Update
SACRAMENTO-SAN JOAQUIN DELTA
Socioeconomic Indicators

DELTA PROTECTION COMMISSION

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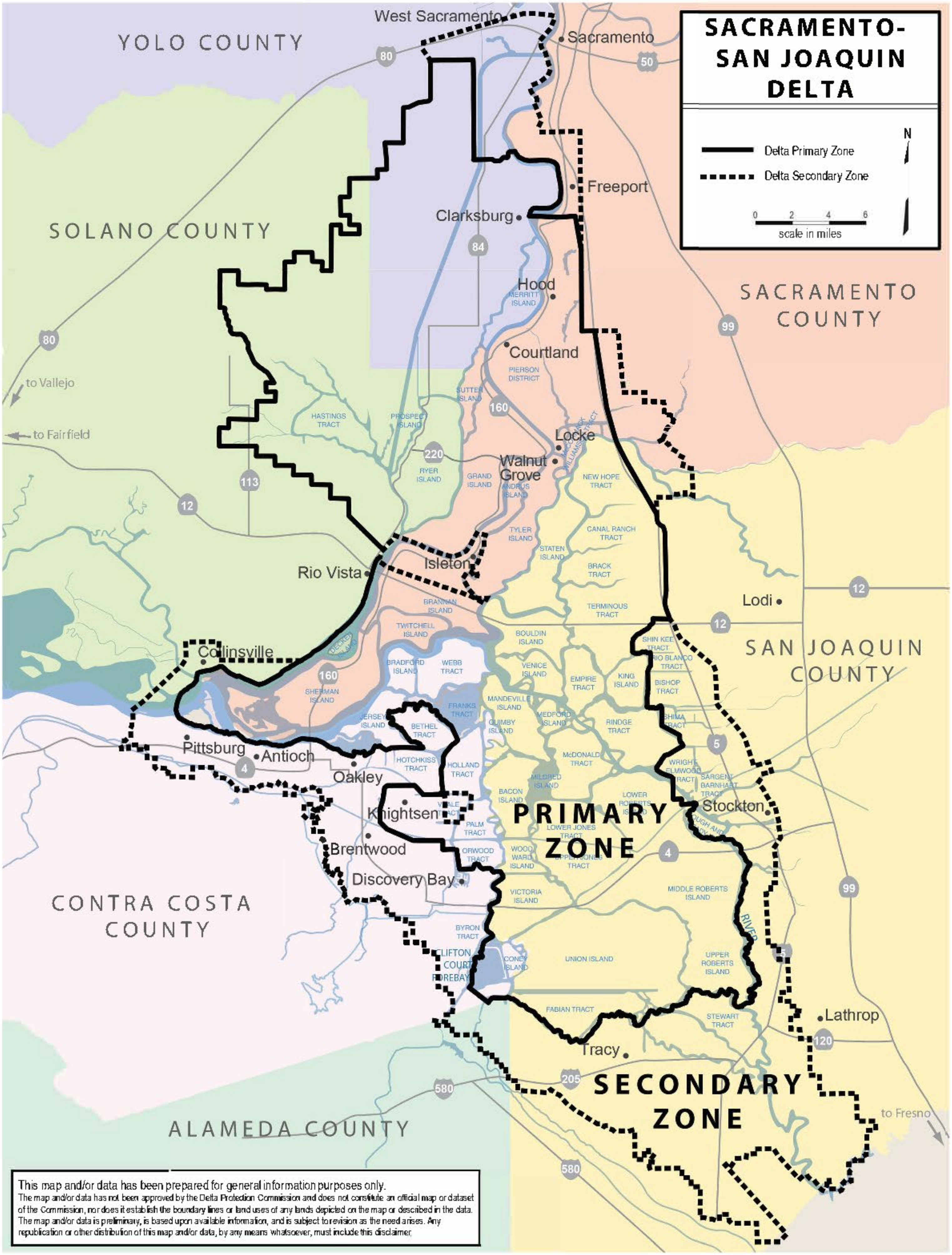

SACRAMENTO-SAN JOAQUIN DELTA
Delta Primary Zone
Delta Secondary Zone
N
0 2 4 6
scale in miles
YOLO COUNTY
SOLANO COUNTY
SACRAMENTO COUNTY
SAN JOAQUIN COUNTY
CONTRA COSTA COUNTY
ALAMEDA COUNTY
PRIMARY ZONE
SECONDARY ZONE
West Sacramento
Sacramento
Freeport
Clarksburg
Hood
Courtland
Locke
Walnut Grove
Isleton
Rio Vista
Collinsville
Pittsburg
Antioch
Oakley
Knightsen
Brentwood
Discovery Bay
Lodi
Stockton
Lathrop
Tracy
to Vallejo
to Fairfield
to Fresno
MERRITT ISLAND
PIERSON DISTRICT
SUTTER ISLAND
HASTINGS TRACT
PROSPECT ISLAND
RYER ISLAND
GRAND ISLAND
ANDRUS ISLAND
NEW HOPE TRACT
TYLER ISLAND
STATEN ISLAND
CANAL RANCH TRACT
BRACK TRACT
TERMINOUS TRACT
BRANNAN ISLAND
TWITCHELL ISLAND
SHERMAN ISLAND
BRADFORD ISLAND
WEBB TRACT
BOULDIN ISLAND
VENICE ISLAND
EMPIRE TRACT
KING ISLAND
SHIN KEE TRACT
RIO BLANCO TRACT
BISHOP TRACT
MANDEVILLE ISLAND
FRANKS TRACT
JERSEY ISLAND
BETHEL TRACT
QUIMBY ISLAND
MEDFORD ISLAND
RINDGE TRACT
SHIMA TRACT
HOTCHKISS TRACT
HOLLAND TRACT
McDONALD TRACT
WRIGHT ELMWOOD TRACT
SARGENT BARNHART TRACT
MILDRED ISLAND
BACON ISLAND
LOWER ROBERTS ISLAND
LOWER JONES TRACT
PALM TRACT
ORWOOD TRACT
WOODWARD ISLAND
UPPER JONES TRACT
VICTORIA ISLAND
MIDDLE ROBERTS ISLAND
BYRON TRACT
CLIFTON COURT FOREBAY
CONEY ISLAND
UNION ISLAND
UPPER ROBERTS ISLAND
FABIAN TRACT
STEWART TRACT
80
50
84
99
160
220
113
12
4
5
120
205
580
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ABOUT THIS REPORT

The Socioeconomic Indicators Report provides a quantitative snapshot for benchmarking policy progress in the Sacramento-San Joaquin Delta region (the Delta). The Delta contains historic, economic, cultural, natural, and agricultural resources that benefit both the residents and visitors who enjoy the region. The state's goals for the Delta to provide a reliable water supply for California and protect, restore, and enhance the Delta ecosystem are to be achieved *in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place* (emphasis added) (Public Resources Code section 29702 and California Water Code section 85054). The policies of the Delta Protection Act of 1992 as amended are focused on protecting agriculture, increasing agricultural economic vitality, and ensuring environmental health while providing high-quality amenities to its residents and visitors.

This policy focus is rooted in the unique history and geography of the region and is often summed up in the phrase “Delta as Place.” Nearly three quarters of a million people live in the Delta, which encompasses 740,000 acres. Nestled between the highly urbanized San Francisco Bay Area and the metropolitan areas of Stockton and Sacramento, the Delta is an important agricultural area and waterway for the Golden State. Formed by the confluence of the state's largest rivers, the Delta provides drinking water for millions of Californians and filters some 40% of all California runoff. The majority of the Delta's total land area comprises active farms, with 75% on prime agricultural soils. By comparison, only 18 percent of the state's agricultural land is classified as prime farmland. The Delta supports $4.6 billion in agricultural output[1], and the region's diverse microclimates provide habitats for wildlife, migratory birds, and numerous fish species. Over 1,000 miles of levees wind through the Delta, providing protection for farms, communities, schools, and people.

Agriculture, recreation and tourism are the primary backbones of the Delta’s economy. These industries are cyclical in nature and vulnerable to economic shocks and environmental changes (such as recessions and droughts). Monitoring these socioeconomic indicators can provide information on how the Delta fares in relation to state-level trends. A well-researched understanding of the Delta in the context of California's broader economic and environmental conditions may also help support timely infrastructure investments. The concept of an “Economic Sustainability Scoreboard” was recommended in the Commission’s Economic Sustainability Plan (ESP) adopted in 2012.[2] The ESP recommended that agriculture, recreation, and “[i]ndicators for infrastructure,

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[1] The State of Delta Agriculture: Economic Impact, Conservation and Trends, DPC, 2020

[2] Delta Protection Commission 2012

other economic sectors, and socio-economic status should also be developed and tracked to inform implementation of the plan."[3]

A Socioeconomic Indicators Report (SIR) for the Sacramento-San Joaquin Delta was first published in 2019 by the Delta Protection Commission (Visser et al. 2019) which covered the period 2011-2019. The 2019 report used American Communities Survey data from the period 2011-2016. This report updates the indicators with 2020 Decennial Census data (published in 2022), and American Communities Survey data and other sources from 2016 to 2022. One exception is the newly introduced category of Broadband, which uses data from 2023.

This update was initiated in 2023 and completed in 2024.

[3] Ibid, p. 285

WHAT ARE INDICATORS?

Socioeconomic indicators are powerful tools for monitoring and tracking overall quality of life and policy benchmarks. Indicators can help communities and regional public agencies monitor conditions by providing baseline measures against which policy interventions and socioeconomic change can be measured. Benchmarks help answer some basic questions such as: What are the primary challenges facing communities and regions, and in what ways are they doing well? How well is the economy functioning, and where are its key areas of growth? What is the quality of life in the region, and is it improving? What are the implications of current land use and resource policies on the region's future?

WHAT MAKES A GOOD INDICATOR?

Good indicators are:

1. **Clear and understandable, easy to communicate in concept, value, and importance**
2. **Can be tracked over time, are statistically measured at regular intervals, and come from a reliable source**
3. **Can be verified by triangulating multiple sources**
4. **Measure an outcome rather than an input**
5. **Gauge policy efficacy by providing a benchmark to track progress over time**
6. **Spatially specific and can allow comparison to similar regions of interest**

USE OF THIS REPORT

The data presented here offer a set of indicators that can be replicated regularly to monitor and track the socioeconomic health and vitality of the Delta region. The reporting offers a recurring opportunity for the Delta leadership and communities to take stock of resources and improve quality of life, and for researchers to investigate more deeply areas where more study is clearly needed to better understand results. The indicators selected combine measures of physical and human capital, revealing characteristics unique to the Delta as a whole, along with social characteristics particular to the specific communities. The set of indicators selected for the 2019 report was developed through an iterative process with policymakers and community stakeholders of the Delta region. This update report replicates the original indicators and adds two categories: community anchor institutions and broadband access and adoption.

This report assesses socioeconomic well-being through a regional framework, incorporating data from multiple jurisdictions across the broader area of the Delta. A regional approach is important because the drivers of change and the resulting patterns are not limited to individual communities, but instead are best understood and acted upon in ways that span multiple jurisdictions. In this case, the scale of analysis—the Delta region—mirrors the scale of action of the Delta Protection Commission.

