

# Redeveloping Failing Malls: Opportunities for Reducing VMT and GHG Emissions and Increasing the Housing Supply through Urban Villages

November  
2022

A Research Report from the Pacific Southwest  
Region University Transportation Center

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**TECHNICAL REPORT DOCUMENTATION PAGE**

<b>1. Report No.</b> PSR-21-26	<b>2. Government Accession No.</b> N/A	<b>3. Recipient's Catalog No.</b> N/A	
<b>4. Title and Subtitle</b> Redeveloping Failing Malls: Opportunities for Reducing VMT and GHG Emissions and Increasing the Housing Supply through Urban Villages		<b>5. Report Date</b> 11/30/2022	
		<b>6. Performing Organization Code</b> N/A	
<b>7. Author(s)</b> Hilda Blanco, Orcid No: 0000-0001-7454-9096		<b>8. Performing Organization Report No.</b> TBD	
<b>9. Performing Organization Name and Address</b> METRANS Transportation Center University of Southern California University Park Campus, RGL 216 Los Angeles, CA 90089-0626		<b>10. Work Unit No.</b> N/A	
		<b>11. Contract or Grant No.</b> USDOT Grant 69A3551747109 Caltrans Contract 65A0674	
<b>12. Sponsoring Agency Name and Address</b> U.S. Department of Transportation Office of the Assistant Secretary for Research and Technology 1200 New Jersey Avenue, SE, Washington, DC 20590		<b>13. Type of Report and Period Covered</b> Final report (10/1/2021 through November 30, 2022)	
		<b>14. Sponsoring Agency Code</b> USDOT OST-R	
<b>15. Supplementary Notes</b> <a href="https://www.metrans.org/research/redeveloping-failing-malls-opportunities-for-reducing-vmt-and-ghg-emissions-and-increasing-the-housing-supply-through-urban-villages">https://www.metrans.org/research/redeveloping-failing-malls-opportunities-for-reducing-vmt-and-ghg-emissions-and-increasing-the-housing-supply-through-urban-villages</a>			
<b>16. Abstract</b> California's housing shortage is large. The State's Department of Housing and Community Development in its recent Housing Plan estimates that the State needs to build 2.4 million housing units by 2028 to meet the housing needs of its population. Since the late 1990s, and more so during COVID, industry research experts (Credit Suisse 2018; Green Street Advisors 2021) have warned of the impending failure of lower quality major shopping malls in the United States. In California, there are approximately 126 major malls with footprints from 400-120 acres, with approximately ½ or more of the acreage dedicated to surface parking. The redevelopment of economically distressed major malls into mixed- use centers can address the State's housing need. California has recently passed several laws that will facilitate the redevelopment of failing malls into mixed-use centers, such as S. B. 6 (Caballero) that permits the conversion of failing malls into mixed use centers, and AB 2097, which reduces the parking requirements for residential developments in areas that are transit rich. The study provides literature reviews of trends that provide support for the policy of redeveloping failing shopping malls into mixed use centers, Chapter 1 focuses on the stock of major malls in California (136 malls) and finds that more than half of such malls are low-rated and are potential candidates for redevelopment. The study then discusses California's Department of Housing and Community Development's programs and recent laws that could assist in the redevelopment of major malls into mixed use centers (Chapter 2). Chapter 3 reviews the COVID effects on working from home (WFH), and Chapter 4 focuses on the recent move to the suburbs. Chapters 5-8 provide brief profiles of malls in two major metropolitan areas in the state, San Diego and the Bay Area. The case studies illustrate different conditions and opportunities for redevelopment. Chapter 9 provides a simple method for calculating the mixed-use redevelopment potential of failing malls and applies it to the four cases. The results, at 59 dwelling units per net acre, yield 1,000 or more units for the cases in townhomes, and 3-4 story apartments over retail, illustrating the potential of failing malls to address the State's housing shortage in a significant way.			
<b>17. Key Words</b> Public transit, land use, sustainability		<b>18. Distribution Statement</b> No restrictions.	
<b>19. Security Classif. (of this report)</b> Unclassified	<b>20. Security Classif. (of this page)</b> Unclassified	<b>21. No. of Pages</b> 104	<b>22. Price</b> N/A

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## About the Pacific Southwest Region University Transportation Center

The Pacific Southwest Region University Transportation Center (UTC) is the Region 9 University Transportation Center funded under the US Department of Transportation's University Transportation Centers Program. Established in 2016, the Pacific Southwest Region UTC (PSR) is led by the University of Southern California and includes seven partners: Long Beach State University; University of California, Davis; University of California, Irvine; University of California, Los Angeles; University of Hawaii; Northern Arizona University; Pima Community College.

The Pacific Southwest Region UTC conducts an integrated, multidisciplinary program of research, education and technology transfer aimed at *improving the mobility of people and goods throughout the region*. Our program is organized around four themes: 1) technology to address transportation problems and improve mobility; 2) improving mobility for vulnerable populations; 3) Improving resilience and protecting the environment; and 4) managing mobility in high growth areas.

### U.S. Department of Transportation (USDOT) Disclaimer

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### Disclosure

Dr. Hilda Blanco, Principal Investigator, and Graduate Research Assistants, Andrew Davidov and Kishann Rai, conducted this research titled, "Redeveloping Failing Malls: Opportunities for Reducing VMT and GHG Emissions and Increasing the Housing Supply through Urban Villages", at the METRANS Transportation Center, Price School of Public Policy, University of Southern California. The research took place from October 1, 2021 to November 30, 2022, and was funded by a grant from the State of

California, California Department of Transportation in the amount of [\$99,400). The research was conducted as part of the Pacific Southwest Region University Transportation Center research program.



## Acknowledgements

Thank you to Prof. Gen Guiliano at the Price School for encouraging me to do this research, and for her kind help throughout my time at USC.

My two graduate research assistants at the Dept. of Urban Planning and Spatial Analysis at the Price School, Andrew Davidov and Kish Rai provided invaluable assistance to the research.

Thanks also the officials in the case study cities that we interviewed for the cases:  
In the City of El Cajon: Noah Alvey, Deputy Director of Community Development

In the City of Carlsbad: Eric Lardy and Jason Goff

In the City of Hayward: Leslie Mendez, Planning Director; Paul Nguyen, Economic Development Director, and Christina Morales, Planning Director.

In the City of San Rafael: Alicia Guidice, Community Development Director, and Leslie Mendez, Planning Director.

## Abstract

California's housing shortage is large. The State's Department of Housing and Community Development in its recent Housing Plan estimates that the State needs to build 2.4 million housing units by 2028 to meet the housing needs of its population.

Since the late 1990s, and more so during COVID, industry research experts (Credit Suisse 2018; Green Street Advisors 2021) have warned of the impending failure of lower quality major shopping malls in the United States. In California, there are approximately 136 major malls with footprints from 40-120 acres, with approximately ½ or more of the acreage dedicated to surface parking. A major finding is that more than half of such malls are low-rated and are potential candidates for redevelopment. (Chapter 1)

The redevelopment of economically distressed major malls into mixed-use centers can contribute to addressing the State's housing need (Chapter 2). The chapter reviews California's Department of Housing and Community Development's programs and recent regulations that could assist in the redevelopment of major malls into mixed-use centers, e.g., S. B. 6 (Caballero) that permits the conversion of failing malls into mixed use centers, and A. B. 2097 (Friedman), which reduces the parking requirements for residential developments in areas that are transit rich.

The study also provides literature reviews of trends that provide support for the policy of redeveloping failing shopping malls into mixed use centers, including the review of COVID effects on working from home (WFH) (Chapter 3), and the move to the suburbs (Chapter 4), Chapters 5-8 provide brief profiles of malls in two major metropolitan areas in the state, San Diego, and the Bay Area. The case studies illustrate different conditions and opportunities for redevelopment. Chapter 9 provides a simple method for calculating the mixed-use redevelopment potential of failing malls and applies it to the four cases. The results, at 59 dwelling units per net acre, yield 1,000 or more units for the cases in townhomes, and 3-4 story apartments over retail, illustrating the potential of failing malls to address the State's housing shortage in a significant way.

# Redeveloping Failing Malls: Opportunities for Reducing VMT and GHG Emissions and Increasing the Housing Supply through Urban Villages

## Executive Summary

### **Failing Shopping Malls: Opportunities for Increasing the Housing Supply in Mixed-use Centers**

Since the 2010s, shopping malls have been increasingly facing competition from online shopping. Commercial experts have been warning of their decline and the likely closing of lower quality malls (Credit Suisse 2018; Cushman and Wakefield 2018; Thomas 1/26/21).

The major data source consulted in this study (Directory of Major Malls 2022) provides information on sales data that enables the rating of malls, and identified 136 major malls in California, from 40 to 120 acres in size. Most of the acreage in these malls is dedicated to surface parking.

Malls that subscribe to the Directory provide information on their sales data, but this is voluntary, and only about 1/3 of major malls in California provided recent information on the sales data that would enable rating them according to the industry's system, which rates malls according to A, B, C quality. Of the 1/3 of malls that reported the sales, 3/4 of them provided information that would rate them as B or C malls. Currently, expert opinion is that B and C rated malls are vulnerable to closing. Since it is likely that malls that did not provide any information on their sales data are rated B and C malls, we can plausibly conclude that at least 2/3 of the major shopping malls in California are vulnerable, and potential candidates for redevelopment.

### **California's Housing Deficit and Recent State Action**

California has a very large housing deficit, currently estimated at 2.5 million housing units over the next eight years (CA DHCD, 2022). Up to recently, its Regional Housing Needs Assessment (RHNA) process, the main process through which the State's Department of Housing and Community Development (DHCD) provided local government targets and oversight for housing production to meet the housing needs of Californians, lacked enforcement power. To respond to this challenge, Gov. Newsom in 2021 established a Housing Enforcement and Accountability Unit at DHCD. This new unit can revoke a locality's housing element, and initiate legal suits against local jurisdictions that fail to develop adequate plans or implement such plans. It is likely that, as a result, local governments efforts to increase the housing supply will be more successful.

A recent UC Berkeley Turner Center survey estimated that about 2/3rds of the land in California jurisdictions are zoned for single-family housing. Both the prevalence of single family residential zoning and the difficulties in changing local zoning and permitting processes to increase the housing supply in the State has led to several new laws that permit up to four units in single

family zones (S.B. 9 effective 1/1/22); a pair of laws (SB 6 and AB 2011) that allow housing construction on commercially zoned land; and a law (AB 2097) that bars local governments from requiring parking minimums, if a project is within ½ a mile of public transit, or in a transit rich area. By reducing parking requirements, AB 2097 could reduce the cost of housing units in redeveloped malls in transit rich areas.

Enhanced Infrastructure Financing Districts (EIFDs) are local financing tools that local governments could use to enter into partnerships with mall owner-developers to finance infrastructure needed for new housing development. EIFDs have potential to assist local governments in partnering with shopping mall owner-developers in the redevelopment of failing malls.

Failing malls could also provide opportunities to address the housing crisis among students in higher education in the State. EIFDs and Public Private Partnerships (P3s) between state higher education institutions and owner-developers of shopping malls could help to provide needed student housing in redeveloped malls.

### **COVID Effects on Work, and VMT**

Before the pandemic only 2.8% of workers surveyed through the American Time Use Survey (2017/2018) reported that they worked at home every day, and 10.2% reported that they worked at home on some days only. The pandemic led to the widespread adoption of working from home. Working from home increased dramatically, to a large extent among professionals and office workers, reaching rates of 20-40%. The rates of remote work varied depending on types of work, socio-economic class, race, education, and location.

With the increase in remote work at the height of the pandemic in 2000, total vehicle trips and VMT dropped in California and throughout the United States. In California, there was an increase in people staying at home, from 19-20% before the pandemic, to 34% at the height of the pandemic in 2020, and averaged around 25% through April, 2022. Trips that averaged from 5-50 miles in California, most likely suburban work trips, had the largest decrease, dropping by half at the height of the epidemic.

To what extent the increases in working from home during the pandemic “stick” (Salon et al. 2021) is still to be determined, but many businesses have experimented with WFH and, as Bloom, Han and Liang (7/2022) profile in their study, may continue such work policies after the epidemic.

### **Will the Move to the Suburbs Stick After the Pandemic?**

Even before the pandemic, metropolitan areas reported to have 57% of their population living in suburban locations, and central cities reported that 47% of their population lived in suburban areas. Urban experts agree that the beginning of the epidemic led to a further urban exodus to the suburbs of metropolitan areas. It is not clear yet whether the moves to the suburbs during the pandemic will continue past the pandemic.

The literature also makes clear how the city exodus to the suburbs and the potential for work from home depends on the type of work one does, education and other demographics. The difference in travel behavior in the use of transit between less educated and lower-income

workers and more educated, higher income individuals during the pandemic was graphically illustrated in a study of transit boardings in King Co., Washington State (Brough et al. 2021). If moves to the suburbs are combined with increased rates of WFH, this can result in fewer suburban work trips, less congested highways, and less air pollution.

If the increases in the rates of remote work are maintained after the epidemic, several authors have suggested how to make the suburbs more livable, including new neighborhood centers with restaurants, cafes, bars, and more affordable home options (Gupta 2020; Daniels 2021).

### **Brief Mall Profiles**

The study provides brief profiles of four malls, two in San Diego County and two in the Bay Area:

**Parkway Plaza**, located in the City of El Cajon in San Diego County, is an 80-acre mall, which underwent a change in ownership, as well as the loss of a major anchor, Sears, in 2020. The new owners have not announced plans for redevelopment. The mall is in a Mixed-use Overlay zone, which would facilitate its redevelopment with a housing component. The City Council (2/2022) has included the revisioning of the mall as one of its economic development priorities, and plans to engage the multiple owners in this process with the assistance of a team from the local University.

Promising for the redevelopment of the mall into mixed use with a significant housing component is that the mall is already in a Mixed-use overlay area, that the City Council has identified the mall as an economic development priority and is seeking ideas on how to accomplish this, and that incorporating housing in the redevelopment of the mall would contribute to meeting the City's new RHNA targets.

**The Shoppes at Carlsbad** is a 90-acre mall (with 59 acres in surface parking) in a suburban municipality, where the pollution burden is low, with a population with significantly higher average household and individual income than the State's, and with almost half the State's poverty rate. In addition, surface parking area in the mall is owned by the City.

Carlsbad has not met its RHNA targets in the past, but the more forceful enforcement of RHNA targets by the State are likely to result in more successful efforts to increase the housing supply—a large portion of which could be achieved by changing the land use regulations to allow housing in the mall. As a result, the city has initiated a General Plan amendment for a rezoning of the mall. The rezone would enable housing on the current parking area of the mall, which planners expect could be around 1,000 units. The changes need to be completed by 4/2024 to comply with the State's RHNA process. The mall owner, Brookfield, is also interested in adding housing to their mall property.

**Southland Mall** is an 82-acre mall in Hayward, with surface parking on 70% of its site. The mall's zoning falls under the City's Commercial Business District, which allows housing above commercial or stand-alone. One of its major anchors, Sears, closed in early 2020, but its 34-acre parcel was acquired by a company that is interested in redeveloping the parcel as mixed use or residential.

The City would welcome residential development on the mall site, especially since its RHNA allocation for the 6<sup>th</sup> cycle sets a higher target than the last cycle, and California’s DHCD will have more rigorous oversight and enforcement during this cycle. However, the mall falls under the Hayward Airport Safety Zone and any redevelopment would need to undergo special review

by the Hayward Airport Land Use Commission, and such a review would lengthen the redevelopment process.

**Northgate Mall in San Rafael.** The mall owner, Merlone Geier is a California-based company with ownership of over 100 shopping malls in California, Oregon and Washington State. The firm is interested in “non-dominant and/or functionally obsolete regional malls in need of repositioning” (Merlone Geier 2022), as well as in mixed-use redevelopment.

