.

The second report, published in June 2015, is titled *Canal: An Immigrant Gateway in San Rafael at Risk.* It is an academic report resulting from UC Berkeley researchers partnering with Marin Grassroots, a community-based organization that facilitates grassroots leadership among low-income communities in Marin and that has worked in the Canal neighborhood for over twenty years. The report details a community profile of the two census tracts comprising the Canal using data from the American

Community Survey and evaluates factors that indicate the extent of gentrification pressure in the neighborhood.

The report finds that the neighborhood is at high risk of gentrification-related displacement of residents for the following reasons: First, 70-90% of Canal residents are renters (in the larger and smaller census tract respectively). Secondly, most households in the Canal earn low incomes. Third, the neighborhood has high and increasing rates of in-migration and household crowding coupled with low availability of affordable housing units and low production of new affordable units. Significantly, most Canal low income residents reside in market rate apartments, and not "affordable" apartments where income limits protect tenants from higher-income renters, and rent caps provide protection from rising rents.

Fourth, studies have shown that rents rise in response to the addition of new high-capacity transit infrastructure like the SMART train, which was under construction at the time the report was published. Without adequate renter protections and affordable housing production, the report concludes, the SMART train may contribute to gentrification-related displacement in the Canal neighborhood. Fortunately, the report concludes, San Rafael's condominium regulations, which do not allow rental unit conversions to condominiums unless the Citywide vacancy rate is above 5%, keep gentrification pressure caused by condominium conversions low.

These reports help tell a story larger than what the maps and data communicate. Together, and with additional community input underway through General Plan 2040, they will inform updated policies and action programs for the years ahead.