The indicators selected do not present the entire picture of conditions or issues within the Delta, but they serve as a guide for further research and dialogue. The indicators are assembled from publicly available data gathered at regular intervals. Five-year averages are reported where appropriate to improve accuracy in reporting trends. Where possible and meaningful, Delta indicators are compared with indicators of the State of California and the San Joaquin Valley, another rural/peri-rural and primarily agricultural area. Such comparisons offer context for the Delta findings. Continued updates can track these indicators over time and from the baseline established in the 2019 report allow evaluation of progress toward specific policy goals. With repeated updates, trends may become apparent and in future more information may be available to create more complete analysis.

Based on this report's information, analysis, and structure, individual communities may also wish to develop indicators specific to their geography and concerns within the Delta. This report can serve as a guide for developing an indicator-based assessment of smaller communities. The impact of policies implemented or modified can also be assessed based on the indicators over time.

THE SACRAMENTO-SAN JOAQUIN DELTA REGION

The Delta is defined by its natural and cultural features, and its regional boundaries do not neatly follow jurisdictional boundaries such as county lines. The Delta constitutes parts of six counties: Sacramento, San Joaquin, Yolo, Solano, Contra Costa, and Alameda. Political boundaries often form the units of analysis for public data collection, making it difficult to separate Delta-specific trends from those of adjacent large, urban areas. For example, only a small portion of Alameda County is located within the legal Delta and is not represented on the Commission.[4] In addition, the census tract that includes Alameda County is large and heavily populated outside the legal Delta, which could skew the data. Therefore, this tract is not included in the data. The SIR approaches some of these

[4] Public Resources Code 29722

challenges by providing indicators tailored to the Delta region's specific boundaries, such as the counties, legal Delta, and Primary and Secondary zones.

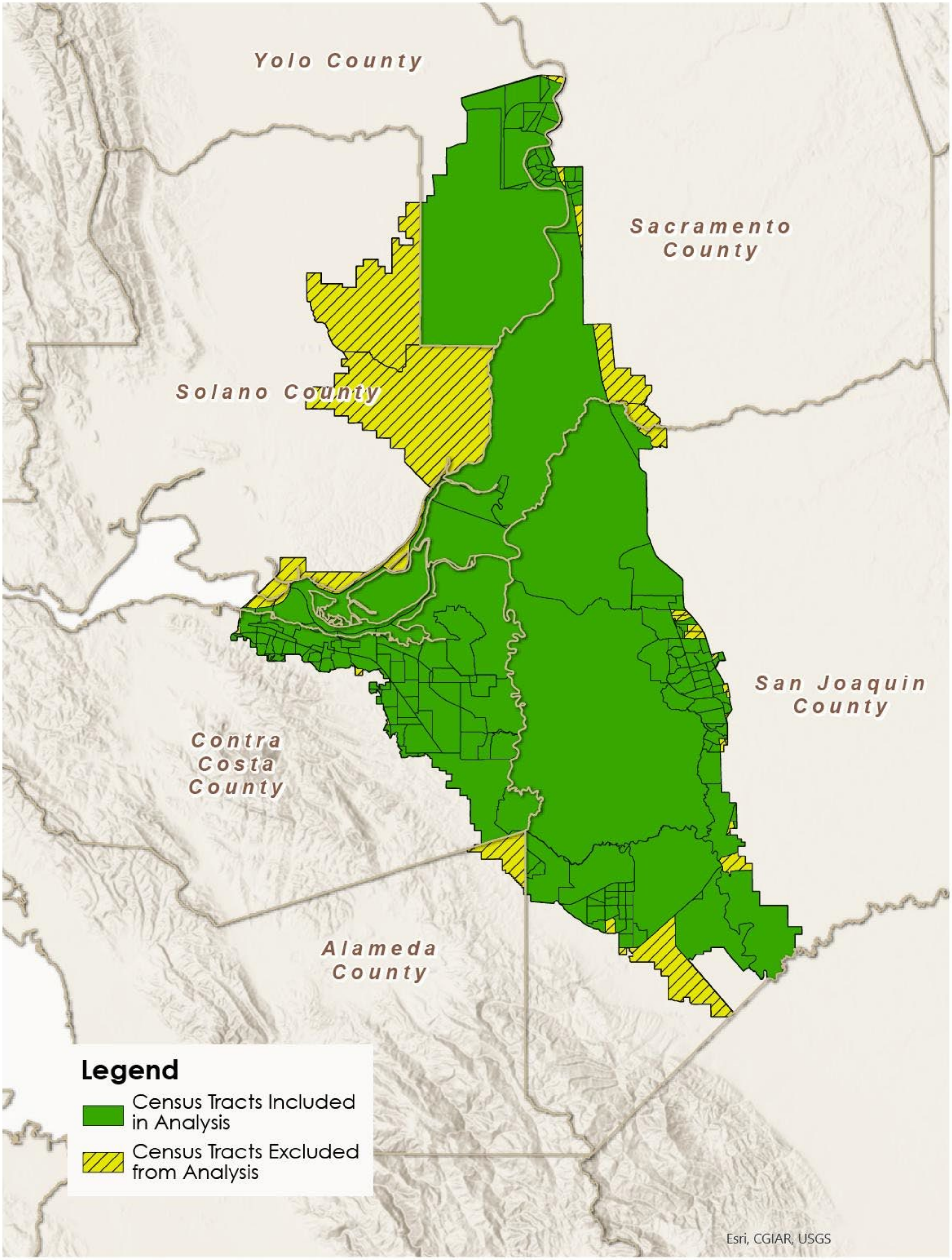
While most of the region has a rural character comprised of farms and small towns, the edges of the Delta are more urban, with higher-density residential and commercial developments and residents who commute for employment. The Delta Protection Act divides the legal Delta into Primary and Secondary zones, defined by the type and intensity of land use.

The Primary Zone encompasses much of the agriculturally focused land, and preserving working farms, clean waterways, and recreation are emphasized. The Delta Secondary Zone is more urban-influenced and includes cities and most of the Delta's population, where infill development and local commercial business are appropriate. Separate analyses of the indicators for the Primary and Secondary zones are provided in recognition of the policy differences.

METHODS

The 2019 SIR included 22 indicators across six categories developed through an iterative process between UC Davis researchers at the Center for Regional Change, stakeholders in the Delta, and the staff and members of the Delta Protection Commission during the spring and fall of 2016. The final indicators selected are not an exhaustive measure of socioeconomic conditions in the region. However, given the challenges of the Delta geography, these indicators are the best and most reliable to provide understanding of socioeconomic conditions in the region, since they are based on publicly available, census-collected data and can be tracked over time.

Both the 2019 study and this update used census tracts as the unit to obtain data. The geographic boundaries of census tracts can change, or be redistributed, with population increase or decrease. Both reports mapped the legal Delta, Primary and Secondary Zones boundaries over the census tracts. A total of 148 census tracts are included in this update. The Primary Zone tracts in this update are the same five tracts used in the 2019 report since the 2020 census redistribution did not change them. The Secondary Zone population saw much more growth since the 2019 study, resulting in an increase in the number of tracts to 143 used for this updated analysis of the period 2017-2022. The Secondary Zone tracts in the update (2017-2022) report were determined by using all the tracts that split from the 106 secondary zone tracts used in the 2011-2016 report. With the 2020 census redistribution, the secondary zone gained 37 census tracts. A map depicting the census tracts that were included in the analysis is shown on the next page.



Yolo County
Sacramento County
Solano County
San Joaquin County
Contra Costa County
Alameda County
Legend
Census Tracts Included in Analysis
Census Tracts Excluded from Analysis
Esri, CGIAR, USGS

The indicators included in this SIR update are displayed below. A description of the data sources for each indicator is included in the Appendix. Key Findings and the status of each indicator are described in the sections.

CATEGORY	INDICATORS
POPULATION	• Population by Age Group • Primary and Secondary Education • School District Poverty
JOBS AND THE ECONOMY	• Unemployment Rate • Median Household Income • Median Individual Earnings • Average Commute Time
WORKING LANDS	• Production by Land Use • Trends in Production • Land Conversion • Land-Cover • Fishing and Hunting Licenses • Park Use
HOUSING AND ROADS	• Median Home Value • Homeownership • Owner and Renter Vacancy Rates • Overcrowded Housing • Pavement Conditions
EDUCATION	• Enrollment Characteristics • Cost-adjusted Revenues per Pupil • High School Graduation Rate
COMMUNITY RESOURCES	• Community Anchor Institutions • Broadband Access

UPDATE FEATURES

With this update, some improvements were implemented to simplify and facilitate future updates, and to expand the analysis by adding two categories. Improvements included:

- Automating the reading and transfer of the data from the census/American Communities Survey websites with the census tracts/blocks assigned to the Delta using R script.
- Making the datasets available and searchable to the public and researchers. Datasets, shapefiles, and R scripts for this update will be available here: https://github.com/DPC-data/Delta-Socioeconomic-Indicators-Report.
- Introducing the categories of Community Anchor Institutions and Broadband Access and Adoption. The importance of these indicators as measures of community resilience is widely recognized and was particularly highlighted during the Covid-19 pandemic.
- Data gathered for this update was used to update the Delta Plan Outcome Performance Measure 5.9, Delta Economy. This measure was formerly based on the Regional Opportunity Index (ROI) for People and Place, an index that is no longer supported by ongoing research.
- Data from this update, to the extent feasible, in future will be presented paired with the results of the 2023 Delta Resident Survey, a collaborative research effort led by California Sea Grant and California State University, Sacramento (CSUS), with funding from the Delta Science Program and collaborators from the Bay-Delta Social Science Community of Practice.

KEY FINDINGS

The Delta has a cyclical economy based on the agriculture, recreation, and tourism industries. These economic sectors respond to different primary influences: Agriculture is affected by global market changes and depends on being competitive in a global food market, while recreation and tourism are buoyed by a national economy in which people have more disposable income. Over two-thirds of the land cover in the Primary Zone, and nearly half of the Secondary Zone, are dedicated to active farming. The Delta's working lands also support a notable share of the state's hunting, with 8% of hunting licenses issued in Delta-specific ZIP codes. Total acres of the Delta's working lands have stayed generally steady despite increasing housing pressure and habitat restoration projects, a good indicator that current farmland protection policies are effective.

Even amidst the effects of the COVID-19 pandemic, quality of life in the Delta remains high thanks to the combination of scenic farmland, high-demand recreational areas, and relatively affordable housing close to three major metropolitan areas. Additionally, the

Delta's local school districts outperform the state average graduation rates despite higher childhood poverty rates. High home-ownership rates compared with the state average reflect the multi-generational farm families with a long-term community commitment to the Delta.

The Delta economy remained relatively stable over the period spanned by both the original report and this update as measured by the indicators selected, though there are a few areas of concern that should continue to be monitored, including housing pressure on agriculture in the Secondary Zone, housing affordability, and road conditions.

Agriculture

Agricultural-based economies like the Delta tend to have higher unemployment rates than other areas. Yet in the current study period unemployment dropped by 3 percentage points in the Primary Zone to 7%, and from 12% to 6.5% in the Secondary Zone. This was only slightly higher than the unemployment rate statewide for the same period (6.5%), and lower than the San Joaquin Valley at 9%.

The amount of acreage devoted to farming in the Primary and Secondary zone remained steady during the study period (2017-2022). However, types of farming continue to adjust to changing conditions. The primary crop by acreage in the Delta is alfalfa, covering 17% of the Primary Zone and 12% of the Secondary Zone. It remains important to the dominant production paradigm in addition to the trends toward more permanent tree and vine crops.