Merlone Geier initiated a redevelopment of the mall in 2019, which was rejected by the City Council. In 2021, the owner-developer presented another plan for the Mall’s redevelopment, which responded to the community’s concerns with the previous redevelopment plan. The inclusion of a central plaza in the new redevelopment plan of the mall responds to a main interest of residents. But there are still concerns about the number and scale of some of the residential projects included in the redevelopment plan, and of the character of the open space/central plaza.

The redevelopment of the mall with a significant housing component, as currently planned, will help the City meet the increased allocation for housing assigned to the City under the 6<sup>th</sup> RHNA program.

### **Calculating the Mixed Use Redevelopment Potential of Failing Malls**

Chapter 9 outlines and applies a simple process, with easily obtainable information, to determine the potential mixed-use redevelopment capacity of a failing mall, especially if the mall is one-story. It could provide a credible total estimate of the potential supply of housing that the redevelopment of failing malls in California or elsewhere could contribute to increase the supply of housing while providing lively mixed use suburban centers. In addition, the case of the Northgate Mall, where the redevelopment plan is further along than in the other cases, suggests that an important way to free up more land for redevelopment in such malls is to invest in parking structures.

### **Conclusions**

Redeveloping failing malls can expand housing opportunities to singles, seniors, couples, families in apartments or townhouses that may want the amenities that a suburban center provides without the investment and upkeep of suburban single-family homes. Their redevelopment can also provide a share of a locality’s affordable housing obligations, as well as housing for college students in California. Adding housing to such malls will provide the residential component needed to ensure the liveliness and safety of a town center.

Mixed use malls are likely to reduce vehicle trips and VMT. Currently, several bus lines serve the shopping malls studied in this report. In the case of mall redevelopments, as appropriate, State, regional, and local transportation agencies can partner with mall owner-developers to provide

enhanced transit access to redeveloped malls. This would reduce congestion in many highways by reducing SOV trips and VMT. This may not achieve all the objectives of Transit-Oriented-Development (TODs) but would advance the objectives. Enhanced transit access can also reduce parking requirements for residential units, thus reducing the price of apartments or townhomes in mixed-use redeveloped malls (by an estimated \$36K per unit).

Local governments can facilitate such redevelopments through various means. For example, if a local government owns a parcel in a mall, as in the Sunrise mall redevelopment (Blanco 2021) in the Sacramento area, or as in the Shoppes at Carlsbad profiled here, it can initiate and lead a timely redevelopment process, ensure public participation in the planning process, and an appropriate housing component. If local governments do not have partial ownership of a mall, local governments can initiate zoning changes that can speed up a redevelopment process to include housing.

Through local economic development departments, local governments can identify potential funding for housing from federal, state, or local funds and, when appropriate, use public-private partnerships to ensure appropriate mixed-use redevelopment.

## Chapter 1. Shopping Malls: Characteristics, Trends, Focus on California's Major Malls

### Introduction

In the U.S., the history of open space shopping malls goes back to the 1920s. However, the design of the first ever enclosed shopping mall is credited to the architect and designer, Victor Gruen, who designed the Southdale Mall in Edina, Minnesota in 1954 (Lange 2022). Enclosed malls were quickly developed in suburban areas in the U.S, so that by the 1960s, there were 4,500 (Harmon and Zim, 12/13/21).

Major malls have large footprints from 40 to over 100 acres, with vast areas for surface parking, and with major department stores (Macy's, Sears, JC Penney's) serving as anchors, which, historically, have been the main attractors in the malls. Compared to suburban subdivisions, the footprints of major malls are large. According to a national survey conducted by the National Association of Home Builders (Emrath, 10/11/2016), the median size of suburban subdivisions is 25 acres (with 50 housing units).

Malls have been an important addition to the suburban lifestyle. With the emergence of malls, suburban residents no longer had to depend on city center stores for most of their shopping needs. Malls provided goods and services at much shorter distances than city centers.

With our digital advances, by the 2010s, suburban shopping malls began to lose ground with the increasing adoption of online shopping and home deliveries. As discussed in a section below, by the end of the 2010s, several major department store chains began to fail, and the experience with COVID is likely to bring about more failures. (Thomas, 1/26/21; Maheshwari and Friedman 4/21/20 and updated 7/12/21).

Shopping malls have begun to respond to some of these challenges, as discussed below. For example, many are embracing hybrid shopping modes, i.e., shopping online, pick up at mall.

This chapter, after describing the key characteristics of major shopping malls and major trends, focuses on California major malls, discusses some of the challenges they face, expert opinions on their future, and current strategies to respond to their challenges.

### Methods

The literature review on major malls used two major commercial databases to identify major malls and their characteristics in California, and general trends: ICSC, the international association of shopping centers, and the Directory of Major Malls. In addition, it included searches for articles in commercial business journals, e.g., Bloomberg News, Deloitte, Forbes.



**Key search terms included:** shopping mall trends, the future of shopping malls, failing shopping malls, omnichannel shopping, anchor stores in malls, the failure of anchor stores.

## Characteristics of Major Malls

This study is focused on major shopping malls in California. Shopping malls are classified by the international association of shopping centers (ICSC)<sup>1</sup> by total acreage including surface parking, gross leasable area (GLA), and number of anchor stores. Department stores, such as Macy's, Sears, JC Penney's have been major anchors of shopping centers. These anchor stores have served as major attractors for shoppers, providing potential customers for other, non-anchor stores.

ICSC identified a total of 1,148 regional and super-regional malls in the United States in 2022, 561 regional and 587 super-regional. Regional malls range in acreage from 40-100 acres, serve a

trade area of from 5-15 miles, and have a GLA from 400-800,000 square feet while super-regional malls range in acreage from 60-120 acres, serve trade areas from 5-25 miles, and typically have a GLA of 1 million or more.

ICSC also tracks gross leasable area (GLA) for both shopping malls and open-air marketplaces. For the U.S., in 2022, ICSC reported a Total Marketplace Gross Leasable Area (GLA) for the U.S., of 7,559.1 million square feet, with malls (regional and super-regional) providing 1,059.6 million square feet of GLA, and open-air marketplaces the rest (ICSC 2022).

## Quality of Malls and their Prospects

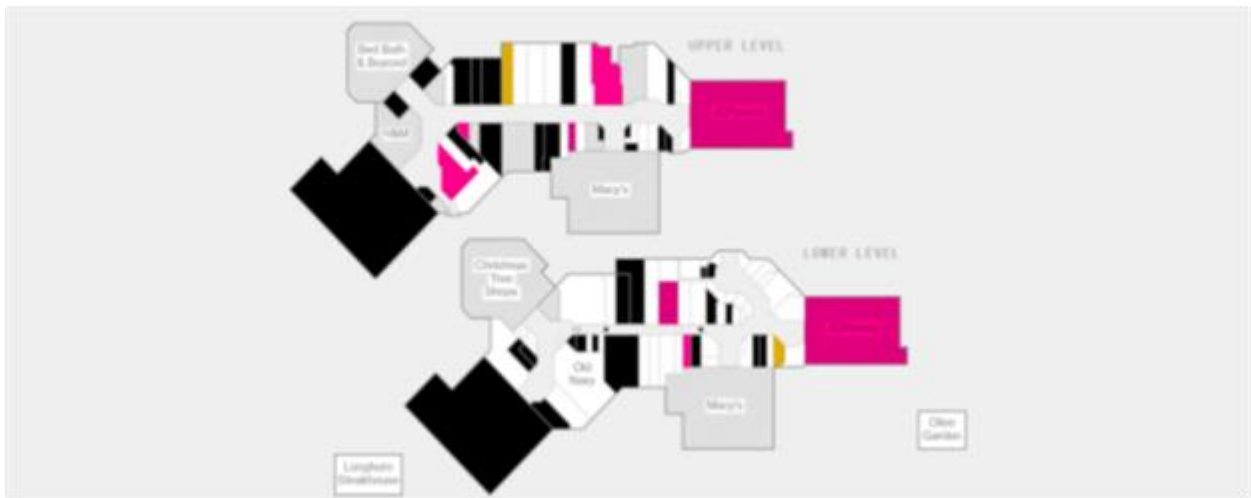
The quality of malls in the U.S. is rated by the industry in terms of A, B, C grades. The grades are based on the revenues generated by non-anchor stores per square feet of GLA. Class A malls have the highest rating, then B and C. Although the amount of revenue per square feet of GLA used to determine the quality of malls varies over time and by expert, in A quality malls non-anchor stores average over \$500 in sales per square foot, while in B quality malls non-anchor stores average between \$500 and \$300 in sales per square foot, and C quality malls average below \$300 per square foot.

Even before the COVID epidemic, industry experts (Busch (Green Street Analytics) (10/4/2017); Credit Suisse (2018); Cushman and Wakefield (2018) warned about the decline and closure of major malls. For example, Credit Suisse's forecast in 2018 that, although the best quality malls (Class A) would likely survive, that lower quality malls (B and C malls) will likely shrink or close, especially C malls by the early 2020s. In their study, Credit Suisse analysts held residential and retail as complimentary property types, and Cushman and Wakefield indicated that "the reinvention of dying malls as mixed-use projects will gain momentum in 2019 and beyond" (p. 3).

The pandemic has solidified expert forecasts on malls. In an influential Green Street report on the future of shopping malls, analysts pointed out that even top-tier mall values were declining

45% from 2016 retail levels. They forecast that ½ of remaining mall-based department stores would close by the end of 2025. The study profiled by CNBC (Thomas, 1/26/21) indicated that ¼ of all malls were A rated, bringing in an average of \$750 pre square feet; while B malls averaged \$425; and C malls averaged \$250 per square feet. The study estimated that A-malls, important for monitoring the retail real estate industry, had dropped in value by 45% from 2016. Given the weaknesses and closures at department stores, according to the study, even A-class malls face risks. But the biggest risk, Green Street and other analysts argue, is for B and C rated malls, which may need to find entirely new uses. The Green Street study pointed out that the biggest risk to malls are obsolete anchors, and it forecast that ½ of the remaining mall-based department stores would close by the end of 2025. See also, *NY Times* article on the failure of department stores such as Sears, JC Penney, Century 21, Lord and Taylor, Neiman Marcus (Maheshwari and Friedman 4/21/20 and updated 7/12/21).

A *Bloomberg News* article by Ngo et al. (8/27/20) graphically illustrated the vulnerability of B malls, with a case study in Waterford, CT, the 2-story Crystal Mall. The Mall lost a major anchor when Sears went bankrupt in 2018 (depicted in black), then JC Penney, (depicted in pink), then six retailers also filed for bankruptcy, leaving 35 vacant stores.



**Figure 1. Crystal Mall, Waterford CT, 2-story mall by 8/2020, Sears closing depicted in black at the left side, JC Penney closing at right, other store closings in black. (Ngo et al. 2020)**

### Trends and Emerging Interest in Mall Transformation

This section briefly highlights several important trends that will influence the future of shopping malls: the emergence of omnichannel retail; increase in restaurants and lifestyle uses in malls; and increased interest in mall transformation to mixed uses with housing and public spaces. The addition of office development to shopping malls was an increasing trend before COVID.

However, given the influence of work from home (WFH) during the epidemic and the likelihood of its endurance past the epidemic, as discussed in Chapter 3, the prospects for new office development as tenants for malls considering redevelopment are not as attractive. The section ends with a brief review of another major trend, the increasing conversion to warehousing of underperforming malls.

### Omnichannel Retail and the Halo Effect

The negative effect of e-commerce on brick-and-mortar commerce was a major factor in the forecasts for, as well as the performance of department store chains and shopping malls. The growing recognition of the influence of the internet on shopping, especially the influence of Amazon, as well as the growing presence of on-line services for major retailers, has led to the development of *Omnichannel* shopping strategies. Omnichannel refers to the recognition that, today, shoppers' experience is influenced not only by the physical store and its characteristics,

but also by its website, email and mobile connections and advertising. See Figure 2.

Omnichannel strategies call for cross-channel, customer personalization, with tailored services (O'Connell 1/31/22; Briedis, Greg, Heindeareich, and Liu 4/30/21).

In response, in 2018, ICSC released a study recognizing the "omnichannel retail" approach, which focuses on providing shoppers with a unified experience across digital and physical channels, from browsing to order fulfillment. The ICSC study argued and documented what it called the "halo effect"—the direct impact of brick-and-mortar stores on digital engagement and consumer awareness, e.g., that a consumer's experience in a physical store increases the share of a retailer's web traffic (ICSC 2018; see also its follow-up, ICSC 2019).



Figure 2. Omnichannel Shopping Experiences (O’Connell 1/31/22)

### Increase in Restaurants and Lifestyle Uses in Shopping Malls

In its *Industry Insights* series (1/15/2020), ICSC tracks retail vs. services establishments in malls. During the period from 2002 to 2017, the share of retail establishments in U.S. malls went from 53.2% to 47.4%, while the share of service establishments (restaurants, and drinking, repair and maintenance, personal and laundry services, fitness and recreational sports centers) increased from 46.8% to 52.6%. Food and drink establishments expanded the most during this period, an increase of 30.9%. This makes clear that even before the pandemic, restaurants and other service establishments were increasing their presence in malls. A 2017 Washington Post article (Heath 3/10/2017) posed the question, “Can supermarkets save dying suburban malls?”. Some industry experts see grocery stores as promising new anchors for suburban shopping malls (First National Realty Partners 5/2/2021). Among the reasons for their promise is that

supermarkets generate a lot of foot traffic more frequently, weekly vs. a monthly visit to a Macy's (Heath 3/10/2017).

### Increasing Interest in Mixed Use, Public Space in Malls, Creating a Sense of Community

The interest in mixed use shopping centers with a residential component is not new, for example, Boca Raton's Mizner Park, which opened in 1989, is a high-end mall, which mixes shopping, entertainment, and residential uses (Vernez-Moudon 1997). For over 20 years, the Congress for the New Urbanism (2001) has been advocating for mixed use redevelopment of failing malls. Currently, new urbanists have a dedicated webpage advocating for the conversion of failing malls into mixed-use centers, to include housing (New Urbanists 2022).

The interest in mixed uses in suburban malls, in particular, by incorporating housing and public spaces, has increased recently among shopping mall experts. In 2022, McGee, the President and CEO of ICSC, in his State of the Industry address identified, as one of 5 key marketplace trends to watch: "Suburbs undergoing a rise in mixed-use communities with retail, residences, and restaurants." For example, in Atlanta, GA, in its redevelopment plan, North Point Mall proposed to add 300 one and two-bedroom apartments (Brasch 3/8/2019). In Henrico County, VA, the County is paying for infrastructure to incentivize the redevelopment of the Regency Square Mall as mixed use, to include residential units (Gordon, 3/29/21). In Daly City, California, Kimco Realty, the owner of Westlake Shopping Center has already obtained approval to build 179 apartments to replace a retail and office complex in the mall, and in July of 2022, the City Planning Commission approved a plan to build 214 apartments on the former Burlington Coat Factory site (Dineen 7/7/2022).

Rogers and Eckenrode (10/8/21) in a *Deloitte Insights* article begin by noting that COVID forced consumers online, creating a greater demand for omnichannel services. They argue that although, at that time, e-commerce represented only 14% of overall retail sales, this share was likely to grow. To counter such a trend, they argued, retailers needed to do more: "Recast the role of the shopping center to serve multiple purposes." The authors went further and suggested that responding to the increase in WFH, creates opportunities for shopping centers: "Are there ways that they (shopping centers) can serve as community centers, where consumers could easily access experiences and events?". They point out that shopping centers can address "the needs of their communities by taking the role of the "town square" enabling retailers and real estate owners to address the needs of consumers that online competitors cannot."