Reflecting broader state trends, agricultural production in the Delta is shifting away from commodity crops to permanent crops such as trees and vines. This transition marks a longer-term land-use commitment and higher investment, but one that also typically yields higher economic returns. If trends continue, this may have ramifications for the conservation values involved in habitat management, and water management. Permanent high value crops may not be eligible for federal insurance and will cost more in recovery.

Housing, Workforce and Education

Median household income should be monitored over time alongside unemployment and population changes. This will help to identify income and job polarization, and any sources of downward pressure or demographic changes that may drive increasing wage and income disparities in the region.

Housing is relatively affordable, but also in high demand. Delta housing prices have increased to 75% of the state median prices, up from 64% in the previous study period. Homeownership rates in both zones and in the overall Delta were higher than those in the state of California as a whole. The Delta homeowner vacancy rate decreased from 1.3% in 2011-2015 to 0.89% in 2016 to 2021, roughly comparable to the state average of 0.7%. Growth in the housing market required to meet state housing mandates will need to be monitored, with continued attention to the potential for direct threats such as farmland conversion or indirect threats due to lack of adequate buffers and increasing land costs.

Changes in types of agricultural production will also change the seasonal demands on the agricultural workforce, potentially making way for longer seasons of employment and the need for permanent housing options near work sites.

One-third of the total Delta population is under the age of 19, presenting an incredible future workforce opportunity if people can be trained and retained in the Delta.

The Delta's high-quality schools could also drive future housing demand with better support. Delta schools were well-funded on a per-pupil basis in 2015, compared with the state average, but revenue per pupil dropped sharply in comparison with statewide averages in the 2018-2019 school year, which will demand attention by district and community leaders and residents. At the same time, despite relatively high rates of children living in poverty, Delta high schools have higher rates of high school graduation than the statewide average.

Road Conditions

While the majority (61.4%) of Delta highways surveyed are in good condition, the percentage considered distressed and in need of repairs has increased. Future reports can add to this understanding as new data becomes available on roads, docks, energy infrastructure, campsites and park visitation.

POPULATION

iStock/Sabrina Bracher

A large youth population and improving education levels: both a challenge and an opportunity for the Delta region

- The percentages of people under age 19 and age 75 and over have remained stable. In 2021, youth under 19 were just under one-third of the population, while the percentage of individuals 75 and older accounted for about 5% of the population, as they did in 2015. Fully one-third of the population was between the ages of 25 and 54, in the prime of working years.
- The number of children in poverty decreased from 20% in 2015 to under 15% in 2021.
- The percentage of adult Delta residents that have at least a high school diploma (or equivalent) increased from 83.8% in 2015 to 88.7% in 2021.
- Similarly, the percentage of the Delta population with less than a 9th-grade level of education has dropped to just over 4% compared with 8.4% in 2015.

POPULATION BY AGE GROUPS

Definition

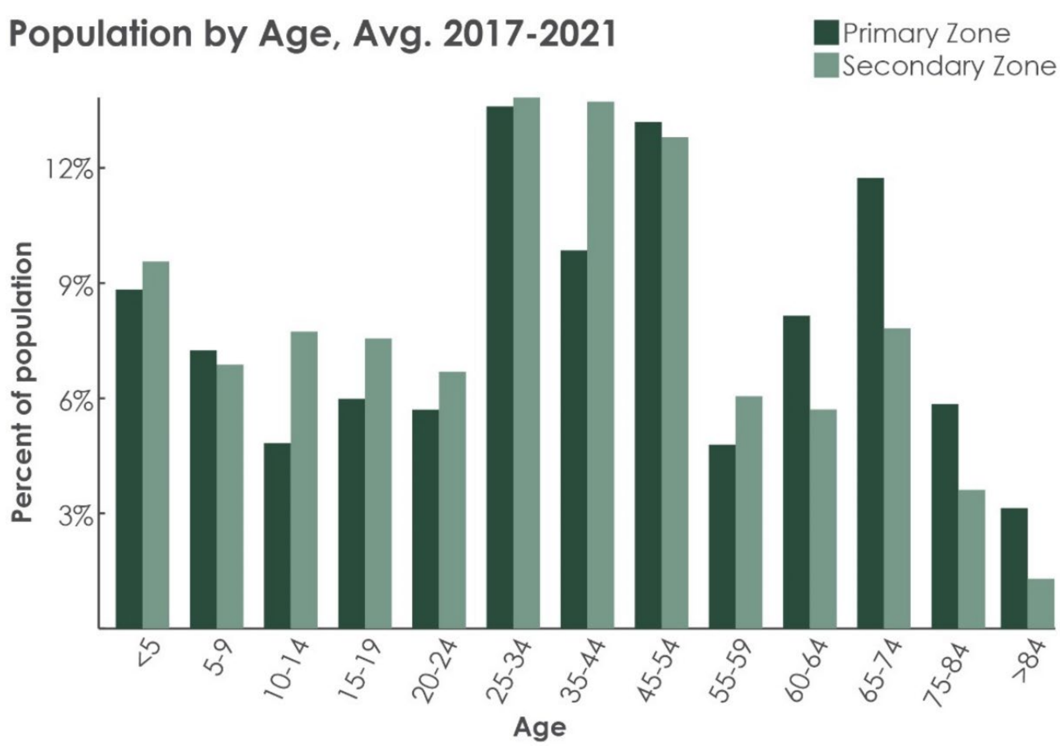
This indicator shows the breakdown of the population residing in a region and is gathered by census tract. The indicator includes the following age groups: individuals under 5 years of age, individuals 5-17 years of age, individuals 18-24 years of age, individuals 25-44 years of age, individuals 45-49 years of age, and those 65 and older.

Why is this indicator important?

This indicator gives a snapshot of the composition of the Delta population. It allows for an understanding of what portion of the population is of working age, the size of the aging community, how many young people are being raised in the region, and how well they are being prepared to enter the workforce.

How is the Delta doing?

American Community Survey five-year population estimates for the period 2017-2021 show 689,032 individuals residing in the Delta, compared with a population of 582,884 2011-2015. The Secondary Zone had 675,388 residents, compared with 573,483 reported in the previous SIR. The Primary Zone had 13,644 residents, a slight increase over the population of 13,343 2011-2015.



PRIMARY AND SECONDARY LEVEL EDUCATION COMPLETION

Definition

The secondary level education rate reports the percentage of residents aged 25 and older in an area who have completed a high school or equivalent level of education. The primary education completion rate reports the percentage of residents aged 25 and older in an area who have completed up to a primary (elementary) education level of schooling. The information is gathered from the American Community Survey and is collected annually.

Why is this indicator important?

These indicators offer insight into the human capital available in a local labor market. Completion of a high school education is often considered to be linked to higher rates of labor market participation and increased labor market competitiveness. In contrast, the completion of primary/elementary education alone often correlates with holding low-wage and low-skill jobs.

How is the Delta doing?

For the five-year period from 2017 to 2021, an average of 88.7% of Delta residents aged 25 and older had at least a high school education, compared with 83.8% from 2011 to 2015. The high school completion rate in the Primary Zone was 81.6%, compared with 78.6% from 2011 to 2015, and the Secondary Zone was 89.2%, compared with 83.8% from 2011 to 2015. Less than 1% of Delta residents report having only an elementary school level of education, compared with 8.4% from 2011 to 2015. The rate of residents having less than a 9th grade education level was 4.4% in the Primary Zone and 4.3% in the Secondary Zone, compared with 10.4% and 8.3% for Primary and Secondary zones respectively from 2011 to 2015.

SCHOOL DISTRICT POVERTY

Definition

The school district poverty rate is calculated as the number of children ages 5 to 17 who live in families with income below the poverty line as a share of the total number of children ages 5 to 17 in a school district. School district poverty rates are used to determine Title 1 status in California (qualifying for free and reduced-cost meals and other programs). This data comes from Small Area Income and Poverty Estimates produced by the school districts annually.

Why is this indicator important?

Levels of school district poverty are important indicators of socioeconomic opportunity and educational access. School districts with a higher proportion of low-income students are eligible to receive increased federal funding, as well as provide for additional educational and well-being needs of students.

Tracking levels of school district poverty over the long term can help inform educational policy planning and initiatives necessary to support changing economic conditions that may affect the education of young people in the region.

How is the Delta doing?

In 2021, the school district poverty rate for districts in the Delta was 14.3%, decreasing from 20.5% in 2015. This compares favorably with the statewide child poverty rate for 2021 which also dropped, from 19.88% in 2015 to 15.4%.

JOBS AND THE ECONOMY

A restaurant in Clarksburg (Gordon Lazzarone for the Delta Protection Commission)

The Delta's economy has continued to strengthen

- Unemployment rates fell in both the Primary (7.1%) and Secondary zones (7%), a good sign of improving economic health. The Secondary Zone unemployment rate showed the most improvement over the 2011-2015 report period, dropping from 12.4%.
- Delta median household income at $86,176 is higher than the state median ($84,097). It is also substantially higher than other agriculture-based regions such as the San Joaquin Valley ($62,272).
- Delta residents travel an average of 37 minutes to get to work, which is longer than the commute time for the average Californian (30 minutes). However, it has not increased significantly from the 35-minute average commute time during the 2011-2015 report period.

UNEMPLOYMENT RATE

Definition

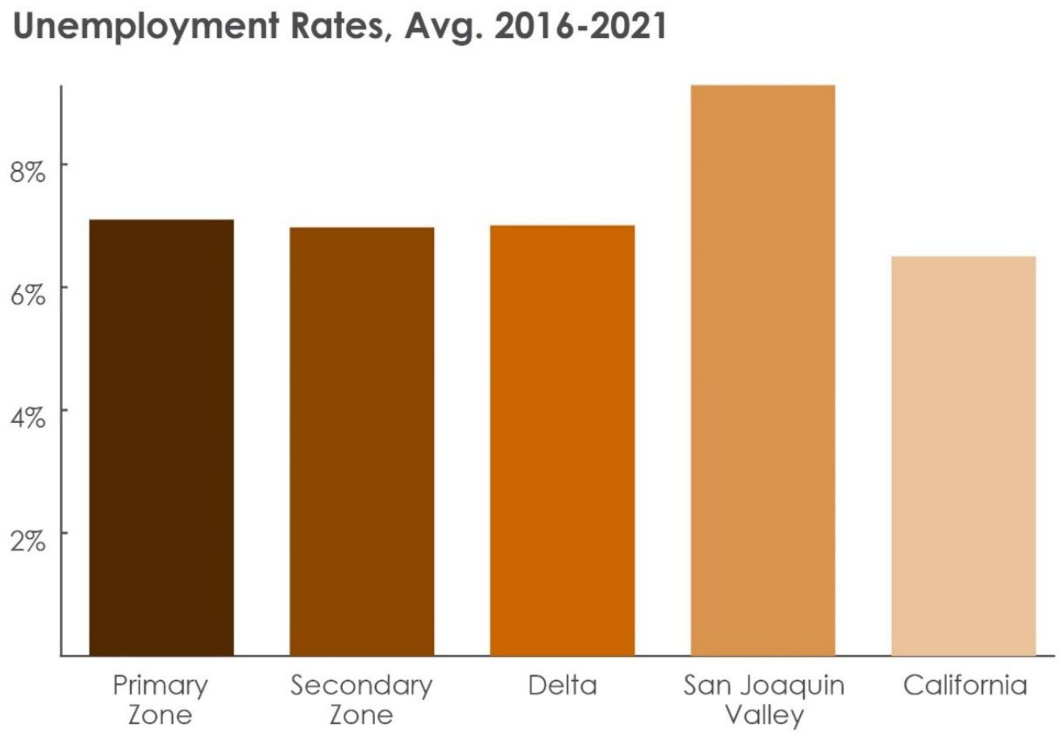
The number of employed individuals and the size of the labor force are estimated by a survey of households conducted by the US Census Bureau and updated annually. Unemployment rates measure the percentage of individuals in an area older than 16 who are not employed or self-employed on a full- or part-time basis despite actively seeking work.

Why is this indicator important?

Unemployment rates reveal the economic health of a region. Lowered unemployment rates, such as those in the Delta, show that saturation in the job market has decreased, so individuals who are seeking work are more likely to be able to find employment. Lowered unemployment rates also indicate less competition for existing jobs, which drives wages in the region up. Decreased unemployment rates correlate with higher household incomes, which can be associated with an increased sense of well-being in the population.

How is the Delta doing?

The average unemployment rate in the Delta from 2016 to 2021 was 7%, nearly half the unemployment rate of the previous 5-year period. This rate was slightly higher for the Primary Zone (7.1%) compared with the Secondary Zone (7%). Although somewhat higher than the state average (6.5%) for the same period, it is lower than other agriculture-based regions such as the San Joaquin Valley (9.3%).



MEDIAN HOUSEHOLD INCOME

Definition

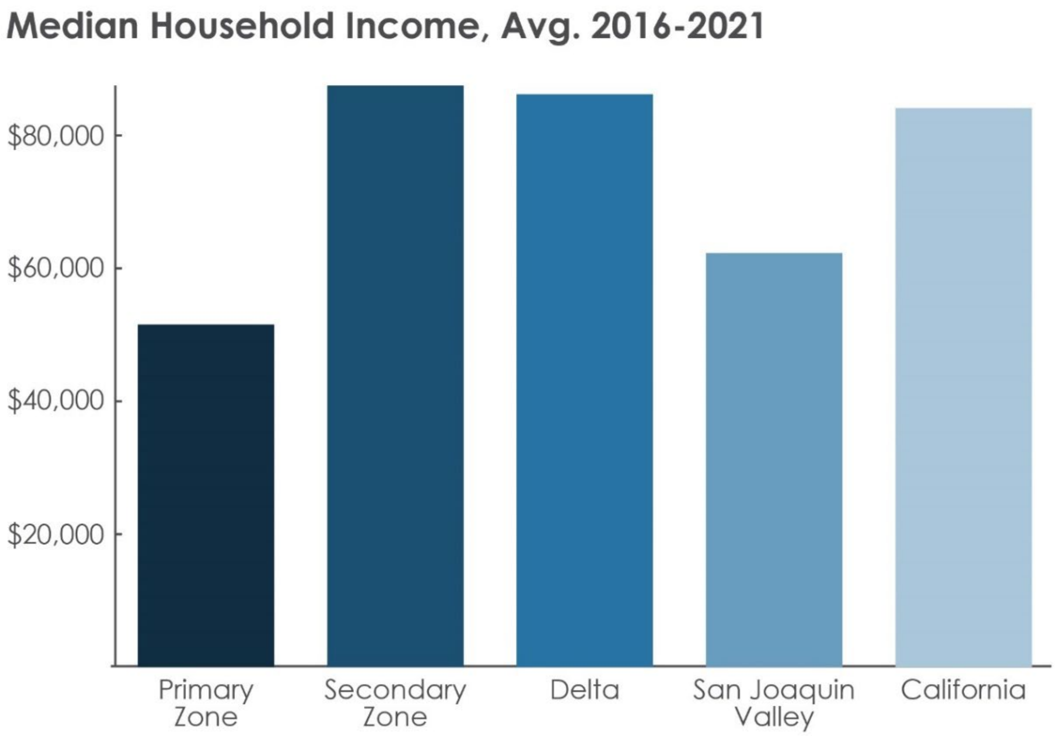
A household is defined as all people who occupy a housing unit. Income refers to all wages from a household, which includes dividends and interest accrued by all heads of household. Median household income represents the middle number of all household incomes in an area. Thus, the number divides all household incomes in an area into two equal groups, with one group having incomes above this amount and the other group having incomes below.

Why is this indicator important?

Median household income represents the region's prosperity. The median is used as opposed to the average household income or any other indicator because it is less influenced by outliers such as small, highly wealthy households. Thus, the median is taken to indicate the region's standard of living.

How is the Delta doing?

During 2016-2021, the median household income in the Delta was $86,176. This is somewhat higher than that in the state of California ($84,097). The median household income in the Secondary Zone ($87,497) was higher than in the Primary Zone ($51,538).



MEDIAN INDIVIDUAL EARNINGS

Definition

Individual earnings refer to all income earned by an individual over the time period. Median individual earnings represents the middle number of all individual earnings in an area. Thus, the number divides all individual earnings in half, with half of the group having earnings above this amount and the other half having earnings below. This differs from household incomes because it does not account for the incomes of all members of the household. Data was obtained from the American Community Survey and is updated annually.

Why is this indicator important?

Median individual earnings reflects the socioeconomic status of an area. The median is used as opposed to the average of individual earnings or any other indicator because it is less influenced by outliers such as a small number of highly wealthy individuals.

How is the Delta doing?

Between 2016 and 2021, the median individual earnings in the Delta was $42,071. This number is slightly higher than the median individual earnings in the state of California over the same period, which was $40,901. Median individual earnings were higher in the Secondary Zone ($42,388) compared with the Primary Zone ($34,774).

AVERAGE COMMUTE TIME

Definition

The average commute time represents the number of minutes an individual spends traveling to work. This number includes time spent waiting for public transportation and carpooling. It also includes time spent traveling between county boundaries. Data was obtained from the American Community Survey and is updated annually.

Why is this indicator important?

This indicator reveals not only the commute times for those who travel within the Delta for work, but also the times for residents who travel outside the region. The amount of time it takes to get to work often affects an individual's ability to find employment.

How is the Delta doing?

On average, Delta residents commute 37 minutes to work. The average commute time is slightly lower in the Primary Zone (32 minutes) compared with the Secondary Zone (37 minutes). Both are longer than the commute time for the average California resident (30 minutes). The average commute time in the Primary Zone increased notably over the previous study period of 2011-2015, which was found to be 24.7 minutes.[5]

[5] This reflects a corrected analysis from the previous report average commute time of 11 minutes in the Primary Zone.

WORKING LANDS

A safflower field in the Delta (Stacy Hayden, Delta Protection Commission)

Agriculture is stable but faces challenges, mirroring broader trends in California

- The predominant land use in the Delta continues to be farming, with land in production constituting 81% and 51% of the Primary and Secondary zones in 2021, respectively. This is an improvement over 2015 especially in the Primary zone where land in production was 70%, but also slightly better than the Secondary zone at 50%.
- Most urban development occurs in the Secondary Zone in accordance with state policy objectives. In 2021, developed land made up about 3% of the Primary Zone and 35% of the Secondary Zone. This is compared with 3% and 34% for Primary and Secondary zones respectively in 2015.
- Continuing trends in the previous report period of 2011-2015, more of the corn crop continues to be converted to rice and almonds.
- Farming continues to be the primary land use within the Primary Zone; the Secondary Zone is facing greater urban development. Other non-urban land uses also remain stable, although we see less fallow/idle land in both the Primary and Secondary zones.

PRODUCTION BY LAND USE

Definition

Agricultural land use refers to the number of acres devoted to particular crops. Data are derived from the National Agricultural Statistics Service CropScape satellite imagery, which includes over 300 distinct land-covers in the Delta. Satellite imagery is collected and interpreted annually by the United States Department of Agriculture. Since CropScape has data through 2022, we examine the years from 2018 to 2022. CropScape also allows users to select a specific geography for analysis, thus allowing the Primary Zone and Secondary Zone boundaries to be utilized.

Why is this indicator important?

Knowing the largest crops by acreage in the Delta can help predict which crop services and supporting industries will be needed in future years based on the existing agricultural base.

How is the Delta doing?

A total of 350,000 acres were in active production in the Primary Zone in 2022. In the Primary Zone, the top five crops by total land-cover in 2022 were alfalfa (19%, 68,000 acres), corn (13%, 216,000 acres), grapes (9%, 32,000 acres), clover/wildflowers (8%, 31,000 acres), and winter wheat (8%, 28,000 acres). A diverse array of 53 other crop types make up the remaining 41%, accounting for 150,000 acres.

A total of 130,000 acres were in active production in the Secondary Zone. In the Secondary Zone, the top five agricultural land uses by total land cover are alfalfa (20%, 25,000 acres), almonds (19%, 23,000 acres), winter wheat (9%, 11,000 acres), other hay (6%, 8,000 acres), and grapes (6%, 7,000 acres). Fifty-four other crops make up the remaining 36%, accounting for 44,186 acres.

TRENDS IN PRODUCTION

Definition

The indicator focuses on changes in agricultural land cover by acreage. The data is derived from CropScape satellite imagery. Here, we compare 2018 and 2022 land coverage.

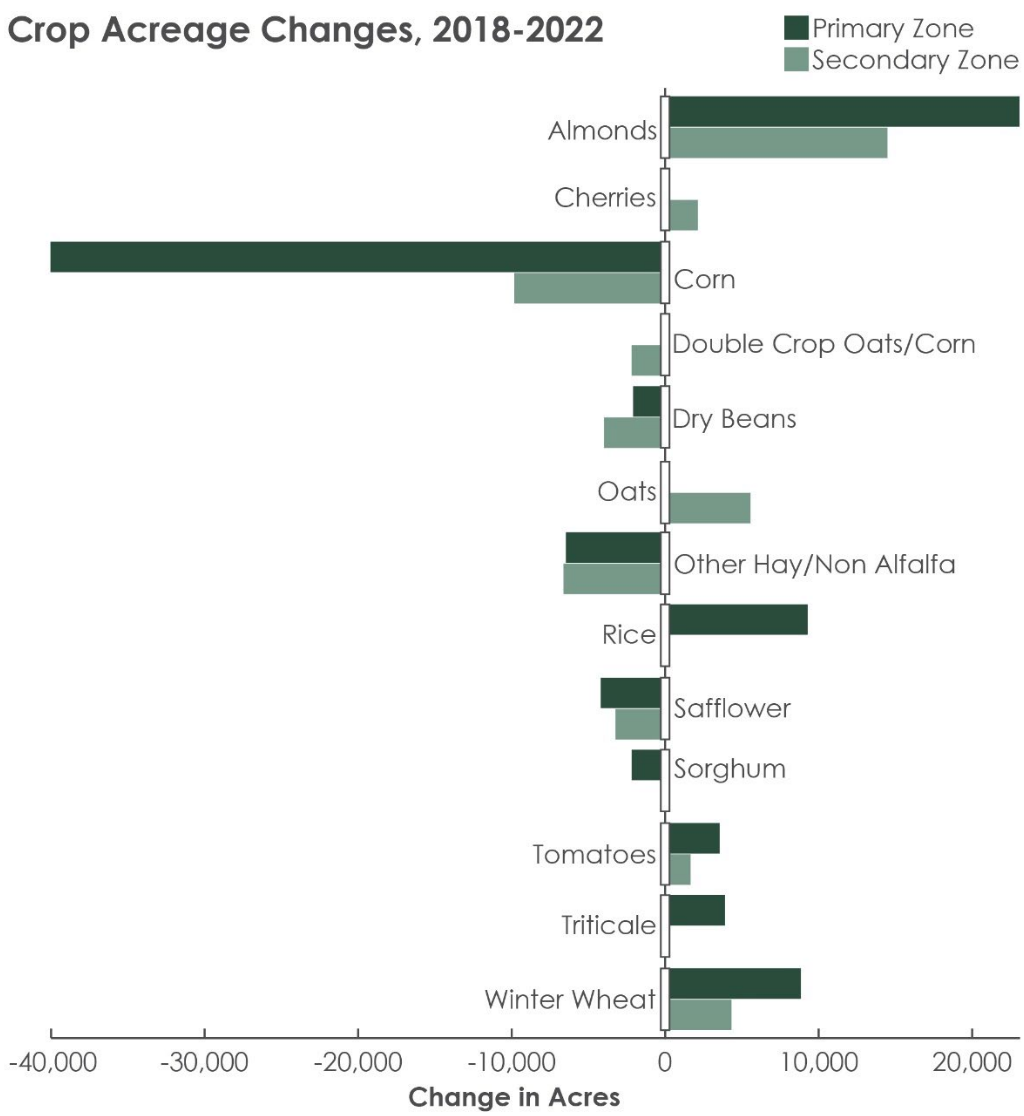
Why is this indicator important?