### Warehousing?

The demand for fulfillment centers to serve increasing e-commerce sales is another growing trend that is likely to compete with mixed-use mall conversions (Rinelli 8/14/2021). With e-commerce sales growth, especially since the beginning of the pandemic, mall owners and

operators are increasingly considering the conversion of at least part of their space into mini-fulfillment centers. For example, it was widely reported that Amazon approached the Simon Property Group to convert their empty JC Penney and Sears sites into such centers. Although the deal did not go through, it shows the potential for such conversions. And Amazon did convert 25 shopping malls into fulfillment centers across the U.S. between 2016 and 2019. Miranda (4/5/2021) in an NBC news article, interviewed several retail and industrial analysts on this topic. They concluded that selling “a dead mall as land is a more attractive option” for mall owners than redeveloping it. The analysts point out that lower-tier malls have trouble meeting their mortgage debt when there are few or no tenants left and selling the mall for its land value is an attractive option, even if the land value is low. The major benefit, according to several local governments officials facing the conversion of dead or dying malls into fulfillment centers, is the employment that such centers bring to the community. In California, partial mall conversions are already occurring. For example, in the Stonestown Galleria in San Francisco, the 26,000 square foot site that Nordstrom left when it shut down its store is being converted into warehouse space (Bautista, 4/29/22).

## Key Features of Major Malls in California

According to the Directory of Major Malls, as of July 16/2022, there were 136 major malls (regional and super-regional malls) from 40-120 acres in California.

Only 47 of the 136 malls, or about a third, included sales per sq. ft. (excluding anchors), in their reports to the Directory--the key variable for classifying malls as A, B, C, D.

Not all malls, even before COVID, provided information on sales per sq. ft. for non-anchor stores and the assumption is that malls not reporting are lower quality malls.

Of the 47 malls that reported sales per sq. ft.:

- 11 reported sales over \$500/sq. ft. (A malls)
- 34 reported sales between \$300-500 (B malls)
- 2 reported sales below \$300 (C malls).

Of those that did not report sales, if we assume that they would be rated C malls, and if the assumption is right, then about 2/3 of the California malls would rate as C malls, and according to the experts would be good candidates for redevelopment.

## Concentration of Ownership

Of the 136 major malls that the Directory of Regional and Super-Regional Malls listed on 7/16/2022, the top five owner-developers with multiple properties were:

- Unibail-Rodamco-Westfield (URW), which owned 15 major malls (14 malls as of 8/2022, see below)
- Brookfield—13 malls
- Macerich—12 malls
- Simon—9 malls

## Merlone Geier—5 malls

Of these five top owners, only one, Merlone Geier, is a California-based company. URW is a Paris-based international commercial developer and operator firm that in December of 2017 acquired the Westfield Corporation, which held 35 shopping malls in the U.S. and the U.K. (Unibail-Radamco 6/12/2018). In March of 2021, URW announced its plan to sell all its U.S. malls (24 malls) by the end of 2022 (this has been extended to 2023) to focus on its EU holdings (Welk, 3/7/2021). URW sold a smaller, nearly vacant shopping center (34 acres), the Westfield Promenade, to the L.A. Rams in March of 2022 (Powells, 5/6/2022). It sold its first major mall, the Westfield Santa Anita in Arcadia in August of 2022 (Vincent, 8/31/22) for \$537.5 million, which brings down the URW holdings of major malls in California to 14. URW is still the owner of the greatest number of major malls in California.

The Simon Property Group is the largest property management company in the U.S. with total holdings amounting to 241 M sq. ft. of Gross Leasable Area (GLA); Brookfield Properties is the second largest, with 155 M GLA; and Macerich is listed as the 8<sup>th</sup> largest retail shopping center property management firm, with 51 M GLA (Statista 2021).

Shopping malls owners, such as Simon Property Group, Brookfield Properties, or Macerich, are typically Real Estate Investment Trusts (REITs) or belong to a retail REIT (First National Realty Partners 4/23/21). REITs are companies that have a portfolio of commercial properties, such as apartment complexes, healthcare facilities or shopping malls. They are publicly traded, and investors can buy and sell their shares. When the investment is profitable, they yield dividends.

## Findings

Since the 2010s, shopping malls have been increasingly facing competition from online shopping. Commercial experts have been warning of their decline and the likely closing of lower quality malls (Credit Suisse 2018; Cushman and Wakefield 2018; Thomas 1/26/21).

The major data source consulted in this study (Directory of Major Malls 2022) provides information on sales data that would enable the rating of malls. However, from the malls that provided information on their sales data (amounting to about 1/3 of major malls in California), ¼ of them provided information that would rate them as B or C malls. Since it is likely that malls that did not provide information on their sales data are rated B and C malls and given expert opinions that B and C rated malls are vulnerable to closing, then we can plausibly conclude that 3/4 to 2/3 of the major shopping malls in California are vulnerable, and potential candidates for redevelopment. In addition, mall ownership is highly concentrated, mostly by non-California based companies.

The conversion of malls into mixed use centers to include housing has been championed by the new urbanist movement, but shopping mall redevelopment into mixed-use centers faces competition from increased warehousing demand due to increases in on-line shopping.

## Chapter 2. Housing Crisis in California, State Initiatives to Increase the Housing Supply, and Potential Mall Redevelopment

### Introduction

The major state agency focused on housing in California is the Department of Housing and Community Development (DHCD or HCD), with a major focus on ensuring an adequate supply of housing for California's population, especially for its low-income population. The chapter focuses on major ways in which the State and HCD address housing production/supply and not directly on housing affordability.

This chapter briefly reviews the major program in the State to ensure that local governments generate enough housing to adequately house the State's population. California's housing shortage has been estimated to be from 1.8 M (CA HCD 2018) to the McKinsey study's estimate of 3.5 million units of housing (Woetzel et al. 2016). The most recent CA HCD plan estimates that the State will need 2.5 million housing units over the next eight years (DHCD 2022a).

The opportunity to redevelop failing malls to include housing, of course, raises issues of affordability, but the research reported here is focused on the potential that redeveloped malls have for increasing the housing supply. The study assumes that housing within redeveloped malls will address local affordable housing targets. This narrows the scope of the analysis of State programs within DHCD. With this focus, the chapter will briefly address the Regional Housing Needs Assessment (RHNA) program, which sets targets for affordable housing at different income levels, including for above moderate incomes for cities and counties. It also reviews recent criticisms of the State's housing program, and the State response.

The chapter provides brief descriptions of the local permitting processes, and their impact on housing supply. It discusses several new state laws, e.g., SB 6, which have relevance to the redevelopment of failing shopping malls. It also briefly describes Enhanced Infrastructure Finance Districts and their potential relevance for the redevelopment of failing shopping malls. It briefly addresses the housing needs of college students in the State, and suggests potential partnerships between higher education institutions and owner-developers of failing malls.

### Method

The research included review of documents on HCD websites and other State agency websites dealing with housing deficits, and redevelopment, as well as periodicals, and for State housing initiatives, State legislation, Turner Center publications, and local newspapers. On new programs and legislation identified, the study reviewed new legislation, legal websites, and major State agency documents.



## California's Regional Housing Needs Allocation Assessments (RHNA) Program

Since 1969, California has required local governments to plan adequately for the housing needs of their communities through the housing elements of their general plans. The housing planning process in the state is complex, involving the state's planning office (California Office of Planning and Research, OPR), the California Department of Housing and Community Development (HCD), and regional Councils of Government (COGs). Local jurisdictions update their housing elements every five years and submit their draft housing plans to both OPR and HCD for review and approval. HCD, in consultation with each corresponding COG, determines the regional housing needs assessment (RHNA) by four income levels, i.e., very low-income, low-income, moderate income and above-moderate income for each region's COG. Regional COGs then allocate the housing needs for their region among all the jurisdictions within their region through their Regional Housing Needs Allocation Plan (RHNA). Through this process, each local government is assigned a proportionate share of the region's housing needs. Each local jurisdiction is required to prepare an annual progress report (APR) on their status and progress in implementing its housing element to CA HCD and OPR by April of each year. HCD provides access to these local progress reports through an open data dashboard (CA HCD 2022).

California is currently at the beginning of its 6<sup>th</sup> RHNA cycle, and DHCD's evaluation of local plans to meet their RHNA goals has become more rigorous.

## Criticisms, Recommendations, and Response

The RHNA process provides local governments with clear targets for affordable housing to meet the needs of different income groups in the State. However, the broader process (including the Housing Elements of local Plans), which the State uses to address the affordable housing needs of California, was recently criticized on several grounds by the Little Hoover Commission (3/2022). Under the system, local governments had to prove in the housing element of their local plans that "they have adequate capacity of developable sites" to meet their fair share of affordable housing units. The Commission study pointed out, however, that while DHCD had called for the construction of 180,000 new units of housing annually between 2015 and 2025 to meet the State's housing deficit, the State averaged 80,000 new units per year. Given this gap between need and attainment, the Commission pointed out that DHCD lacked a process for ensuring how much housing is built, and ways to enforce local governments' housing plans. The report recommended that the State develop "reasonable standards for when the State should sue non-compliant localities," and review CEQA to ensure that it is not used "to kill housing projects" (pp. 16-18).

The Association of Bay Area Governments (ABAG), however, indicated, in a recent publication (June 2021), that there are several penalties that DHCD can currently impose on local governments, including revoking a local government's housing element, and since a housing element is part of a local jurisdiction's General Plan, the Plan itself can be invalidated, which can result in various consequences: legal suits and attorney fees, loss of permitting authority,

financial penalties imposed by courts, court receivership, and streamlined ministerial process. In addition, the ABAG publication points out, the RHNA process provides interested parties, including the State of California, developers, third parties and individuals with the data needed to *sue* jurisdictions for failing to meet their housing obligations.

In November of 2021, Governor Newsom’s concern with the housing deficit in the State led him to launch a Housing Enforcement and Accountability Unit at CDHCD. This new unit at HCD has already begun to provide the oversight and enforcement that the Little Hoover Commission study calls for. The mission of the new Housing Accountability Unit (HAU) is to ensure that the Housing Elements of local governments will no longer be paper exercises, but “a contract with the State of housing commitments for 8 years” (CDHCD 2022b, p. 45).

According to the new unit’s website:

While education and technical assistance is always the first step in HCD’s accountability efforts, the HAU holds jurisdictions accountable for meeting their housing element commitments and complying with state housing laws. Violations of these state laws may lead to consequences including revocation of housing element certification and/or referral to the California Office of the Attorney General (CDHCD 2022b).

### Housing Deficits, Land Use Permitting and Zoning

There are two major ways in which zoning has contributed to housing deficits. First, California has a large percentage of its land zoned for single-family residential. In their 2018 study of local housing policies in California, a Turner Center survey (Mawhorter, Reid, et al. 2018) estimated that most of the land in California jurisdictions was zoned for single family residential, approximately, about two-thirds. Secondly, changing zoning from single-family to multi-family to increase density or from commercial to residential was typically a lengthy, costly, and sometimes contentious process.

The influential 2018 HCD housing assessment, *California’s Housing Future: Challenges and Opportunities* (2018) set out major housing challenges for the State, including lack of supply and continuing sprawl, and issues related to local permitting and zoning and their impact on the production and price of housing units. Its “Appendix B: Land Use Planning and Policy Influence on Housing Development,” made clear how at every stage of the residential development process, i.e., rezoning from low-density to higher density or from commercial to residential or mixed use faced multiple hurdles, e.g., overly restrictive development standards, fiscalization of land use, lack of implementation and enforcement of planning laws, uncertainty regarding approval of permits, lengthy environmental review process, community resistance, and lengthy processing and high fees.

The study likely motivated Sen. Atkins’s S.B.9 that has increased the potential for housing development in single- family residential areas (California Legislative Information 2022a). S.B. 9—The California Home Act—which allows homeowners in most single-family zoning districts to divide their property into two lots, and to build two housing units in each of the lots—to the

more recent legislative initiatives by Sen. Caballero and Assembly member Wicks, which allow residential development in commercial zones, including shopping mall commercial zones. However, the new laws are aimed at the scale of lots and their individual owners. Major shopping malls often average more than twice the size of an average residential subdivision (25 acres for an average residential suburban development vs. 40-100 acres for a regional mall, and 60-120 for a super-regional mall), with a single company as owner-developer responding to a REIT.

### Recent Legislation to Address the Local Development Process and Requirements for Housing

Sen. Atkins' S.B. 9, the California HOME Act, which, in effect, changes single family zoning into four-unit zones, could itself double, if not quadruple, housing in the State. However, the legislation, which became effective as of January 1, 2022, may not solve the housing crisis in California. The projection from a recent Turner Institute study is that the law is likely to produce 714,000 new units, but that even this result may take time (Metcalf, Garcia, et al., 7/2021; Alameldin and Garcia 6/8/22).

The other promising legislation and more relevant to our study addresses the local development process, which could have direct impact on the redevelopment of suburban malls' requirements for housing, consists of a paired set of bills, SB 6 (Caballero) and AB 2011 (Wicks) which will come into effect on 7/1/2023 allowing residential construction on commercially zoned land. AB 2011 (California Legislative Information 2022b) requires affordable housing and would exempt a project from the EIS process. AB 2011 sets short deadlines, requiring local agencies to complete their design review within 90 days for a project of 150 housing units or less, or within 180 days for larger projects. (Birkey et al. 2022)

SB 6 allows residential on commercially zoned property without requiring a rezoning or affordable housing and such changes may be eligible for streamlined, ministerial approvals (California Legislative Information 8/25/22). Although the bills are primarily geared to strip commercial development, SB 6 also applies to the redevelopment of suburban malls as commercially zoned land. Hamill (6/28/22), a land use attorney, identifies SB 6 as the "Dead Malls to Housing" Act. In effect, SB 6 allows housing development projects of up to 30 dus/acre on commercial project sites of 20 acres or less, or mixed-use developments consisting of residential and non-residential commercial, or office uses.

### Transit Rich Areas and Reduced Parking Requirements

AB 2097 introduced by Assembly member Friedman (California Legislative Information 2022c), which will come into effect in January 2023, will bar local governments from implementing parking minimums for projects within a half-mile of public transit or transit rich areas. Many major malls are transit hubs. Transit hubs could be interpreted as transit rich areas. If a shopping mall undergoing redevelopment as mixed-use is near a transit hub or transit rich area, this new legislation could have a positive effect in its redevelopment by reducing overall costs

for housing units. The required number of parking units in local jurisdictions is often based on the number of bedrooms in an apartment or housing unit. According to a recent study (Garcia and Tucker 4/13/2021), 63.6% of municipalities examined (a 264 sample of municipalities in California) required a minimum of two parking spots for a 2-bedroom apartment. The study estimates that a parking unit adds \$36K to the unit cost. This legislation could reduce the cost of housing units in the mixed-use redevelopment of suburban malls.

### The Potential Use of EIFDs

Tax increment financing (TIF) is a local financing tool used by local redevelopment agencies to redevelop an area in a locality that is economically depressed. California dissolved local redevelopment agencies as of 2/1/2012. But in 2014, legislation brought back tax increment financing with a new name, Enhanced Infrastructure Financing Districts (EIFDs). In California, as of 2018, EIFDs work by freezing tax revenues that flow from a project area to the city/county at the “base level” in the current year. The additional tax revenue in the future—the “tax increment”—is used to pay for improvements directly or to pay back bonds issued that are backed by the anticipated TIF revenues. TIFs in California are used to increase funding for infrastructure, land assembly, housing (SCAG 2022; CA OPR 12/29/2020; Bay Area Council Economic Institute 8/2018).

TIFs or EIFDs could potentially be used in the redevelopment of major shopping malls where the total sales and property values have declined significantly. Local governments could enter into partnerships with shopping mall owner-developers to finance the infrastructure required for mixed use redevelopment, including transportation infrastructure, public plazas, as well as the extension of water/sewage infrastructure, by issuing bonds that could be repaid with increases in property tax revenues resulting from the redevelopment.