Tracking the dynamics of specific crops by land cover gives an understanding of production trends. Because different crop types have different water requirements, conservation values, and long-term socioeconomic impacts, such information can help identify suitable policies for environmental protection, water planning, crop insurance, and agricultural economic supports through processing and marketing infrastructure.

How is the Delta doing?

The Primary Zone has seen an increase in land in production from 2018 to 2022, rising by more than 23,000 acres over the previous report period (from 333,000 to 356,000 acres). While corn remains one of the largest crops by acreage, the amount of corn being produced by acre has declined by 40,000 acres from 2018 to 2022. The decrease in corn is consistent with the way crop production was trending in 2015 for the Primary Zone.

In the Secondary Zone, we see a similar pattern, with the largest increase in crop production going to almonds (more than 14,000-acre increase) and the largest decrease in corn (over 9,000-acre decrease). The decrease in corn is consistent with the way crop production was trending in 2015 for the Secondary Zone.



LAND CONVERSION

Definitions

Farmland conversion measures the amount of land in crops or fallowed that is converted to low-, medium- and high-density developed land. “Developed land” generally means land with at least 20% impermeable surfaces (i.e. asphalt or a building). It is worth noting that some “developed land” includes features that would not generally be viewed as urban land, such as rural roads, farm and ranch headquarters, and equipment yards.

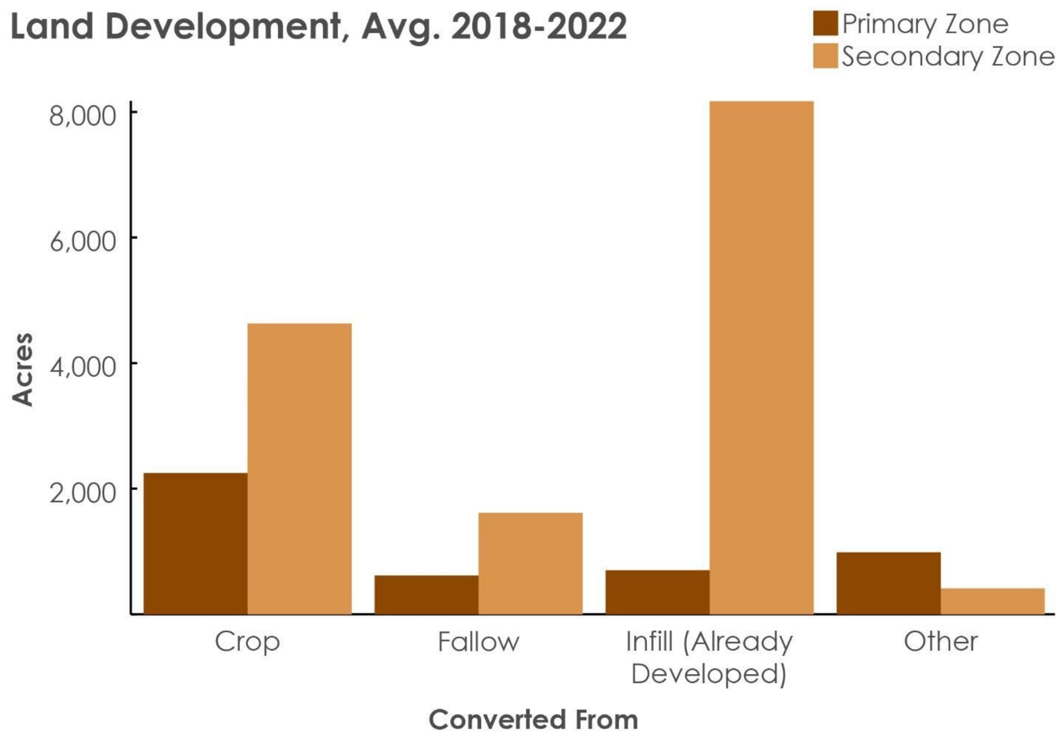
Farmland conversion is calculated with National Agricultural Statistics Service (NASS) data specific to the Primary and Secondary zones with 30-meter resolution. A transition in land-use category from farmland to fallow/idle cropland or a NASS category called "developed/open space" is not calculated as this land frequently reverts back to production. As defined by NASS, "infill" is the re-categorization of “developed land” based on an increase in impervious surface area coverage. Conversion of wetlands, forest, and barren lands to urban development constitutes the "other" category.

Why is this indicator important?

Conversion of farmland into “developed land” indicates social and economic change that may present significant challenges to the agricultural sector of a region.

How is the Delta doing?

Following the patterns seen in 2015, the majority of land conversion to developed land for the years 2018 to 2022 was due to the development of infill.



LAND COVER

Definitions

This indicator tracks acreage of farmland, developed land, and other land use categories. The data is derived from CropScape satellite imagery and is updated annually. Developed land constitutes areas with greater than 20% impervious surface. Farmland is land that is actively devoted to crop production. "Other" captures all other categories of land that are not developed or farmland, and includes wetlands, barren lands, meadows, and forested areas.

Why is this indicator important?

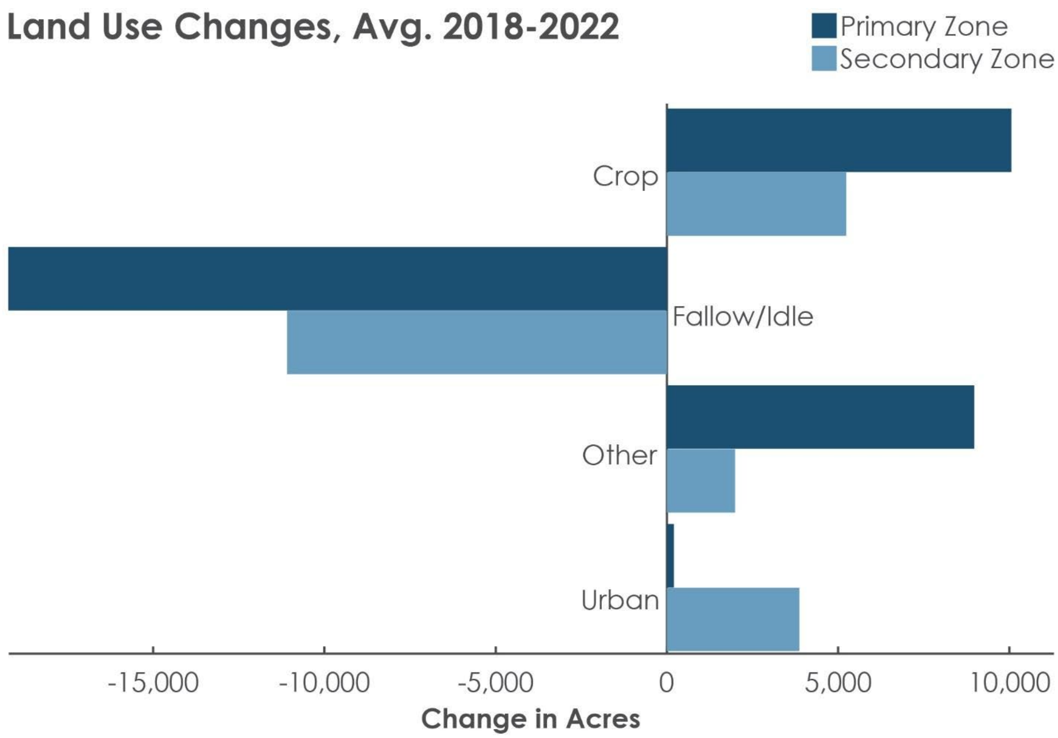
The Delta is largely an agricultural region that has prioritized land conservation efforts. Knowing how much land is devoted to agricultural and urban uses helps monitor policy priorities to support active farming communities and wildlife habitat.

How is the Delta doing?

Similar to 2015, we see a slight increase in land in production. Land devoted to active production accounted for 73% (350,000 acres) of the Primary Zone in 2022. From 2018 to 2022, approximately 10,000 acres entered crop production, partly explained by a decrease in fallow/idle farmland (down 20,000 acres from 2018 to 2022). Idle or fallow land made up 4% (22,000 acres) of the land cover in the Primary Zone in 2022. Other land uses constitute waterways, barren land, forests, and wetlands, accounting for 95,000 acres in 2022 (19%). In 2022, developed land made up 3% of the Primary Zone (14,000 acres).

Land devoted to active production accounted for 48% (120,000 acres) of the Secondary Zone in 2022. From 2018 to 2022, an additional 5,000 acres were devoted to crop production, partly explained by a decrease in fallow/idle farmland (down 11,000 acres from 2018 to 2022). An additional 4,000 acres was converted to urban development from other land uses in the Secondary Zone.

The slight increase in crop production and urban development for both the Primary and Secondary zones mirrors the patterns from 2011 to 2015.



FISHING AND HUNTING LICENSES

Definition

This indicator is the total number of fishing and hunting licenses sold in the Delta. This data from the California Department of Fish and Wildlife License Statistics is updated every year. Data is collected by ZIP code. Some ZIP codes fall into both the Primary and Secondary zones of the Delta. Only data specific to the Primary Zone is included with the Primary Zone data. Data that straddles the Secondary Zone and areas outside the Delta are omitted. Therefore, the numbers presented are an underestimation of the number of licenses sold in the region.

Why is this indicator important?

Sport fishing and hunting are popular activities for tourists as well as residents of the Delta. They are also a strong component of the area's tourism economy. Increases in fishing and hunting licenses can also serve as proxies for environmental quality, where good quality is indicated by the capacity for more fish and game to be supported in the region.

How is the Delta doing?

In 2022, hunting licenses sold in the Delta accounted for 8% of hunting licenses sold in the state. This is a decrease from 2015, when hunting licenses sold in the Delta accounted for 12%. Similarly, sales of fishing licenses in the Delta accounted for 8% of the total licenses in the state of California. Most fishing licenses were sold in the Secondary Zone. Not all licenses are sold to Delta residents; many may be sold to visitors. And not all licenses sold are necessarily used in the Delta.