### Redeveloping Malls with College Student Housing

College students in California also face a housing crisis, with many community and state colleges and universities lacking student housing. It is estimated that 20% of California community college students are homeless at one time or another. In addition, another 10% of Cal State students, and 5% of University of California students are estimated to be homeless (Burke et al., 9/28/22). The State has set aside funding for the next two years for colleges to invest in student housing. Sen. Wiener (2022) introduced a bill, which passed, to exempt college housing construction from the CEQA process. State funding, if renewed, would provide an opportunity for malls in need of redevelopment to enter into P3s with nearby colleges or universities that lack space on their campuses for housing. For example, a college could provide some funding for construction, the local government could potentially provide funding for infrastructure improvements, while the owner-developer could draw on private sources of funding, perhaps from its REIT, and could count on an ongoing clientele and the college’s housing services to problem-solve with tenant issues.

However, most colleges have large enough campuses to enable them to construct onsite. P3s have been used by colleges in cases where the college supplies the land, and the private developer supplies the funds for redevelopment. In the case of malls, the ownership of land is with the developer. Could the roles be reversed? Could a state agency assume some of the roles of the private sector, i.e., by providing some capital for redevelopment?

In addition, there is the option of converting some failing malls into new college campuses. There is at least one well-known example of the conversion of an entire shopping mall into a college campus for Austin Community College. In 2010, the College started buying sections of Highland Mall in Austin, Texas, and began opening college programs in the mall in phases, with laboratories for the nursing program, multiple kitchens for culinary students, and studios for radio, TV and film students until its grand opening as a full campus in the Spring of 2022 (McInerney 4/20/2022).

## Findings

California has a very large housing deficit, currently estimated at 2.5 million housing units over the next eight years. The State's RHNA process is the main process through which the State's DHCD provides local government targets and oversight for housing production to meet the housing needs of Californians. The RHNA targets that local governments set, until this past year, most often were not met. The system itself, as the Hoover Commission pointed out in its 2022 study, lacked enforcement power. To respond to this challenge, Gov. Newsom in 2021 established a Housing Enforcement and Accountability Unit at DHCD. This unit can revoke a locality's housing element and initiate legal suits against local jurisdictions that fail to develop adequate plans or implement such plans.

A recent UC Berkeley Turner Center survey estimated that about 2/3rds of the land in California jurisdictions are zoned for single-family housing. Both the prevalence of single family residential zoning and the difficulties in changing local zoning and permitting processes to increase the housing supply in the State has led to several new laws that permit up to four units in single family zones (S.B. 9 effective 1/1/22); a pair of laws (SB 6 and AB 2011) that allow housing construction on commercially zoned land; and a law (AB 2097) that bars local governments from requiring parking minimums, if a project is within ½ a mile of public transit, or in a transit rich area. By reducing parking requirements, AB 2097 could reduce the cost of housing units in redeveloped malls in transit rich areas.

Enhanced Infrastructure Financing Districts (EIFDs) are local financing tools that local governments could use to enter into partnerships with mall owner-developers to finance infrastructure needed for new housing development.

Noting the housing crisis among students in higher education, the chapter ends with a suggestion that failing malls could create opportunities for P3s between state higher education

institutions in need of student housing and shopping mall owner-developers in need of redevelopment.

## Chapter 3. Literature Review on Remote Work and Its Implications for Suburbanization

### Overview

The impact of Covid-19 on remote work has received much public and academic attention over the past two years. The studies and data analyzed in this literature review point towards a movement from working in offices to working remotely. While the trend of remote work was slowly increasing prior to the pandemic, the shock in the professional workplace of Covid-19 pushed remote work at a faster rate than seen in previous years. Mas & Pallais (2020) findings that between 2005 and 2015 only two to three percent of employees worked remotely seem to provide the most accurate pre-pandemic data and are quoted by other researchers. Data obtained during the pandemic has found a wider variation, with the general rate of remote workers around 35 percent (Bick et al., 2021). Future projections of remote work range from between 20 to 40 percent of workers. Throughout all three phases discussed below, the common thread is that the ability to work from home is dependent on the type of work, race, socioeconomic status, education, and location.

Data on Covid-19's impact on work trips and non-work trips and vehicles miles traveled indicates wider variation in the findings and will require further investigation, especially post-pandemic. The review of findings on vehicle miles travelled is framed as a timeline pre-, during, and post-pandemic. The literature analyzes pre-pandemic research starting in 2000 and finds that vehicle miles traveled (VMT) steadily increased during the years prior to Covid-19. According to Polzin & Choi (2021), when Covid-19 struck and once stay-at-home orders were in place, a sharp decline in VMT was evident during March and April of 2020, but after this initial period, VMT steadily increased again. Through November 2020 when some offices began opening back up, VMT increased slightly but did not recover to pre-pandemic levels (Polzin & Choi, 2021). Additional research is needed on recent VMT levels since 2021 and predictions post-pandemic. Based on newspaper articles and reports, there is an ongoing question of how workplaces will handle remote and in-person work options and mandates. As seen in articles in Appendix A, research conducted through June 2022, pointed towards a continued trend of working from home being at least an option for many employees in office and professional jobs. This research was expanded in October 2022 to take into account any recent publications. The major findings from this second scan of the literature include: the popularity and widespread adoption of work from home (WFH), as well as the likelihood of its staying power; the accompanying decrease in the use of office space in urban areas, and projections for the future value and location of office space. Of particular importance to this study is the effect of increasing rates of WFH on suburbanization and how this may impact the demand and type of commercial services in suburban areas.

## Methods

This literature review used the following search terms: remote work, work from home (WFH), COVID effects on remote work or work from home, as well as COVID effects on Vehicle Miles Traveled (VMT). We searched the following sources in June 2022, and then again in November 2022:

Major transportation journals, including *Transportation Research Part A: Policy and Practice*; National Bureau of Economic Research database; Google Scholar searches; Pew Research Center and Brookings Institution, as well as several periodicals, e.g., *New York Times*.

## Remote Work and COVID-19

### Remote Work Pre-Covid-19 Pandemic

Pre-Covid-19 data on the percentage of remote workers displays wide variation both in terms of statistics and analysis in peer-reviewed articles. This literature review investigates data from the researched articles collected from the biannual General Social Survey (GSS) between 2012 to 2018, the 2011 Current Population Survey Work Schedules Supplement (CPS WSS), the 2011 American Time Use Survey (ATUS), the 2016 American Community Survey (ACS), and the Understanding America Study (UAS)<sup>1</sup> to identify alternative work arrangement trends in the United States. Between 2000 to 2020, Mas & Pallais (2020) examines alternative work arrangements trends for working-from-home (WFH) classifying jobs as “traditional” or “nontraditional.” According to their definitions, the 2014 GSS Quality of Worklife Survey (QWS) found 38 percent of workers had traditional jobs versus nontraditional jobs. They define a traditional job according to Abraham et al. (2018, 1) as one that “pays a wage or a salary, often has an implicit or explicit contract for a continuing employment relationship, has a predictable work schedule, predictable earnings, and work supervised by the firm paying the salary”. For the 20 years prior to the pandemic, they find work arrangements have been relatively stable. Between 2005 to 2015, Mas & Pallais (2020, 19) found the fraction of workers frequently WFH increased a total of only two to three percent. They attribute the factors most impacting the ability to WFH as varying substantially based on education, schedules, location, and high-speed internet access. Their analysis also provides a thorough review of conditions and factors that contribute to the possibility of WFH, including traditional versus nontraditional jobs, demographics, and industry. The study is limited to highlighting employees' WFH history and requires further research on how employers viewed WFH between 2000 and 2020<sup>2</sup>. Using the 2018 ATUS, Dingel & Neiman (2020, 4) report less than a quarter of full-time employees WFH on an average day and less than half of this population reports they spend less than half their workday at home. Guyot & Sawhill (2020) from the Brookings Institute cite the same 2018 ATUS study and report above the age of 15, 24.8 percent of workers reported WFH. Bick et al. (2020) use the Real-Time Population Survey (RPS) of all the U.S. from the Federal Reserve Bank of Dallas and find only 8.2 percent of workers worked remotely in February 2020 (3). Between 2017 to 2018, approximately 10.2 percent of workers spent at least part of their work day working from home (ATUS 2017/18, see Table 1 below.)

**Table 1: Pre-COVID Evidence of Home-Based Work (Source: Bick et al., 2020, p. 5)**

	RPS Feb 2020	SIPP 2010	ATUS 2017/18
a. Commuting to Work Every Day (%)	75.4	91.0	87.0
Commuting on Some Days (%)	16.4	2.8	10.2
Working from Home Every Day (%)	8.2	6.6	2.8
b. Avg. Days Worked per Week	4.8		4.7
Fraction of Work Days Commuting (%)	85.0		84.2
	NHTS 2017	ACS 2018	Brynjolfsson et al. (2020)
c. (Usually) Working from Home (%)	11.9	5.0	14.6
Option of Working from Home (%)	16.3		

### Early and More Recent Covid-19 Remote Work Rates

Bick et al. (2020) use data from 5,000 working age survey respondents to the Real-Time Population Survey (RPS) and the National Household Travel Survey (NHTS) to predict early and remote work trends during the Covid-19 pandemic. Comparing against pre-Covid-19 pandemic data from February 2020 of 8.2 percent of the workforce WFH, Bick et al. (2020) find 35.2 percent of the workforce worked entirely from home in May 2020 and “the total number of weekly commuting trips in May declined by 51.9 percent compared to February 2020 (p. 6). Bick et al. (2020) also present additional data from the Dallas Department of Transportation’s 2017 NHTS that 11.9 percent of workers that could work remotely were doing so at that time while 16.3 percent of workers had the option to do so (p. 4). In June 2020, Bick et al. (2020) surveys “suggest that about 40 percent of both large and small firms expect that forty percent or more of their workers who switched to remote work during the crisis will stay doing remote work after the crisis” (16).

Research by Dingel & Neiman (2020) in June 2020 is the most cited source for determining the number of jobs which can be performed remotely. Their research question of “how many jobs can be performed at home?” builds upon uncertainties of the Covid-19 pandemic on remote work capabilities. Using the 2018 ATUS, and based on the U.S. Dept. of Labor’s O\*NET database which has physical and social descriptors for almost 1,000 occupations, Dingel & Neiman (2020) found that in June 2020, 37 percent of jobs in the United States were able to be performed entirely at home. In their analysis, they find disparities in the distribution of types of jobs along racial, gender, and socioeconomic characteristics (4). Holding constant the number of work hours, 37 percent of jobs which can be done from home encompass 46 percent of all wages (p. 4). Table 2 below is reproduced from Dingel and Neiman (5) showing the share of occupations



that can be done at home (O\*NET-derived baseline column). For example, their analysis concludes that Computer and Mathematical Occupations can be carried out totally from home, 87% of Management Occupations can be done from home, while only 3% of the work in Transportation and Material Moving Occupations can be done from home. Note that the share of most occupations that can be carried out from home most of the time are typically occupations that require higher education, with higher salaries.

**Table 2. Share of jobs that can be done at home, by occupation’s major group (Dingel and Neiman (2020, 5)**

Table 1: Share of jobs that can be done at home, by occupation’s major group

Occupation	O*NET-derived baseline	Manual assignment
15 Computer and Mathematical Occupations	1.00	1.00
25 Education, Training, and Library Occupations	0.98	0.85
23 Legal Occupations	0.97	0.84
13 Business and Financial Operations Occupations	0.88	0.92
11 Management Occupations	0.87	0.84
27 Arts, Design, Entertainment, Sports, and Media Occupations	0.76	0.57
43 Office and Administrative Support Occupations	0.65	0.51
17 Architecture and Engineering Occupations	0.61	0.88
19 Life, Physical, and Social Science Occupations	0.54	0.36
21 Community and Social Service Occupations	0.37	0.50
41 Sales and Related Occupations	0.28	0.21
39 Personal Care and Service Occupations	0.26	0.00
33 Protective Service Occupations	0.06	0.00
29 Healthcare Practitioners and Technical Occupations	0.05	0.06
53 Transportation and Material Moving Occupations	0.03	0.00
31 Healthcare Support Occupations	0.02	0.00
45 Farming, Fishing, and Forestry Occupations	0.01	0.00
51 Production Occupations	0.01	0.00
49 Installation, Maintenance, and Repair Occupations	0.01	0.00
47 Construction and Extraction Occupations	0.00	0.00
35 Food Preparation and Serving Related Occupations	0.00	0.00
37 Building and Grounds Cleaning and Maintenance Occupations	0.00	0.00

NOTES: This table reports the share of jobs that can be done at home for each 2-digit SOC major group. We aggregate our 6-digit SOC classification using the employment counts in the BLS’s 2018 Occupational Employment Statistics. The O\*NET-derived classification in the first column is the basis for all subsequent results reported in this paper. The results using the manual assignment, reported in the second column, are available in our replication package.

Dingel & Neiman (2020) expand upon this analysis with data from the ACS 2014-2018 5-Year Estimates for metropolitan areas by reporting the top and bottom ten U.S. cities in which remote work is possible. They also provide data on educational attainment, median income, the percentage of white workers, and the number of owner-occupied housing units (p. 8).

**Table 3: Share of jobs that can be done at home, by metropolitan area (Dingel & Neiman, 2020, 7)**

	Share of jobs		Metropolitan characteristics			
	Unweighted	Weighted by wage	BA share	Median income	White share	Owner share
<i>Top ten</i>						
San Jose-Sunnyvale-Santa Clara, CA	0.51	0.66	0.50	115	0.46	0.57
Washington-Arlington-Alexandria, DC-VA-MD-WV	0.50	0.64	0.51	101	0.54	0.63
Durham-Chapel Hill, NC	0.46	0.57	0.47	60	0.62	0.60
Austin-Round Rock, TX	0.46	0.58	0.44	73	0.77	0.58
San Francisco-Oakland-Hayward, CA	0.45	0.58	0.49	100	0.50	0.54
Boston-Cambridge-Nashua, MA-NH	0.44	0.55	0.47	86	0.76	0.62
Bridgeport-Stamford-Norwalk, CT	0.44	0.58	0.47	93	0.73	0.67
Hartford-West Hartford-East Hartford, CT	0.44	0.53	0.39	76	0.76	0.67
Salt Lake City, UT	0.43	0.53	0.34	71	0.80	0.67
Des Moines-West Des Moines, IA	0.43	0.53	0.37	69	0.87	0.69
<i>Bottom ten</i>						
Baton Rouge, LA	0.30	0.36	0.28	57	0.59	0.68
Las Vegas-Henderson-Paradise, NV	0.30	0.37	0.24	57	0.61	0.53

The table makes clear several points. The opportunity for remote work is greater, about 1.7 times greater in metropolitan areas where the median income and the share of workers with higher education is twice as high as in the bottom 10 metro areas. But note that the share of white workers in the top ten metro areas is lower than the share of white workers in the bottom ten metro areas. Also important is that home ownership is higher in many of the bottom ten metro areas than in many of the top ten metro areas (averaging 56% in the top ten, vs. 58% in the bottom ten).

Building from Dingel & Neiman (2020), Bartik et al. (June 2020) analyze two survey populations to investigate early Covid-19 remote work trends and data. For one population, they conducted a survey in March 2020 of 1,770 small business leaders in the Alignable network along with 70 business economists from the National Association of Business Economists (NABE). They followed up eight weeks later in April 2020 during stricter stay-at-home orders (2). In comparison to Dingel & Neiman's (2020) research which found that 37% of jobs could be performed at home, their survey found 27 to 31 percent of employees in the sample could "feasibly work remotely" (2). They also found education and socioeconomic status to be a predictor in remote work capabilities. Bick et al. (2020) also builds on Dingel & Neiman (2020) finding in May 2020, that 71.7 percent of potential home-based employees could work remotely (3).

Using 43,000 participant responses from the Survey of Working Arrangements and Attitudes (SWAA), Barrero et al. (2021a) find half or more workdays in spring 2020 where work was conducted at home. They also report this is ten times the pre-pandemic data for remote work. Their study used data through spring 2021 finding only a slight decline to 40 percent of workdays being conducted from home. Barrero et al. (2021a) also find supporting claims that several factors determine the possibility of working from home, including wage, education, and internet quality.

## Future Remote Work Projections

When the pandemic began, Dingel & Neiman (2020) predicted 37 percent of U.S. jobs will be able to done from home, using data from the 2018 ATSU survey and the U.S. Bureau of Labor Statistics (BLS). In Dingel & Neiman’s (2020) analysis, they examine the potential to WFH with significant variation across cities and industries. In California, two metropolitan areas rank in the top ten areas in the United States for WFH potential. The top metropolitan area with the highest potential to work remotely is San Jose-Sunnyvale-Santa Clara at 51 percent unweighted, and at 66 percent weighted by wage (p. 7). The fifth highest ranking area is San Francisco-Oakland-Hayward at 45 percent unweighted, and at 58 percent weighted by wage (p. 7). Three California metropolitan areas also emerge in the top ten areas with the lowest potential to WFH. Riverside-San Bernardino-Ontario area ranks as the eighth lowest with 30 percent unweighted, and at 35 percent weight by wage. The Bakersfield area ranks as the third lowest at 29 percent unweighted, and at 36 percent unweighted, followed by the Stockton-Lodi as the second lowest at 29 percent unweighted, and at 33 percent weighted by wage. The study by Dingel & Neiman (2020) indicates wealthier metropolitan areas in California may be best prepared to establish more permanent work-from-home patterns. Several authors cite the study by Dingel & Neiman (2020), including Barrero et al. (2021a) and Barrero et al. (2021b) and build on their work.

Early in the pandemic in June 2020 using data from National Association of Business Economists (NABE) surveys of firms, Bartik et al. (2020) “suggest that about 40 percent of both large and small firms expect the forty percent or more of their workers who switched to remote work during the crisis will stay doing remote work after the crisis” (p. 15). The data suggests that 16 percent of United States workers will switch from office to remote work at least two days per week due to the societal and cultural impact from Covid-19 (p. 15). The findings on the number of future remote workers working approximately two days per week are supported by fellow researchers. Barrero et al. (2021a) and Barrero et al. (2021b) find approximately 20 percent of paid workdays will be conducted at home in the post-pandemic economy.

In predicting future WFH abilities in the post-pandemic economy, Barrero et al. (2021a) use data from Survey of Working Arrangements and Attitudes between December 2020 to May 2021. The authors predict WFH employees “will account for 21.9 percent of full paid workdays in the post-pandemic economy, 27.7 percent on an earnings-weighted basis” (p. 8). As seen in Table 3 below, Barrero et al. (2021a) find a steady increase in remote workers during the pandemic and an increase from 4.8 percent to 21.9 percent pre- and post-pandemic on an equal-weighted scale. When factoring earnings-weighted, they did not include pre-Covid-19 data, although they found 27.7 percent of employees being able to work remotely. It should be noted that the data is based on the percentage of full paid work days, not the number of workers. Barrero et al. (2021b) analyze 30,000 responses from the SWAA between May 2020 and April 2021 finding similar results to the study by Barrero et al. (2021a).

**Table 4: Working from home before, during, and after the COVID-19 pandemic (Barrero et al., 2021a)**

Percent of full paid days worked from home					
	Pre-COVID		During COVID		Post-COVID
Equal-weighted	4.8	47.4	(0.3)	21.9	(0.3)
Earnings-weighted	--	54.4	(0.3)	27.7	(0.3)

Percent of full paid days worked from home					
Education	During COVID		Post-COVID		
Less than high school	24.6	(2.8)	12.8	(2.3)	
High school	32.0	(0.7)	15.5	(0.6)	
1 to 3 years of college	40.4	(0.6)	18.6	(0.5)	
4-year college degree	57.9	(0.5)	27.2	(0.5)	
Graduate degree	63.4	(0.4)	30.7	(0.5)	

*Notes: The pre-COVID estimate for the extent of WFH relies on data from the 2017–2018 American Time Use Survey, as described in Barrero, Bloom, and Davis (2021). Estimates for “During COVID” rely on data from the May 2020 through May 2021 waves of the SWAA. Estimates for “Post-COVID” rely on worker responses to questions about employer plans in the six most recent waves of the SWAA, namely December 2020 to May 2021. We re-weight raw responses in the SWAA to match the share of working-age respondents in the 2010–2019 CPS in each {age x sex x education x earnings} cell. Standard errors in parentheses.*

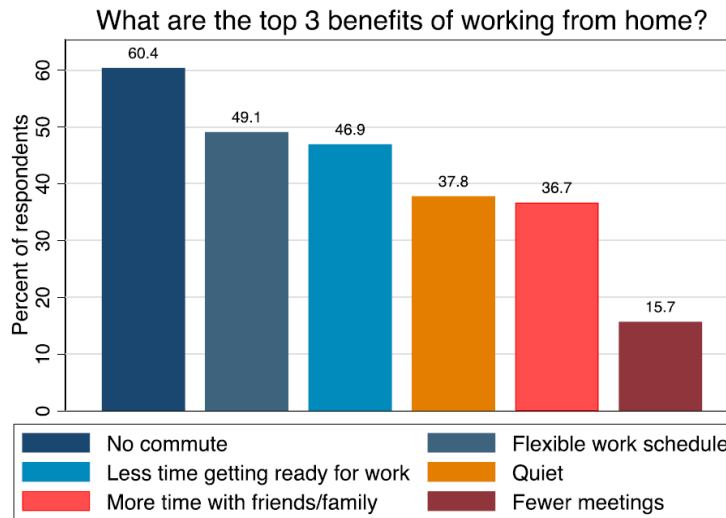
The findings from a recent experiment (Bloom, Han and Liang 7/2022) provide evidence of how working from home is working out in a firm of engineering, marketing and finance employees in a global travel agency with 35,000 employees. The firm conducted a randomized control trial (employees whose birthday fell on an odd day worked from home on Wednesdays and Fridays, and those whose birthday fell on an even day worked full time in the office). Major results from the study were:

- WFH reduced attrition rates by 35%; reduced hours worked on home days, but increased on other workdays and on weekends;
- WFH workers increased individual messaging and group video call communication, even when in office; increased lines of code written by 8% and self-assessed a productivity increase of 1.8%

When the hybrid experiment ended, the firm extended hybrid WFH to the entire company. This study is notable in that the workers in the study require significant collaboration and that collaboration increased as a result of the WFH employees. Prior studies on WFH focused on workers who did not require significant collaboration, such as call center employees or patent examiners.

In an appendix to the study, Bloom et al. (7/22) present the findings from Bloom’s survey of almost 3,000 workers who worked from home at some point since the start of COVID on what the workers thought were the main benefits of WFH. Important for this research is what workers responded as the top benefit of working from home: no commute!

**Appendix A10: US employees report the main benefits of WFH are reduced commute and more flexible work schedules**



**Notes:** The sample includes respondents to the February 2022 SWAA who passed the attention check questions and worked from home at some point since the start of the COVID-19 pandemic. The SWAA samples US residents aged 20 to 64 who earned \$10,000 or more in 2019. **N = 2,973.**

Source [www.vfhrefsearch.com](http://www.vfhrefsearch.com)

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**Figure 1. US Employees Report the main benefits of WFH are reduced commutes and more flexible work schedules (Bloom, Han and Liang 2022)**

**Impact of Remote work on the Commercial Office Sector**

Gupta, Newman, and Van Nieuwerburgh (9/22) focus on the impact of remote work on the commercial office sector in urban areas. This is relevant for at least two reasons: it is a good indicator of how permanent a trend WFH will be beyond COVID, becoming a significant and permanent trend for office workers; and also, the office sector in suburban areas may be similarly affected. They find that there were large changes in lease revenues, office occupancy, lease renewal rates, lease durations and market rents as firms shifted to remote work, including:

- The pandemic led to a drop in physical office occupancy in major office markets in the US from 95% in February 2020 to 10% at the end of March 2020, and by mid-September 2022, occupancy only reached 47%;
- Many firms have announced permanent remote or hybrid work arrangements and several have begun to shrink their physical footprint;
- The authors estimate that the pandemic has decreased the value of office buildings in their US dataset in the short run by 44.88% (\$184.27B), and by 39.18% (\$161.15B) in the long-run.
- There are growing concerns that commercial office buildings may become stranded assets, raising the question whether such offices will need to be repurposed towards other uses. Unless quickly repurposed, commercial office buildings will pose fiscal challenges for local governments who significantly rely on property tax revenues from commercial offices to provide goods and services.

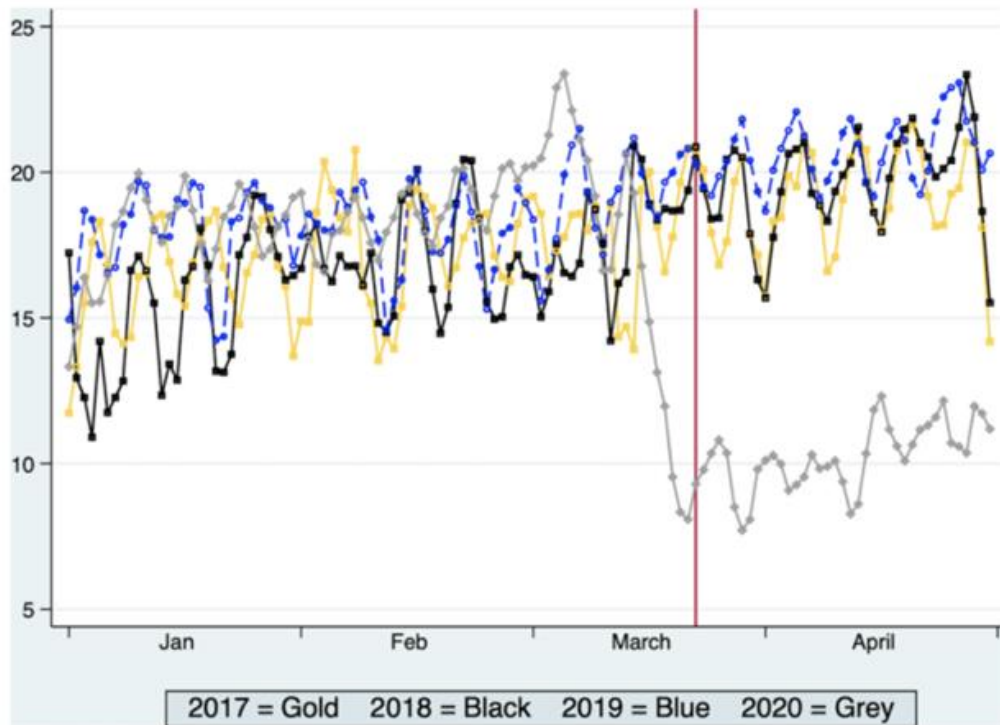
Concerns about the effect of WFH's effect on cities' urban core have been the subject of many newspaper articles in several cities. A *Philadelphia Inquirer* journalist, Saffron (July 24, 2022) suggests that Philly's anxiety over empty offices could become an opportunity to attract residential development. In the *Los Angeles Times*, Vincent (Sept. 14, 2022) documents how LA offices are already being converted into apartments. But can office to housing conversions in urban areas fully address the housing deficit in California, which is projected to be 3 million units or more? A recent RAND study (Ward and Schwam 2022) focuses on this issue for the LA area. The study identified 2,300 underutilized office properties, which, if converted to residential uses could produce from 72,000 to 113,000 residential units in LA County. This would amount to 9-14% of the total housing that LA County needs to produce over the next 8 years to meet the State's housing targets. However, Ward and Schwam (2022, 2) make clear that hotel/motel properties (not office buildings) are most feasible for conversion. The study points out that, "The feasibility of office properties varies, with larger (one- and two-bedroom) apartment types generally appearing to be financially infeasible but with studio apartments showing more promise."

## Effect on Work-Trips & Non-Work Trips/Vehicle Miles Traveled

### A. Pre-Covid

Polzin & Choi (2021) examine vehicles miles traveled (VMT) by utilizing data from the BTS and the NHTS prior to the onset of the Covid-19 pandemic in two-year span sets: (1) 2010 to 2016, and (2) 2016 to 2019 (p. 6). Figure 3 provides data from the Federal Highway Administration (FHWA) shows that from 2010 to 2016 VMT increased by 7 percent, an annualized change of 1.1 percent. Between 2016 to 2019, VMT increased at the same rate with a 3 percent increase and an annualized change of 1 percent.

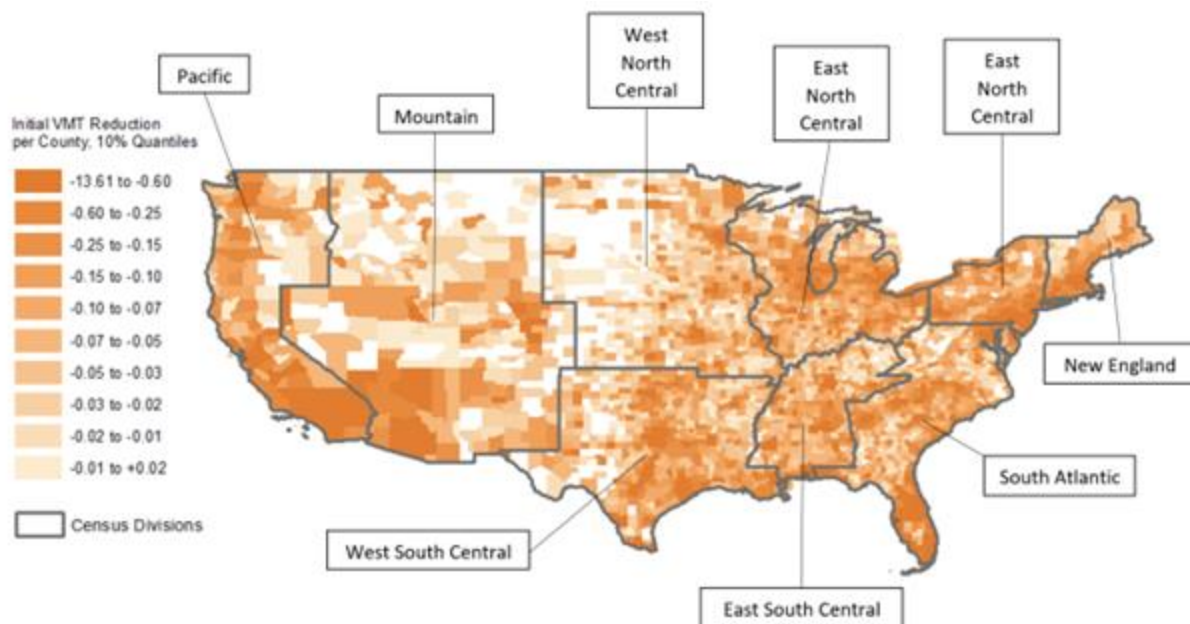
While VMT saw a continuous increase, case studies demonstrate examples of journey-to-work VMT reductions during this time. Choudhury (2021) cites that United States Patent and Trademark Office (USPTO) found in 2015 that their remote workers reduced their workplace VMT by 84 million miles. Findings by Douchete et al. (2021) compliment research by Polzin & Choi (2021). In Connecticut between 2017 and 2019, Douchete et al. (2021) found that VMT "continued on a slightly upward trajectory" (p. 4). Figure 2, below, provides data from 2017 to 2019 showing the continual increase during this time period. When statewide stay-at-home orders were implemented, VMT drastically decreased in the state (Figure 2).