Hunting and Fishing License Sales in the Delta in 2022

Location	Hunting	Fishing
Primary Zone	16,289	59,125
Secondary Zone	31,115	103,449
Combined % of total in CA	8%	8%

STATE PARK USE DATA

Definition

Park use is the total number of paid and unpaid day and overnight visitors that utilize state parks in the Delta. This data comes from the California State Park System Statistical Report, which is updated every year[6]. While there are three state park facilities in the Delta (Brannan Island State Recreation Area, Delta Meadows Park Property and Franks Tract State Recreation Area), only data from Delta Meadows and Brannan Island is reported here.

Why is this indicator important?

The number of visitors to the Delta state parks is an indicator of the region's tourism value. However, higher rates of visitor traffic can also have an impact on road conditions and environmental quality.

How is the Delta doing?

In 2020, the most recent year to report visitation at both parks, Delta Meadows recorded 2,518 visitors. This averages out to about 50 visitors per week. Brannan Island reported 32,790 visitors, averaging about 630 visitors per week. This decrease from the 2015

[6] Statistical Report 2021/22 Fiscal Year. (2024) California State Parks.

visitation (6,884 at Delta Meadows and 52,991 Brannan Island) potentially reflected early COVID-19 pandemic effects. In the 2021-2022 Statistical Report, visitation at Brannan Island had increased to 39,926 but no data was available for Delta Meadows.

HOUSING AND ROADS

A Delta road (Stacy Hayden/Delta Protection Commission)

Housing in the Delta remains affordable but increasingly in demand

- Between 2016 and 2021, median home values in the Delta increased 75% from $247,297 to $433,950, and increased from 64% to 78% of the median home price in the state of California.
- Higher rates of home ownership compared with previous years and decreased overcrowding indicate a stable and affordable housing market.
- There is a high demand for home ownership, as indicated by lowered homeowner vacancy rates. This also indicates the competitiveness of the housing market.
- Due to the increasing population of the Delta, the region may need to focus on additional improvements to infrastructure, especially roads.

MEDIAN HOME VALUE

Definition

Home value represents how much money an individual's house would sell for if it were on the market. Median home value refers to the middle number of all home values in an area. Thus, the number divides all median home values in half, with half of the group having home values above this amount and the other half having home values below.

Why is this indicator important?

Median home value serves as an indicator of how affordable houses are in a region. Home values impact the number of people who are able to move into a region, as high values may prevent those who are seeking a new home from finding housing in their price range. Home values also influence the extent of construction jobs and overall activity in the region. They can influence consumer spending and play a critical role in shaping household wealth. The median is used, as opposed to the average home value or any other indicator, because it is less influenced by outliers, such as a small number of highly expensive homes.

How is the Delta doing?

From 2016 to 2021, the median home value in the Delta was $433,950. The median home value in the Primary Zone ($418,300) was slightly lower than that of the Secondary Zone ($433,950). These values are all lower than the median home value of the state of California ($573,200), which indicates that the Delta boasts a relatively affordable housing market. However, it is important to note that median home values have significantly increased compared with the previous five-year period (2011-2015), when the median home value in the Delta was $247,297 and the median in California was $385,500.

HOME OWNERSHIP

Definition

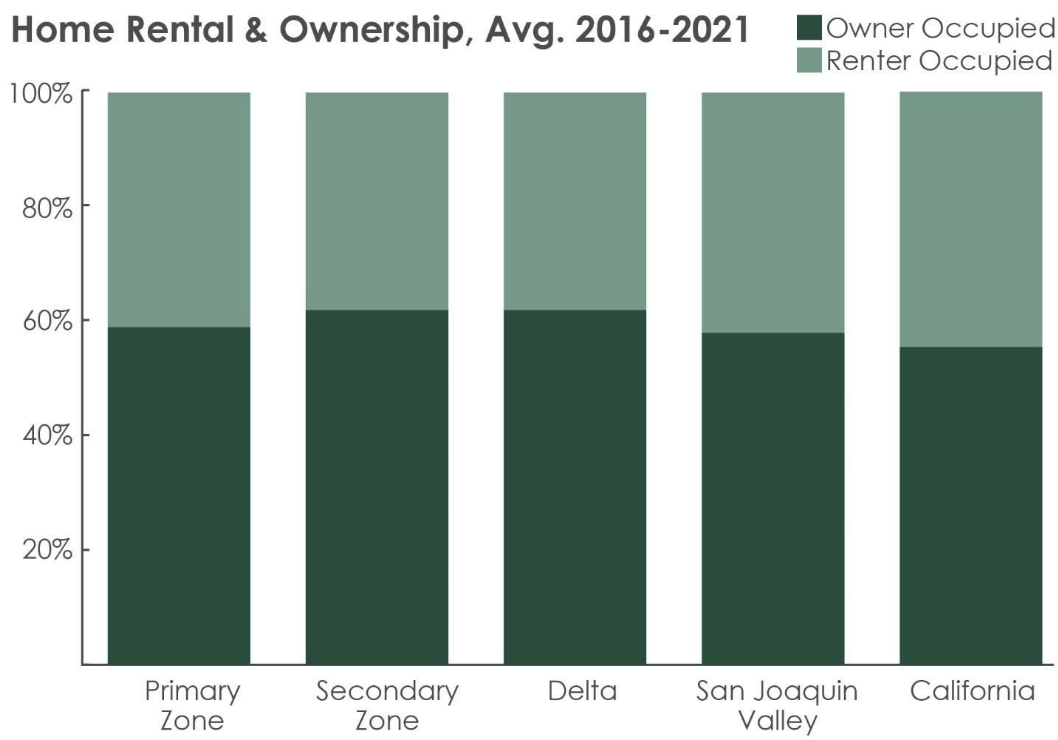
The home ownership rate refers to the percentage of housing units that are occupied by the owner or co-owners. Housing units that are rented or occupied without rental payment are categorized as renter-occupied. Data on home ownership rates can be obtained from the American Community Survey, which is updated annually.

Why is this indicator important?

Home rental and ownership rates suggest the housing preferences of the region. They can also indicate the stability of the housing market, the financial capability of the population, and how well the housing market has recovered from a recession. High homeownership rates allude to a population that is financially stable and invested in their community.

How is the Delta doing?

Over the time period 2016-2021, an average of 61.9% of homes in the Delta were owner-occupied and 38.1% were renter-occupied. Homeownership rates were lower in the Primary Zone (58.7%) than in the Secondary Zone (62%). Still, homeownership rates in both zones and in the overall Delta were higher than those in the state of California as a whole (55.5%), and the renter-occupied rates were lower (44.5%). Compared with another agriculture-based region, the San Joaquin Valley, the Delta also had higher homeownership rates (57.7%) and lower renter-occupied rates (42.3%).



HOMEOWNER AND RENTAL VACANCY RATES

Definition

Homeowner vacancy rates represent the proportion of homes in a region that are listed for sale and/or are vacant. Rental vacancy rates represent the proportion of homes in a region that are listed for rent and/or are vacant. Data on homeowner and rental vacancy rates can be obtained from the American Community Survey, which is updated annually.

Why is this indicator important?

Vacancy rates reveal the stability of the housing market. High vacancy rates mean that an excess supply of homes or rental properties are available, which usually indicates a weaker housing market. In contrast, low vacancy rates suggest a high-demand housing market. A 5-8% homeowner and rental vacancy rate is generally considered healthy.

How is the Delta doing?

From 2016 to 2021, the homeowner vacancy rate in the Delta was 0.89%. This rate was lower in the Primary Zone (0.08%) than in the Secondary Zone (0.92%). In 2021 the state average homeowner vacancy rate was 0.7%. The rental vacancy rate in the Delta was 3%. This is comparable to the rental vacancy rate of California as a whole (3.9%). These low rates are indicative of a high-demand housing market.

OVERCROWDED HOUSING

Definition

Overcrowded housing is defined as more than one occupant per room. This is often calculated by dividing the number of total residents in a house by the total number of rooms. Data on overcrowded housing rates can be obtained from the American Community Survey, which is updated annually.

Why is this indicator important?

High overcrowded housing rates can indicate that the housing market in the region is too expensive or that there is a limited supply of housing. Crowded housing affects the quality of life of children and can lead to increased stress and health issues.

How is the Delta doing?

From 2016 to 2021, the overcrowding rate in the Delta was 3.5%. This was lower in the Primary Zone (3.3%) compared with the Secondary Zone (3.6%). However, rates for both zones and the Delta overall were slightly lower than the overcrowding rate for the whole of California (4.2%).

ROAD PAVEMENT CONDITIONS

Definition

Road pavement condition reports indicate the quality of the interstates, freeways, and highways. Road conditions are classified in one of three states of repair. State 1 (green) indicates there is no distress evident on the pavement on the roadway. Maintenance projects undertaken in State 1 are often preventive. State 2 (yellow) indicates minor surface distress evident on the pavement on the roadway. Maintenance projects undertaken on these roads are corrective. State 3 (red) indicates that pavements show minor or major structural distress. Maintenance projects undertaken on these roads are major rehabilitation and/or replacement of the pavement. The California Department of Transportation (Caltrans) produces these condition reports. The data is collected by the Caltrans Office of Pavement Management and updated annually.

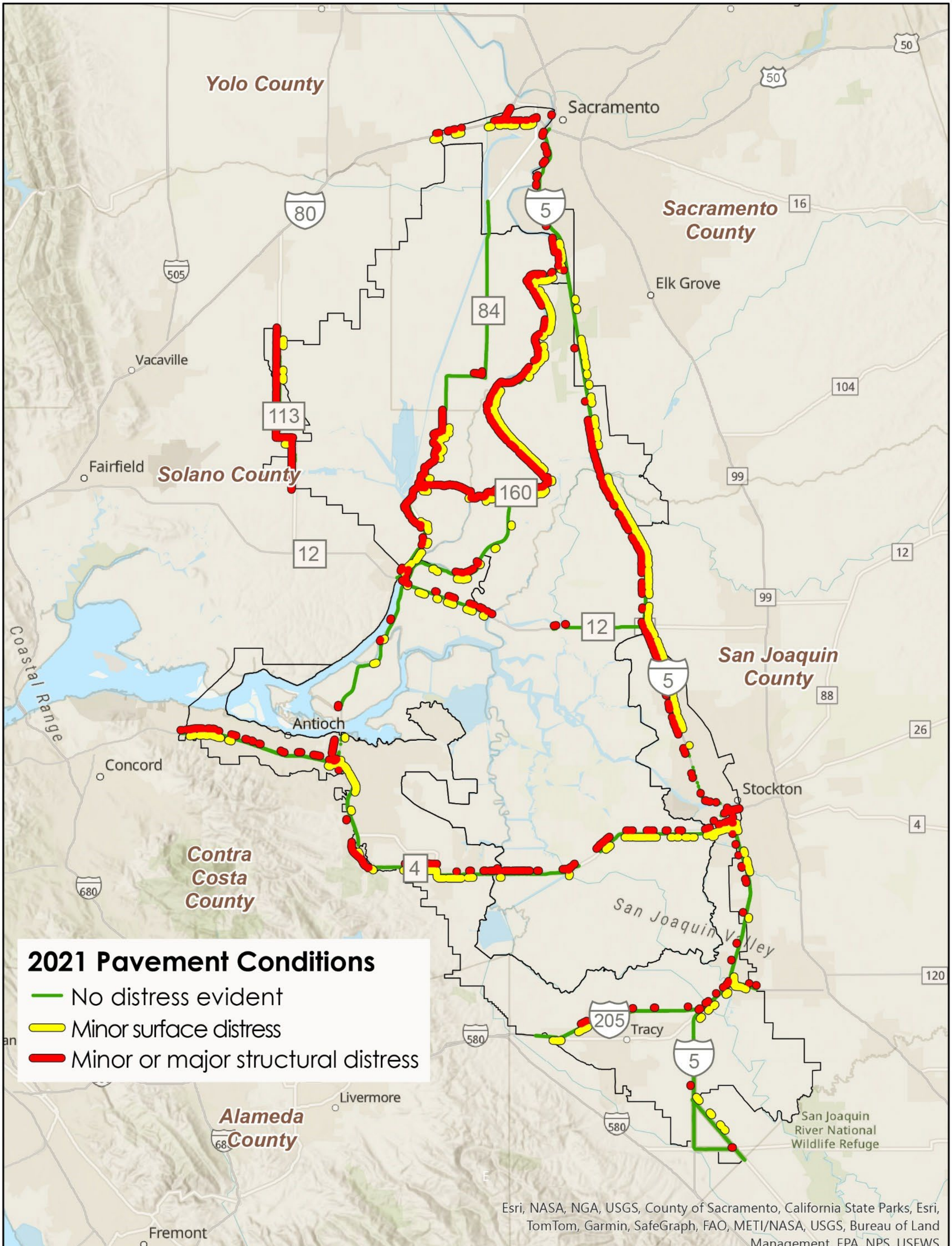
Why is this indicator important?