**Figure 2. Daily VMT estimates per 100 million in Connecticut, January - April 2017 - 2020 (Douchette et al., 2021, 5)**

### B. Early Covid-19 Data

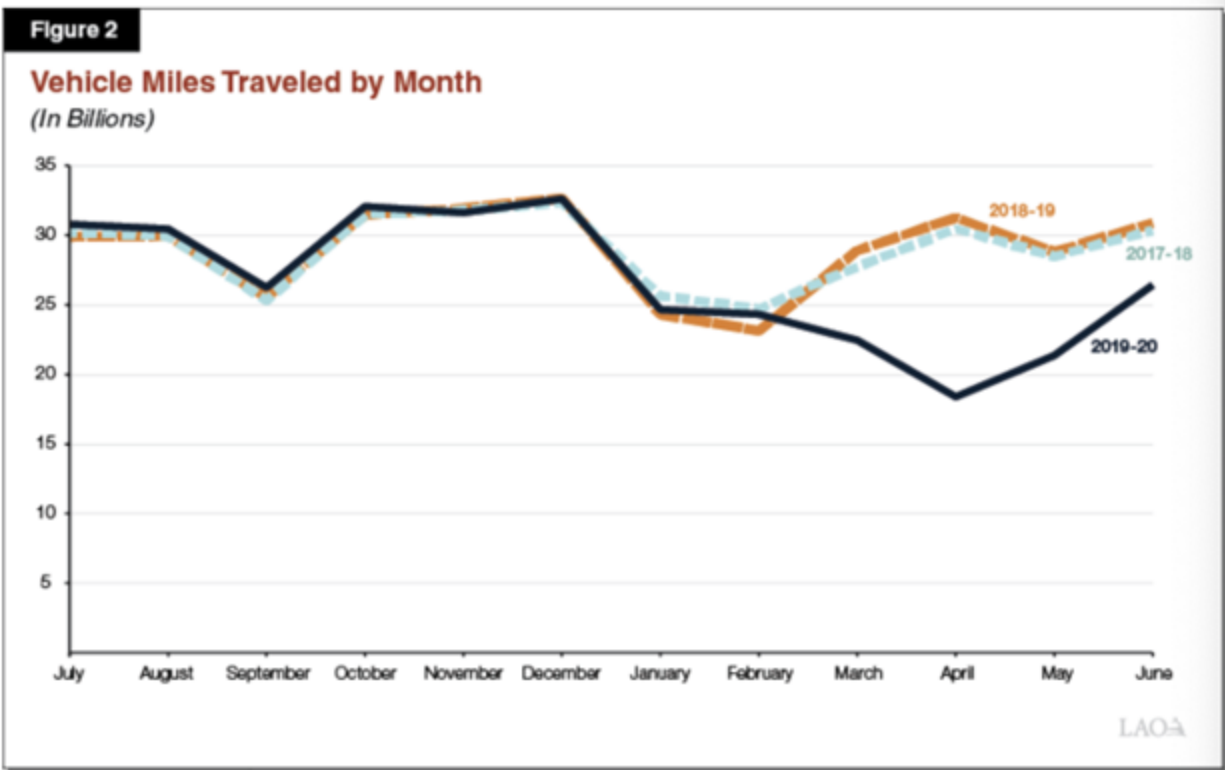
Polzin & Choi (2021, 8) state that during the most extreme stay-at-home orders, personal VMT was down 40 percent below pre-Covid-19 (February 2020) levels in the United States. However, household travel was the least impacted of the transportation modes they analyzed, which included household vehicles, commercial vehicles, heavy vehicles, domestic air, rail, and public transit (8). Douchette et al. (2021, 3) analyze data from forty-two (42) states between March and April 2020 finding that “the mean daily VMT significantly decreased 43 percent” during this time period. Fisher & Lamondia (2021) also utilize data from between March 1, 2020, to April 21, 2020 to analyze reductions in VMT. They find evidence of decreased VMT in a “majority of counties, especially urban counties” (3). Figure 3 below demonstrates the reduction of travel measured during this time. California had a much higher rate of decreases than most of the rest of the United States.



**Figure 3. VMT reaction rates by county (census division outlined in grey) (Fisher & Lamondia, 2021, p. 9)**

Fisher & Lamondia (2021) partially attribute this reduction difference to their hypothesis that higher density areas have a greater incentive to work-from-home than lower density areas in order to limit the spread of Covid-19. During this same time, from early March to mid-April 2020, Shilling (2020) found that total VMT for all the U.S. categorized by state and the District of Columbia declined by a rate between 61 to 89 percent (p. 4). Using data from Streetlight.com, Schilling finds total VMT reduced across the United States from 103 billion miles during the period of March 2 to March 8, 2020, to 29 billion miles during April 11, 2020, to April 17, 2020, a 71 percent reduction (p. 4). In California, Schilling (2020) finds VMT reduced by 75 percent (p. 4). During this time, the California Legislative Analyst's Office (LAO) found that April 2020 showed the peak decline in total VMT, 41 percent lower than that time during the previous year (LAO, 2020). As shown in Figure 4, while California then experienced an increase through June 2020, VMT was down by 14 percent compared to June 2019 (LAO, 2020).





**Figure 4. VMT by month in California (in billions) 2017-2018, 2018-2019, and 2019-20 (LAO, 2020)**

The Southern California Association of Governments (SCAG) reports that in their region, the lowest VMT was experienced during the week ending on April 11, 2020 (SCAG, 2020, p. 3). The Bureau of Transportation Statistics reports that VMT was the lowest for California on April 5, 2020, aligning with SCAG’s estimates. Using January 2020 as a benchmark, the SCAG region in April 2020 experienced an almost an 80 percent reduction in VMT (SCAG, 2020, p.2). Ever since, there has been a 2.9 percent weekly increase in VMT indicating that people have begun traveling more (SCAG, 2020, 3). Overall, VMT in the SCAG region has returned to pre-pandemic levels.

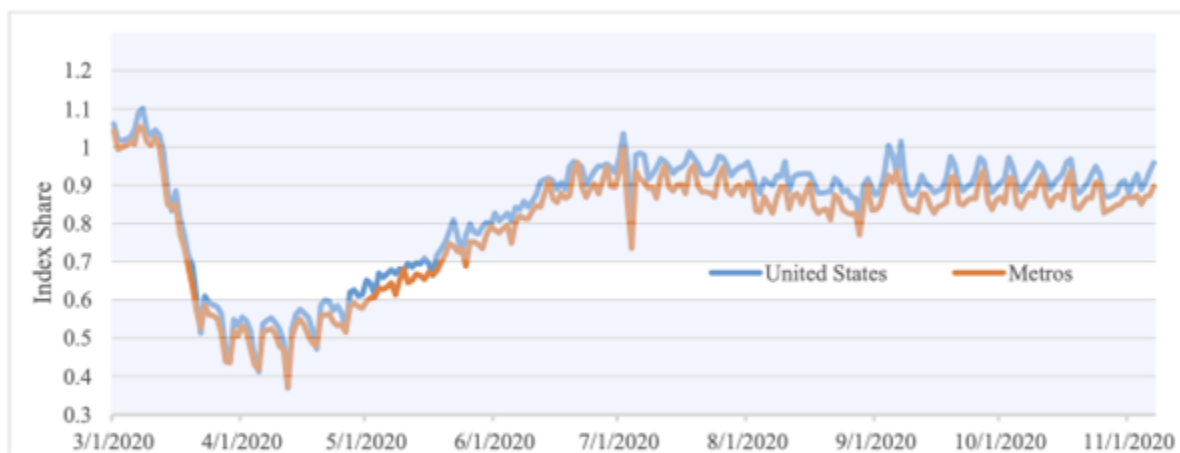
At a local level, Yadev et al. (2020) studied the Los Angeles and DC/Baltimore areas. Using VMT/VHT (vehicle hours traveled) from 2018 and 2019 as a baseline, Los Angeles experienced a 17 to 23 percent decrease in VMT/VHT in March 2020 and then a 33 to 42 percent decrease in April 2020 (Yadev et al., 2020, p.7). Such a drop in VMT is significant as “on-road emissions” produce 45 percent of all emissions in these two areas (p. 2). Covid-19 caused declines of 30 percent of emissions in both Los Angeles and DC/Baltimore (p. 8). Delventhal et al. (2021) attribute the decrease in VMT to the increase in telecommuting. Their model, focused on the Los Angeles-Long Beach Combined Statistical Area, assumes an increase in telecommuters from the current 3% to 33%, and a significant drop in total VMT. This drop in total VMT, according to

the model, would be good news for workers who still have to commute, since they would face lighter traffic, decreasing their commute time. The model also assumes that those who do not need to commute everyday will move further out, which will increase the length of their work trips on the days that they do commute. While individuals who telecommute will see a one-kilometer increase, “the total amount of kilometers traveled falls by 29 percent, which suggests possible environmental benefits of the increase in telecommuting” (Delventhal et al., 2021, 7). The environmental benefits alluded to include reduced GHG emissions, as well as reductions in other air pollutants. Ultimately, if 33 percent of Angelenos begin working remotely, according to Dingel and Neiman’s (2020) assumption, then it is possible there will be an urban exodus of workers who have the job flexibility and income to leave metropolitan centers (Delventhal et al., 2021). Several studies, including Musulin (2021), Delventhal et al., (2021), and Yadev et al. (2020) draw a direct connection between a reduction in VMT/VHT and decreased emissions.

Overlapping and slightly after the time period by the aforementioned researchers, Rafiq et al. (2022) examine the impacts of remote work on “activity-based travel behavior during the pandemic” between April 15, 2020 to June 9, 2020 (pp. 35-36). The research team uses a structural regression model using a cross-sectional data approach for early pandemic data from the Maryland Transportation Institute and Google Mobility Reports. They find that “WFH contributed to a reduction in workplace visits. It also reduced non-work activities but only via a reduction in non-work activities linked to work (p. 35). They also found that “a higher working from home proportion in a county corresponded to a reduction in average person-miles traveled” (p. 35). In measuring VMT and PMT for non-work participation, Rafiq et al. (2022) found that, “WFH negatively affected non-workplace visits only indirectly via workplace visits. This, in turn, led to a reduction in average PMT, but only for metropolitan counties” (p. 51). The researchers also found that “in non-metro areas, a lower work and non-work participation corresponded to higher PMT values” and “lower non-work participation and higher work participation contributed to higher PMT values” (p. 50). They interpret this by understanding it implies “the reduction in non-workplace visits did not reduce the average distance traveled per person in a county unless the work or non-work trips that were made were associated with a shorter commuting distance” (p. 50) The researchers “observed a positive correlation (0.321) between non-work participation and the average distance traveled per person in metropolitan areas, whereas the correlation between the same two variables is negative (-0.199) for non-metropolitan areas” (p. 50). Overall, their research finds “the greater a county’s WFH population, the greater the reduction in average person-miles traveled, a negative total effect” (p. 51).

Polzin & Choi (2021) conclude with similar findings. Figure 5 represents “personal VMT in the 98 metropolitan areas which they (INRIX) track are reporting lower levels of recovery compared to the country as a whole” (p. 14). The data finds from June 1, 2020 through the first week in November, VMT in the U.S. is at nearly 92 percent pre-pandemic levels and 87 percent for metro areas (p. 14). Compared to 2019 data by the FHWA, in August 2020, “the rural share of all VMT was nearly 32 percent, approximately a one percent higher share than in 2019” (p. 14).

Additionally, for metropolitan area data, Polzin & Choi (2021) find “metropolitan area traffic volumes lag below the national total by approximately 4.5 percent since June 1, 2020” (p. 16). These findings by Polzin & Choi (2021) suggest stay-at-home orders have a greater impact on metropolitan areas versus non-metro. This research provides evidence that development in metropolitan areas reduce VMT overall.



Source: INRIX Travel Trends Data. <https://iq.inrix.com/>

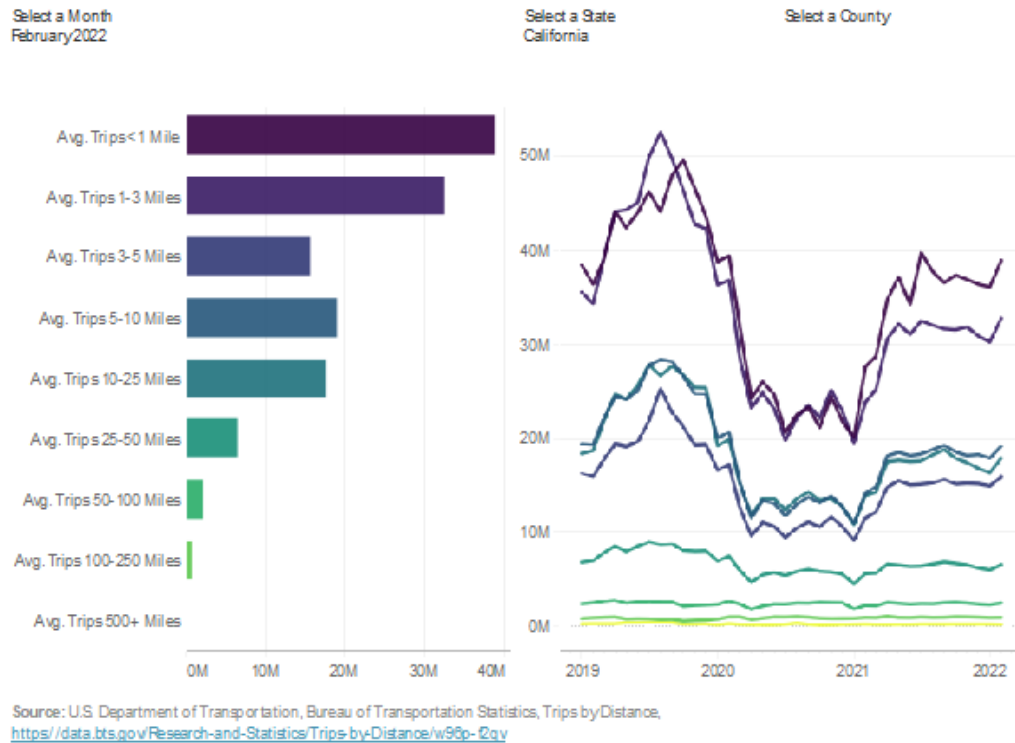
**Figure 5: Personal VMT trends for U.S. versus metropolitan areas (Polzin & Choi, 2021, p. 16)**

### VMT Reductions Mid-Covid-19 Pandemic and Recovery Period: November 2020 – mid- 2022

Research by Polzin & Choi (2021) and Barrero et al. (2021b) provide some background and predictions. For example, according to Polzin & Choi (2021), a credible prediction is the following: “it is reasonable to assume that VMT reductions due to communication substitution [work from home] of 2 to 6 percent and perhaps a reduction of 1 to 2 percent due to a less robust economy will result in VMT levels remaining below their prior 2019 peak for several years” (22).

In California, persons staying at home went from 19-20% before the epidemic to 34% at the height of the epidemic in January 2021, and have averaged about 25% from April 2021 to April 2022 (US Dept of Transportation 10/30/22). Decreases in the type of trip by distance traveled also fell during this period in California, with the steepest drop in trips that averaged 3 miles or less (from about 50 million trips to close to 20 million trips). Trips that averaged from 5-50 miles, likely most suburban commuting trips, dropped by half or more (from 28 million to 10-15 million). See Figure 6 below, which charts the average trips per day in California by distance band. These statistics support Polzin and Choi’s prediction that WFH is likely to keep VMT levels below their peak in California for several years.

### Average Trips per Day by Distance Band



**Figure 6. Trips by Distance Traveled 2019-2022 in California (US DOT, 2022)**

### Findings

Before the pandemic, 2.8% of employees surveyed through the American Time Use Survey (2017/2018) reported that they worked at home every day, and 10.2% reported that they worked at home on some days only. The pandemic led to the widespread adoption of working from home, to a large extent among professionals and office workers, reaching rates of 20-40%. The rates of remote work varied depending on types of work, socio-economic class, race, education, and location.