Road pavement conditions affect both tourism in the Delta and the time its residents spend traveling to and from work. Keeping track of road pavement conditions allows us to monitor the strength of the Delta's infrastructure.

How is the Delta doing?

In 2021, a total of 459.3 lane miles were assessed by Caltrans, as shown below and in the map on the next page. The proportion of lane miles that were in State 3 has slightly increased since 2016 (21.4%), showing that the road infrastructure in the Delta has generally worsened over the five-year time period.

2021 Pavement Condition Classification	Total Lane Miles	% Total
State 1: No distress evident	281.8	61.4
State 2: Minor surface distress evident	69.9	15.2
State 3: Minor or major structural distress	107.6	23.4



Yolo County
Sacramento
Sacramento County
Elk Grove
Vacaville
Fairfield
Solano County
Concord
Antioch
Contra Costa County
Stockton
San Joaquin County
San Joaquin Valley
Tracy
Livermore
Alameda County
Fremont
Coastal Range
San Joaquin River National Wildlife Refuge
80
505
5
50
16
84
113
160
104
99
12
88
26
4
680
205
580
120
68
2021 Pavement Conditions
No distress evident
Minor surface distress
Minor or major structural distress
Esri, NASA, NGA, USGS, County of Sacramento, California State Parks, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS

EDUCATION

iStock/Ridofranz

Delta schools funding is lagging compared with other schools in the state

- In the 2018-2019 school year, the average cost-adjusted revenue per pupil in the Delta was $9,151 compared with $10,813 statewide. While this has increased 12% from $8,160 in 2014, the statewide number has increased 59% (increasing to $10,813 from $6,781).
- Similar to 2015, the majority of students in the Delta identify as Hispanic (45%) and non-Hispanic white (21%).
- High school graduation rates in 2021 were 10% higher in the Delta than graduation rates for the state of California as a whole.

ENROLLMENT CHARACTERISTICS

Definition

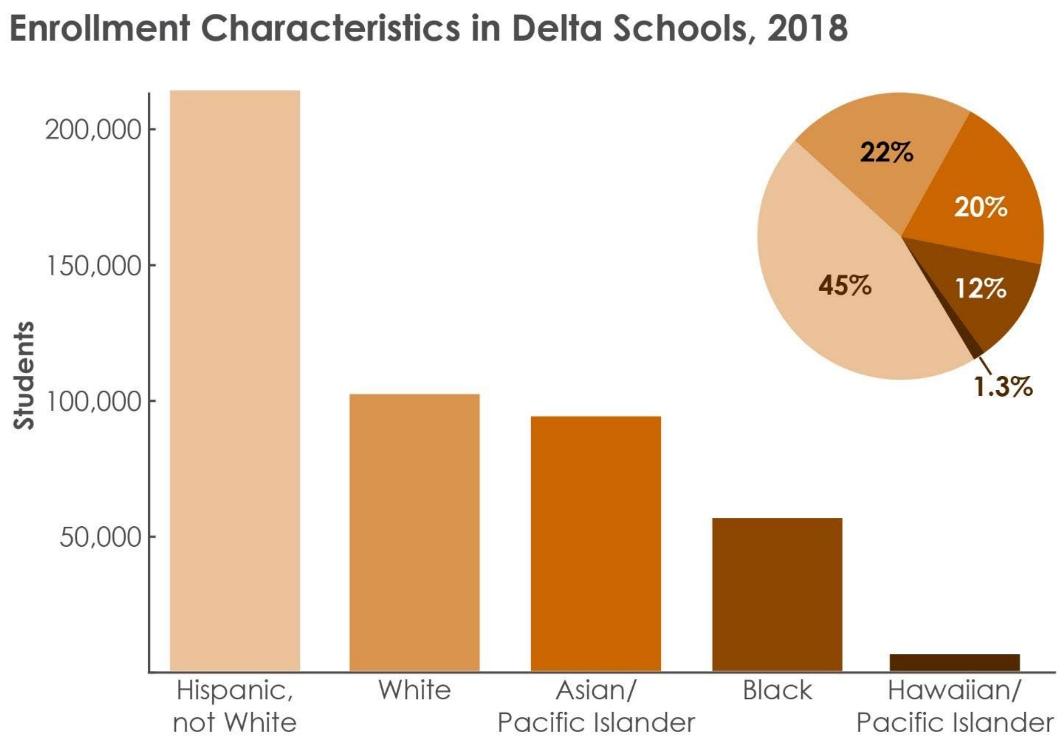
Enrollment characteristics provide information on the race and ethnicity of the school-aged population. Such characteristics include the size and racial/ethnic composition of the population of enrolled students. The data comes from EdBuild and is updated every school year.

Why is this indicator important?

Knowing changing trends in these measures helps forecast demand for programs that serve non-English speaking students such as English as a Second Language.

How is the Delta doing?

The two largest student populations are Hispanic youth (45%) and non-Hispanic white (21%).



COST-ADJUSTED REVENUES PER PUPIL

Definition

The cost-adjusted revenues per pupil measures the amount of revenue schools receive per pupil who attend schools in the district. The data comes from EdBuild and is updated every school year. Data is not available for Liberty Union High School District, located in northeastern Contra Costa County. Because of the differences in jurisdictional boundaries in relation to school districts, it is not possible to break data into primary and Secondary Zones. The River Delta Unified School District has a large coverage in the Primary Zone.

Why is this indicator important?

The cost-adjusted revenues per pupil are a measure of school district funding available in an area. It allows for an understanding of how much a school district has available to spend on necessary resources. Revenues spent per pupil can also shed light on local economic conditions, such as how well-funded schools are in relation to perceived school quality. In turn, school quality often buttresses robust real estate markets as residents value high quality school districts and pay premium housing costs to gain entry.

How is the Delta doing?

In the 2018-2019 school year, the average cost-adjusted revenue per pupil in the Delta was $9,151 compared to $10,813 per student statewide. This is a 12% increase from 2014, when the Delta's $8,160 per pupil was higher than the statewide amount of $6,781. However, the Delta slipped behind the statewide revenue per pupil, which increased by 59% (from $6,781 to $10,813) during the same period.

HIGH SCHOOL GRADUATION RATE

Definition

The four-year graduation rate is the percentage of the number of students who graduate from high school in four years with a regular high school diploma divided by the number of students who form the adjusted cohort for the graduating class. This indicator reports this percentage for those students who attend Delta area high schools (including alternative education high schools).

Why is this indicator important?

High school graduation rates are an important indicator of school quality in the region. It is also an indicator of overall socioeconomic opportunity for young people in a regional economy. Higher rates of high school completion are generally equated with a more educated and competitive workforce, a more knowledgeable and politically engaged citizenry, and higher levels of community health and well-being.

How is the Delta doing?

In 2021, 83% of seniors in California graduated with a high school diploma. There are two high schools that serve the Delta Primary Zone; Delta High School and Rio Vista High School. Their graduation rate is 93%, 10 percentage points higher than the statewide total of 83%.

COMMUNITY RESOURCES

Jean Harvie Community Center in Walnut Grove

There is a disparity in access to community resources between the Primary and Secondary zones of the Delta

- In 2020, 96.7% of community anchor institutions were located in the Secondary Zone, compared with only 3.3% in the Primary Zone.
- Of the total community anchor institutions in the Delta, the majority were public schools. Public transit stations were the community anchor institutions that were least common in the Delta.
- From 2016 to 2021, the percentage of households in the Delta that had adopted any type of broadband was 92.4%. This is comparable to the percentage of households with broadband access in the state of California (87%).
- The percentage of households in the Primary Zone that have adopted broadband (81.8%) is lower than in the Secondary Zone (92.8%).

COMMUNITY ANCHOR INSTITUTIONS

Definition

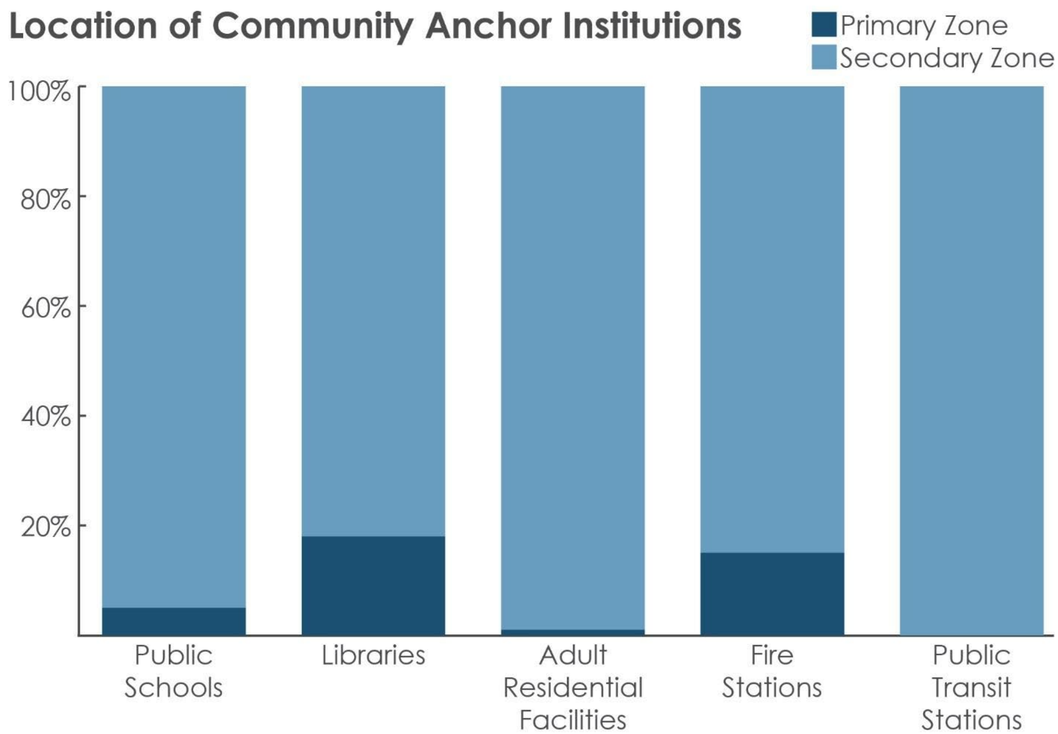
Community anchor institutions are public or non-profit organizations that provide the region with access to resources and services. As defined by the California Public Utilities Commission (CPUC) for the purpose of broadband funding such organizations can facilitate greater use of broadband service to vulnerable populations. Some examples of community anchor institutions include schools, libraries, fire stations, airports, and hospitals and other healthcare institutions. Data on the number and distribution of community anchor institutions in the Delta in 2020 are from the CPUC.