With the increase in remote work at the height of the pandemic in 2020, total vehicle trips and VMT dropped in California and throughout the United States. In California, there was an increase in people staying at home, from 19-20% before the pandemic, to 34% at the height of the pandemic in 2020, and have averaged around 25% through April, 2022. Trips that averaged from 5-50 miles in California, most likely suburban work trips, had the largest decrease, dropping by half at the height of the epidemic.

If WFH has a significant lasting effect past the pandemic, office development in cities may provide opportunities for office to housing conversions. This was the subject of several

newspaper articles in Philadelphia and Los Angeles. However, a 2022 Rand study (Ward and Schwam 2022) concluded that hotel/motel properties, not office buildings, are most feasible for conversion to housing.

To what extent the increases in working from home during the pandemic “stick” is still to be determined, but many businesses have experimented with WFH and, as Bloom, Han and Liang (7/2022) profile in their study, may continue such work policies after the epidemic.

The significance of the increase in WFH during the pandemic, and whether this trend will “stick” post-pandemic is of great importance to the increasing move to the suburbs, also experienced during the pandemic, the subject of the next chapter.

## Chapter 4. Literature Review on Move to the Suburbs

### Introduction

Closely connected to the impacts of COVID on cities and on remote work or work from home (WFH) is their impact on moves from urban to suburban areas. This section of the literature review is focused on the extent to which the COVID epidemic has caused or will cause or increase urban population moves to the suburbs. After a brief introduction to the concept of suburbs, including the widespread public identification with suburban living across the country, the review will focus on research that addresses:

1. COVID and the Central City Exodus, whether this is a new trend and whether it is temporary or permanent.
2. Whether moves from Cities to Suburbs during COVID are Significant. And whether they will Stick.
3. Sociodemographic Disparities in WFH.
4. Strategies that Could Make the Suburbs More Livable, Sustainable, and Facilitate Remote Work through the conversion of suburban shopping malls into mixed-use centers.
5. GHG and Climate Change Potential Benefits from Increases in WFH.

As already discussed in Chapter 3, opportunities for remote work are not equal across occupations and jobs, and favor occupations at the higher end of educational attainment, which, typically, have higher salaries. Increasing the rates of remote work among workers with higher education will aggravate standing inequalities between workers whose jobs require higher education and those that do not. This is recognized (see Section 3 in this literature review), but not well-addressed, or even addressed by most of the literature we surveyed.

### Methods

This literature review used the following search terms: suburbs COVID U.S.A.; move to suburbs; move to suburbs COVID; pandemic suburbs USA, pandemic suburbs America, VMT COVID USA, miles traveled COVID USA; VMT COVID California; COVID impact on traffic patterns; COVID-19

impact California move suburbs; pandemic California move suburbs; and Vehicle Miles Traveled California pandemic.

The review included searches in the following sources: major urban affairs, urban geography, and urban planning and transportation sources, such as, *Urban Studies, Environment and Planning B, Urban Affairs, Journal of Urban Economics*; the National Bureau of Economic Research database; Google Scholar searches; Pew Research Center and Brookings Institution research studies, as well as several periodicals, e.g., *New York Times, the Washington Post, Bloomberg News*.

## Suburban Populations Before COVID

Although there are many ways to define suburbs (Forsyth 2019; Fillion 2018), suburbs are often defined as low-density, residential areas, most often with single family detached housing located in the outer rings of metropolitan areas. Suburban locations became very attractive to US households after WWII, when middle-class families were able to afford automobiles for their commutes to jobs in the more densely populated urban cores. Since then, the commutes to work from suburban areas to the employment centers of metropolitan areas account for a major portion of work trips and vehicle miles traveled (VMT) in U.S. metropolitan areas.

In a similar way, urban and suburban populations are identified in different ways. A recent official definition relies on surveys of residents in metropolitan areas. The table below, drawn from HUD’s 2017 American Housing Survey, is based on a survey of US households where 52% of U.S. households surveyed described their neighborhood as suburban, 27% described their neighborhood as urban and 21% described their neighborhood as rural. Even within metropolitan areas, as the table below makes clear, 57% responded they lived in suburban areas, and within Central Cities 47% responded they were suburbanites.

**Table 1: AHS Neighborhood Description Results: Central/Outside Central Cities. (US HUD, 2017)**

	Urban	Suburban	Rural
Metropolitan Areas	29%	57%	14%
Central Cities	51%	47%	2%
Outside Central Cities	14%	64%	22%

In 2018, Wieder from the Pew Research Center, reported on a similar survey that asked adults how they would describe the community where they lived, as urban, suburban, or rural. 25% responded that they lived in urban areas, 30% in rural and 43% in suburban areas. Both surveys suggest that more than half the people in the US either lived in suburban areas or thought they lived in suburban neighborhoods!

## COVID and Central City Exodus: A New Trend? Temporary or Permanent?

COVID has been widely perceived as precipitating a move to the suburbs from central cities. The density of central cities, such as NYC, is associated with facilitating contagion. However, studies on the effect of housing density do not indicate a direct relationship, although there is evidence that crowding within housing units has such an effect (Blanco 2020; Shannon et al. 2018). In addition, there is evidence that many central cities were already losing population

before the COVID epidemic. A Brookings Institute Study showed that city populations in cities over a million, which had grown significantly during 2010-2015, began to experience loss of population in 2018-2019, and cities of 500,000 to 1 million which during the first half of 2010s grew fastest, experienced slower growth from 2016-2020 (Frey 6/8/21). (See also Frye and Cohn's findings discussed below.)

Florida et al.'s influential article (2021) argues that COVID-19 has led to social scarring--fear of large crowds and crowded places, resulting in less social life. The authors provide statistics that indicate there was a movement away from cities during a portion of the pandemic. Using data from a Harris Poll, Florida et al. (2021) conclude that Covid-19 drove 40% of the population to move to less crowded places. The authors also used more informal sources, such as Zillow and Apartment List, to confirm that people were moving away from cities (p. 8). The authors connect the drive away from cities to the notion of space and the desire for less crowded areas. They argue that given the option, people like working from home, and that, suburbs, especially near large cities, may see an influx of people.

The Harris Poll, referred to by Florida et al., was conducted in the spring of 2020. It had nine participant waves interviewed at different dates. It detailed sex, age, political affiliation, residential location of the participant, and whether the participant was a parent or not. The Poll found that about 40% of adult Americans said they would move to a less populated area. Younger adults, 18-34 and 35-49 said that they, too, would consider moving to the suburbs or rural areas; 40% and 35% of respondents in each group respectively. While the Poll was not able to provide figures of actual moves, it does show an increased preference among Americans to move away from the city. Moreover, the poll was able to detail the concerns of Americans about going back to work. The survey asked, in relation to returning to work, "When stay-at-home orders are lifted, how concerned are you about the following situations, as it relates to the risk of you/your loved ones being exposed to, or accidentally exposing others to coronavirus?" Results overwhelmingly indicate that respondents of all ages were very or somewhat concerned about contracting Covid at the office. The survey reports that 18-34-year-olds were the most concerned about contacting Covid, with 71% of individuals from this group reporting being very or somewhat concerned about Covid.

Ramani and Bloom (5/2021) analyzed data from the US Postal Service data and Zillow and found that rental rates in the central business districts (CBDs) of the largest 12 US metros fell significantly compared to the lower density zip codes. From their findings, they draw two major conclusions on the effect of the pandemic on migration patterns within the U.S. First, instead of movement from large cities to smaller regional cities or towns, the evidence they analyzed indicates that within large US cities, real estate demand, both residential and commercial did move from Central Business Districts (CBDs) to lower density suburban zip codes surrounding the CBD, in effect moving to the outer ring of a metropolitan area. Ramani and Bloom refer to this as the “**donut effect** of Covid-19 on cities”. They assume that WFH patterns established during the epidemic will be continued in a hybrid way, with workers typically commuting to the CBD’s of their metropolitan areas three days a week from their suburban homes. Such a WFH pattern facilitates suburban living, but still requires proximity to their CBD. The authors point out that, “In both hybrid and full-time WFH, there is reallocation from city centers to their respective suburbs, though the degree of reallocation under hybrid WFH is less than that of full-time WFH” (p. 12). Ramani and Bloom’s research is also supported by D’Lima et al.’s work (2022). With a national focus, D’Lima et al. provide evidence that average prices of 3-bedroom properties fell by 1.4% in densely populated locations or downtowns, and increased by 1.5% in low density locations, e.g., suburbs, as well as documented more drastic effects for properties with fewer bedrooms.

Real estate research and consulting firms have also provided studies and evidence of the move from urban to suburban areas. For example, evidence that COVID has led to a flight to the suburbs is provided by Rodkin in a business publication (2020). Rodkin focuses on Lake Forest, a suburb of Chicago, and the title of the article, makes the case, “Lake Forest’s Real Estate Market Was Dead. Then Came COVID: The Very Things Holding the Suburb Back—big Traditional Homes Far from the City—are Now Attractive During the Pandemic.” Rodkin indicates that, “Crain's reported sales in August were double what they'd been a year before, and in September sales were up 130 percent: 60 homes sold, compared to 26 in September 2019” (2020).

National Public Radio (NPR) also covered how the pandemic pushed many New Yorkers to the suburbs (Berliner 2020). NPR’s Uri Berliner interviewed real estate agent Susan Horowitz about the movement of people from the city to the suburbs, specifically NYC to the Montclair suburb. Hoorwitz noted how many people had moved to the suburbs due to concerns over Covid-19. Kelman, CEO of Redfin, pointed out that the nature of telecommuting offered flexibility that people did not have before. Other experienced professionals in the field stated that they had seen an immense increase in demand for suburban housing, as inquiries increased from 75 per month to over 400 by July 2020, using April as a baseline. While the experts did not provide information about how many people who inquired about suburban housing actually moved, their opinions provide evidence that the demand for suburban housing increased dramatically.

Periodicals such as the *NY Times*, and the *Washington Post* (WP) have provided timely and insightful reports on the pandemic’s drive to the suburbs. Lerner from the *WP* in an October 2020 article interviewed families who had moved to the suburbs from larger cities. The article



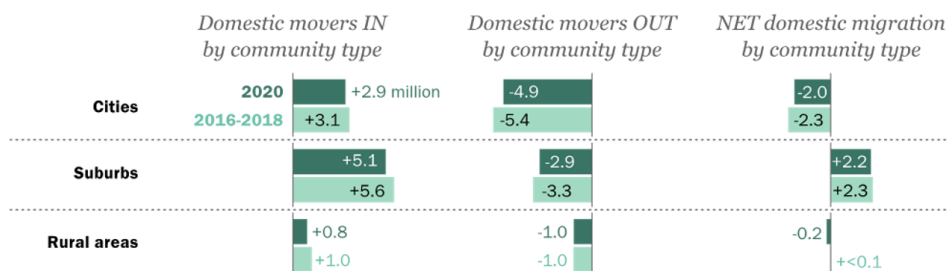
indicates that a variety of real estate sites noted how their users were looking for suburban homes. For instance, Relator.com reported in 2020 that 51% of city dweller users were searching for homes in their respective suburban areas, and an article in the Hartford Courant indicated that, according to the U.S. postal service, 16,000 New Yorkers had changed their addresses to ones in suburban Connecticut over the span of four months (March to June 2020). Lerner’s article also reports on an interview with Weingart, a Redfin real estate agent located in Washington state, who has many buyers hailing from Seattle and California. Weingart believed that the desire for larger spaces was a key driver in home sales. Lerner links this desire for larger spaces to the greater incidence of WFH and refers to Stanford’s Institute for Economic

Policy Research (June 2020) study indicating that 42% of Americans were working from home (Lerner, 2020).

### Are Moves from Cities to Suburbs During COVID Significant? Will they Stick?

While moves from cities to suburbs during COVID are significant, whether these moves are temporary or permanent is still under debate. Frye and Cohn (2021) from the Pew Research Center provide evidence that moves out of cities were occurring several years before the pandemic, and at higher rates. The figure below shows that from March 2020 to March 2021, 5.1 million people moved into suburban areas from other types of communities. However, from 2016 to 2018, on average, 5.6 million had done so each year. Moves out of the suburbs also went down during this period. See Figure 1 below.

**More people left American cities for other U.S. communities than moved into them during 2020, continuing a pre-pandemic trend**

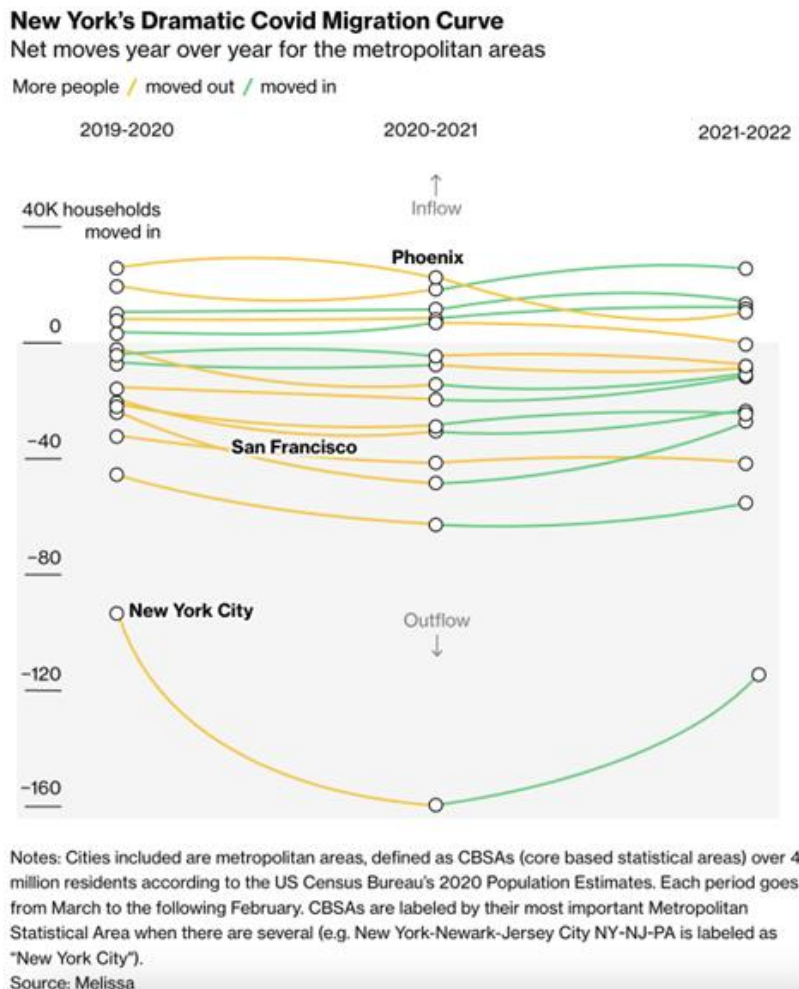


Note: Domestic movers are those who lived at a different U.S. address one year earlier. Includes movers who were at least 1 year old at the time of the survey. The years refer to the time period when people migrated, as reported in surveys from the following year. The years 2016-2018 are reported as the average of those years.  
 Source: Census Bureau migration tables based on 2017-2019 and 2021 Current Population Survey Annual Social and Economic Supplement (ASEC).

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**Figure 1. Evidence that many cities were losing population before the pandemic (Frye and Cohen, 2021)**

An example is LA's metropolitan statistical area, which increased in population until 2017, but from 2017 through 2020 the MSA's population decreased slightly (US Census 2022a, 2022b) until the pandemic's greater decrease.