Why is this indicator important?

Community anchor institutions indicate the level of community resources and support within a region because they are natural gathering places. A high number of community organizations proportional to the population can indicate a community that can attract public or non-profit funding and serve as an infrastructure node. A low number of anchor institutions may indicate an under-resourced population.

How is the Delta doing?

In 2020, 96.7% of all community anchor institutions in the Delta were located in the Secondary Zone, and only 3.3% were located in the Primary Zone. Comparatively, 92.6% of the population resided in the Secondary Zone and 7.4% resided in the primary. This disparity is in part due to development restrictions in the Primary Zone but could highlight the need to examine the locations and distribution of facilities or consider more community resources in the Primary Zone to promote growth and economic development.


Location of Community Anchor Institutions
Primary Zone
Secondary Zone
100%
80%
60%
40%
20%
Public Schools
Libraries
Adult Residential Facilities
Fire Stations
Public Transit Stations

BROADBAND ACCESS AND ADOPTION

Definitions

Broadband access is defined as the connection to reliable and high-speed internet. The Federal Communications Commission (FCC) defines broadband internet access (service) as a download speed of at least 100 megabits per second (100 Mbps) and an upload speed of at least 20 megabits per second (20 Mbps). The state of California defines areas where no facility-based provider offers at least those speeds as "unserved."[7] The state promotes broadband adoption and infrastructure deployment in unserved areas with a goal of providing broadband access to no less than 98 percent of California households.[8] In addition, as of 2021, projects funded by the California Advanced Services Fund (CASF) program must produce infrastructure capable of providing broadband access at speeds of at least 100 Mbps download and 20 Mbps upload (100/20). Speeds between 25/3 Mbps and less than 100/20 Mbps are considered "underserved." Data on broadband access in the Delta was obtained from the California Public Utilities Commission.

Broadband adoption (or subscription for service) is a useful gauge of the many ways the public solves the connectedness problem and includes cable, fiber optic, and DSL. A 2019 CPUC study determined that low broadband adoption rates are most significantly associated with low income, with other demographic contributors including ethnicity/race, primary language, education, and rural areas.[9] Data on broadband adoption in the Delta was obtained from the American Community Survey, which is updated annually.

Why is this indicator important?

Access to broadband is important because it is a measure of both economic development and quality of life. Broadband is essential for many aspects of life today, from job searching, online learning, telemedicine, and e-commerce to access for public services, emergency services, and civic participation. It enables people across all socioeconomic statuses to have access to reliable, affordable internet connectivity and the tools to use the access. The proportion of homes, businesses, and institutions with broadband access in a community can indicate its social, economic, and technological development and access to equitable opportunity.

How is the Delta doing?

With significant new federal and state funding investments in broadband infrastructure being implemented since the COVID-19 pandemic, the measures of what it means to have broadband access have been changing amid advancing technology requirements,

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[7] California Public Utilities Commission (CPUC) California Advanced Services Fund (CASF) Program Updates
[8] CPUC CASF Public Workshops
[9] Broadband Adoption Analysis, CPUC (2019)

exponential increases in usage and increasing needs for digital skills in everyday life and in jobs. Thus, selecting indicators to measure how the Delta region meets the California Public Utility Commission's goal of universal broadband coverage is somewhat complicated. For the current report, since so much change is in progress in the regulatory and investment arena, access and adoption rates are used.

Importantly, the Delta's unique geography is an important factor that should be considered with respect to adoption rates, because even if cost of service is not a consideration, the quality of the service is. Geographic characteristics are a limiting factor on quality of service due to the difficulty and associated higher costs of deploying wired infrastructure in an environment where communities are spread across a vast landscape, trenching in levee roadways is highly limited, and waterways and private lands present obstacles. As a result, providers often turn to wireless solutions that rely on line-of-sight and other factors. These require access to antennas, towers and other public and private infrastructure to avoid or minimize the obstructions presented by tree rows. In the Delta, a blend of technologies is often required to achieve reliable service.

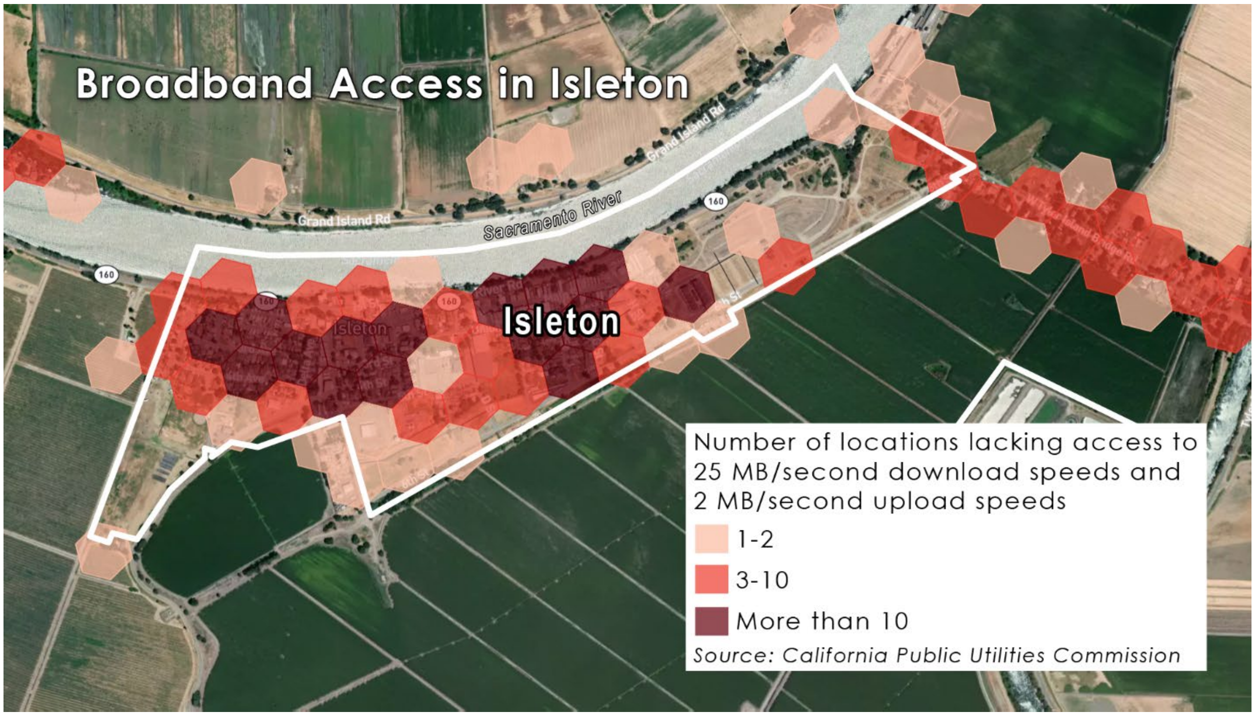
From 2016 to 2021, the percentage of households in the Delta that had adopted any type of broadband (including cable, fiber optic, and DSL) was 92.4%. The percentage in the Primary Zone (81.8%) was much lower than that of the Secondary Zone (92.8%). These adoption rates appear to show fairly robust coverage except that these very low speeds (25 Mbps/3Mbps) are ineffective for most contemporary practical uses, whether for business or residential.

Furthermore, data compiled from the CPUC[10] for 2023 shows that 88% of the Delta Primary Zone and 6% of the Secondary Zone were unserved or did not have access to broadband that was at least 25/3 Mbps speeds. As an example, the table below shows five census tracts within the Delta with 100% unserved locations:

Tract	Zone	Towns/Areas within Tract
6067009800	Primary	Isleton, Sherman Island
6067009900	Primary	Hood, Walnut Grove, Ryde
6077004001	Primary	Thornton, Terminous
6077005503	Secondary	Cochrane, Vernalis

The map of the City of Isleton on the next page illustrates how much of the city's businesses are unserved or underserved, and underscores the severity of the connectivity challenges facing Delta communities.

[10] Source CPUC



Broadband Access in Isleton
Isleton
Sacramento River
Grand Island Rd
160
Number of locations lacking access to 25 MB/second download speeds and 2 MB/second upload speeds
1-2
3-10
More than 10
Source: California Public Utilities Commission

APPENDIX: Data sources

Education

Indicator	Reference
Enrollment Characteristics	National Center for Educational Statistics 2021-2022
Cost-adjusted Revenue per Pupils	National Center for Education Statistics 2018
Highschool Graduation Rates	National Center for Education Statistics 2018

Housing and roads

Indicator	Reference
Median Household Value	2021 American Community Survey
Homeownership	2021 American Community Survey
Vacancy Rates	2021 American Community Survey
Overcrowded Housing	2021 American Community Survey

Jobs and the Economy

Indicator	Reference
Unemployment Rate	2021 American Community Survey
Median Household Income	2021 American Community Survey
Commute Time	2021 American Community Survey
Median Individual Earnings	2021 American Community Survey

Population

Indicator	Reference
Population by Age Groups	2021 American Community Survey
Primary and Secondary Educational Attainment	2021 American Community Survey

Working Lands

Indicator	Reference
Fish and Hunting Licenses	California Department of Fish and Wildlife 2023
Farming	CropScape (2023)
Farmland Conversion	CropScape (2023)

Community Resources

Indicator	Reference
Community Anchor Institutions	California Public Utilities Commission 2022
Broadband Access & Adoption	California Public Utilities Commission 2023

REFERENCES

Visser, M.A.; Brinkley, C.; Zlotnicki, J. (2019) *Socioeconomic Indicators Report: The Sacramento-San Joaquin Delta*. Sacramento, CA: The Delta Protection Commission. https://delta.ca.gov/wp-content/uploads/2020/09/Delta-Socio-Economic-Indicators-Report-508.pdf

Michael, Jeffrey Center for Business and Policy Research University of the Pacific Stockton and Sacramento, California; Geographical Information Center California State University, Chico, Chico, California. (2020) *The State of Delta Agriculture: Economic Impact, Conservation and Trends*. Sacramento, CA: The Delta Protection Commission. https://delta.ca.gov/wp-content/uploads/2020/07/Ag-ESP-update-agricultural-trends-FINAL-508.pdf

Brinkley, C., & Visser, M. A. (2022). Socioeconomic and environmental indicators for rural communities: Bridging the scholarly and practice gap. Economic Development Quarterly, 36(2), 75-91.

California Public Utilities Commission Federal Funding Account Map. (2023). Accessed Oct. 25, 2024, at https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/broadband-implementation-for-california/last-mile-federal-funding-account/ffa-public-map

“A statewide survey shows the digital divide narrowing in California, but many low-income residents remain under-connected.” USC Today. (Dec. 18, 2023). Accessed Oct. 25, 2024 at https://today.usc.edu/a-statewide-survey-shows-the-digital-divide-narrowing-in-california-but-many-low-income-residents-remain-under-connected/

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