**Figure 2. Net Moves Year Over Year for New York City and other Metropolitan Areas 2019-2022 (Source: Holder and Patino, Bloomberg)**

Holder and Patino's *Bloomberg* article (6/8/2022) graphically portrays the temporary nature of moves in and out of urban and suburban areas. See Figure 2 above. Their report focuses on Manhattan, but also provides changes in population for major metro areas, as well as for NYC boroughs and suburban areas. The authors note that "New York City saw more outbound migration than any other metro area in the US, with at least 160,000 households fleeing

between March 2020 and February 2021, according to the data provided by *Melissa*, which is sourced from US Postal Service change-of-address records” (Holder 2022). From Figure 2 above, it is evident that while NYC experienced more outmigration from 2020 to 2021 than other metro areas studied, it experienced more in-migration from 2021 to mid-2022 than the other metro areas depicted in the figure.

Holder and Patino point out that during the second year of the pandemic, people began moving back into Manhattan. They indicate that several factors may have brought back residents: in-person work; limited housing outside the city; and expensive housing outside the city. The authors also point out that housing prices in Manhattan have returned to their median in 2018.

Whether major urban cores regain their population post-COVID is an important issue, especially for their local economies, but the most transformative change that the experience with the pandemic has brought about is the experiment with telecommuting that has taken place for the past year and a half for a large segment of workers. The real issue that policy experts need to be concerned about is the “potential stickiness” of this transformative pandemic-induced behavior (Salon et al. 2021, p.1). If telecommuting is maintained at the rates achieved during COVID, although estimates vary, it can reduce car commute VMT by approximately 15% (Salon et al. 2021, p. 2). Such a change would also impact transit demand, as well as land uses and commerce in downtowns.

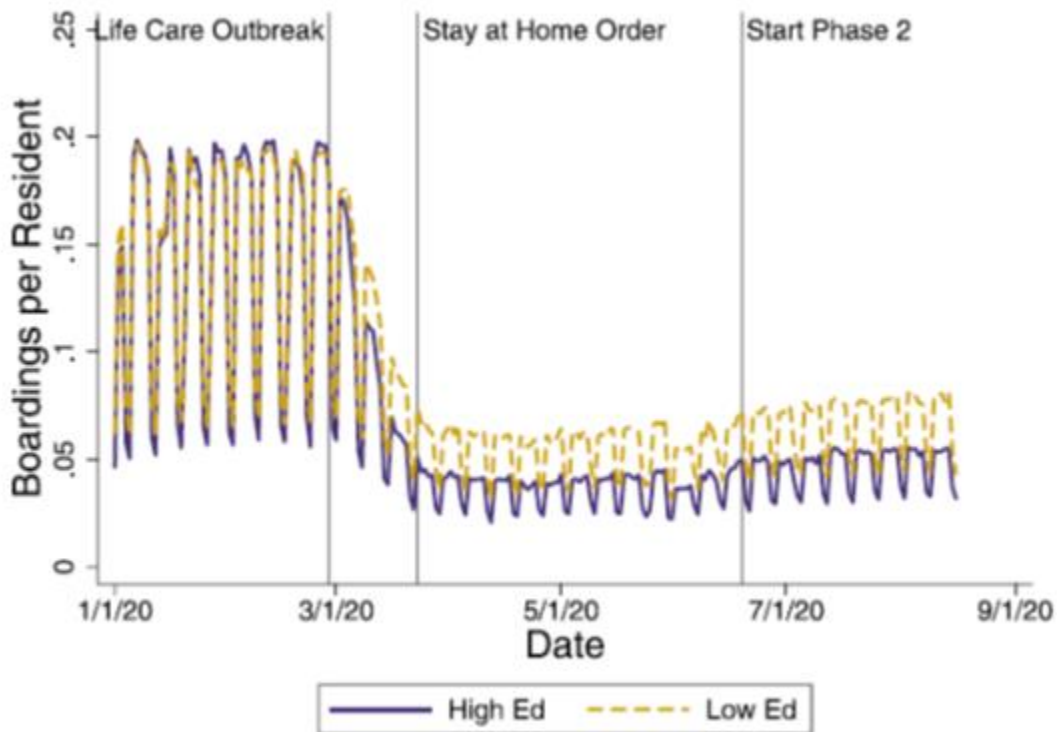
### Socio-demographic Disparities in WFH

Focusing on NYC, Anacker (2021) argues that in addition to the appeal of larger and cleaner housing choices in the suburbs, the pandemic has pushed upper class and nonessential workers to the *safescapes* of the suburbs. Focusing on NYC, she points out that lower-income and black and Hispanic population could not escape the city—providing evidence that lower-income and non-white neighborhoods retained the same population during the pandemic, while non-Hispanic white neighborhoods saw a 40% decrease in population (p.3). Many who left NYC either bought new homes or moved to already existing second homes (Kaufman 2020).

Florida et al. (2021) indicate that not all people have the ability to work from home, and that the potential to work from home is tied to socioeconomic status and education, citing Dingel and Neiman (2020). Florida et al. also reference the work of Cortright (2020) and Baum-Snow and Hartley (2020) that indicate that, since 2010, those who are college educated and between the ages of 25-34 have been driving a 50% population increase in the suburbs (Florida et al., 2021, p. 9). In reference to skilled workers, “estimates are that remote work will increase from about 10% of the workforce in the USA prior to the pandemic to roughly 20% of the workforce post-pandemic with, say, another 20% or more of the workforce working remotely a few days a week” (Florida et al., 2021, p.11). Hence, the type of work one does largely dictates the ability to work from home and consequently, to participate in this city exodus. Remote work is also uneven not only globally, but within California as, “the San Francisco region has a 50% remote

work potential, while Los Angeles only a 30% level” (Florida et al., 2020 p.13) based on the economic and occupational profiles of the urban regions.

In a study of King County, Washington State, Brough et al. (2021) documented the magnitudes and mechanisms behind socioeconomic differences in travel behavior during the pandemic. They found that travel declined significantly less among less-educated and lower-income individuals, despite transit service reductions. Even after travel restrictions were lessened, the gap between less-educated and lower-income individuals and more-educated and higher-income individuals remained. They conclude that remote work capacity explains the gap.



**Figure 3. Transit Boardings in King County, WA, by Neighborhood Levels of Education (Brough et al. 2021)**

Figure 2 demonstrates the gap between groups with and without higher education before (when the boardings per resident were the same for the two groups) and over the course of the first five months of the pandemic when the boardings continued to diverge. The study makes clear the direct and significant positive relationship between higher education and remote work. This provides further confirmation of the findings in Dingel and Neiman’s (2020) research on the number of jobs that can be performed at home and their typical educational requirements.

It is clear from the research examined that the potential for remote work, or WFH, is unevenly available to different economic and ethnic/racial groups, to a large extent due to the uneven

educational attainment among ethnic/racial groups. Increasing the rates of remote work among workers with higher education will aggravate standing inequalities between workers whose jobs require higher education and those that do not. This is not well-addressed by the literature we surveyed.

## Strategies that Could Make the Suburbs More Livable, Sustainable, and Facilitate Remote Work

Gupta (2020) argues that if remote work is to become the future, it calls for a suburban livability agenda, to accommodate more residents in these areas during the day. Suburban residents working from home will have more flexibility in their hours and are likely to require near-by neighborhood commercial uses, such as restaurants, cafes, bars —more of a neighborhood, than a typical homogeneous residential suburb. Gupta suggests lowering minimum lot sizes, legalizing accessible dwelling units, and reducing real estate broker fees to increase the affordability of residential homes. These latter suggestions could make suburban housing more affordable to lower income households.

Bereitschaft, and Scheller (2020) address the broader issue of the kind of planning and design adaptations that could reduce our vulnerabilities to future epidemics and emphasizes biophilic design, and active transportation as priorities. For example, such design and planning would emphasize exposure to nature, through accessible public and green spaces, and bicycle paths, to improve both physical and psychological health. As they point out, most of these strategies have been implemented in cities, but suburbs could also benefit from them.

More sustainable suburbs are envisioned by Daniels (2021). He follows a strategic planning process to identify the elements of future suburbs to address climate change, future epidemics, as well as their social and economic sustainability. He first describes the characteristics of existing suburbs—the Business as Usual (BAU) scenario in strategic planning—the low density, exclusively residential, auto dependent suburb. Daniels then goes on to articulate the process and elements for the development of more socially, environmentally, and economically sustainable suburbs. Such suburbs, he describes, would be denser, mixing smaller single-family lots, with duplexes, triplexes, and multi-family apartments, with overall densities to support transit, with trails and public green space, and responding to social and economic indicators to ensure a mix of incomes.

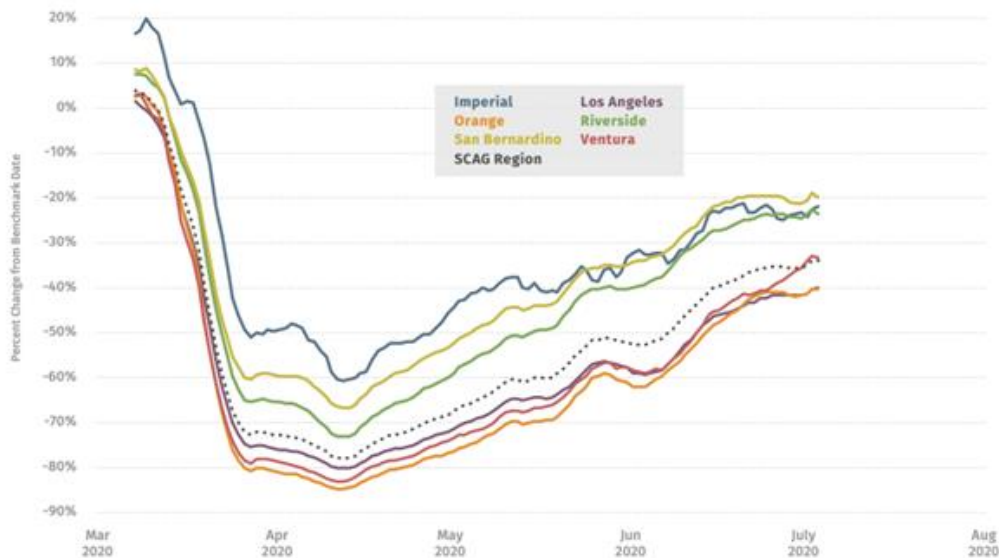
## Moves to the Suburbs, WFH and their Relation to GHG Emissions and Climate Change

The epidemic caused a significant move from cities to the suburbs for approximately 2.2 million people during 2020 (Frye and Cohen 2021). Whether such moves will stick is still unknown. However, if such moves do stick and continue past the epidemic, the outcome will be more congestion on roads and greater air pollution and GHG emissions. If, however, rates of WFH

continue past the pandemic, in particular, among suburban residents, then such moves, depending on the rates of WFH, could either relieve road congestion, or at least not increase it. This, in turn, would either reduce or at least not increase GHG emissions from automobile fleets in the region, by reducing the cars on the road. The experience with COVID 19 during the initial lockdown, especially during April through June of 2020, demonstrated the effect that increasing WFH rates could achieve.

The Southern California Association of Governments (SCAG), in charge of metropolitan transportation planning for the greater Los Angeles Metropolitan Area, an area known for its extensive suburbs, documented (August 2020) the drop in vehicle miles traveled (VMT) during the epidemic. In early April of 2020, at the height of the lockout, GHG emissions dropped over 50% compared to the previous year. But by August, VMT neared pre-pandemic levels. See Figure 4 below for percentage changes in 7-day moving average VMT by County in the metropolitan area. This highlights the potential that increases in WFH have to reduce VMT and associated GHGs.

**FIGURE 1** Percent Change in 7-Day Moving Average VMT by County (using January 2020 as benchmark)



Source: Streetlight Data


**Figure 4. Percent Change in 7-Day Moving Average VMT by County (using January 2020 as benchmark) (SCAG 2020)**

Focusing on the DC/Baltimore and the Los Angeles metropolitan areas, Yadav et al. (2021) estimated the impacts of Covid on CO2 emissions. In both areas, the “on-road emissions” produce 45% of GHG emissions. In Los Angeles, the industrial sector accounts for an additional 23% of emissions. According to Yadav et al.’s study, due to COVID-19 restrictions, in April of

2020, both Baltimore and Los Angeles metro areas experienced declines of over 30% in GHG emissions relative to their emissions in 2018 and 2019. In Los Angeles, this drop in emissions can be attributed to both reduced gasoline consumption, and to a drop in vehicle hours traveled.

Reducing greenhouse emissions to address climate change is the great challenge of our lifetimes. Until California’s vehicle fleet is completely converted to an electric fleet, and our electricity sources are converted to renewable sources, a strategy of increasing WFH rates, especially in California’s suburban auto-oriented culture, could achieve significant GHG emissions reductions. Such policies can be advanced by public education campaigns that can translate VMT goals into climate impacts. Table 2, below, from StreetLight Data provides a good illustration of how Metropolitan Statistical Areas can track, monitor and compare their level of emissions and climate impact rankings with other MSAs.

**Table 2. Illustration of a Report Card tracking Metropolitan Areas in terms of their Achievements in Reducing VMT, and Resulting GHGs (StreetLight Data, July 2, 2020)**



**Higher Climate Impacts from Lower VMT**

	Climate Impact Index Rank	-5% VMT	-10% VMT	-15% VMT	-20% VMT
LOS ANGELES-LONG BEACH-ANAHEIM, CA	#34	#23	#17	#13	#8
DENVER-AURORA-LAKEWOOD, CO	#59	#46	#35	#25	#18
SEATTLE-TACOMA-BELLEVUE, WA	#63	#46	#33	#21	#17
ATLANTA-SANDY SPRINGS-ROSWELL, GA	#91	#83	#76	#66	#53

## Findings

Metropolitan areas are reported to have 57% of people living in suburban locations, and even central cities report that 47% of their population live in suburban areas. Urban experts agree that the beginning of the epidemic led to an urban exodus to the suburbs of metropolitan areas. It is not clear yet whether the moves to the suburbs will stick past the pandemic.

The literature also makes clear how the city exodus to the suburbs and the potential for work from home depends on the type of work one does, education and other demographics. The difference in travel behavior in the use of transit between less educated and lower-income

workers and more educated, higher income individuals during the pandemic is graphically illustrated in a study of transit boardings in King Co., Washington State (Brough et al. 2021).

If the increases in the rates of remote work are maintained after the epidemic, several authors have suggested how to make the suburbs more livable, including new neighborhood centers with restaurants, cafes, bars, and more affordable home options (Gupta 2020; Daniels 2021). Failing shopping malls could make good candidates for such new neighborhood centers.

Finally, if moves to the suburbs do stick, then, unless rates of Work from Home increase significantly in the suburbs, we can expect greater road congestion and GHG emissions. Ensuring the reduction of GHG emissions in the face of increasing suburbanization will also require ongoing public education campaigns that track indicators, such as VMT, and compares such indicators to other localities' indicators.

## Part II: Cases and Redevelopment Scenarios

This study provides updates on 4 cases analyzed in a previous study (Blanco 2021). Two of the malls profiled are in the San Diego area (Parkway Plaza—Chapter 5, and The Shoppes at Carlsbad—Chapter 6), and two in the Bay Area (Southland Mall—Chapter 7, and Northgate Mall—Chapter 8). The cases include major characteristics, such as location, land use and planning, property owner information, demographic profiles, housing needs, transit information, and environmental profiles. Chapter 9—Redevelopment Scenarios—provides an assessment of the mixed-use potential of the malls profiled, focusing on their housing potential.

### Chapter 5. Parkway Plaza

415 Parkway Plaza, El Cajon, CA 92020

**Owner:** Pacific Retail Capital Owners and Golden East Investors

**Characteristics (Land Use, Zoning, Size, Current Status or Plans):**

- Regional Commercial (C-R)
- Mixed Use Overlay Zone (MU)





**Figure 1. Parkway Plaza, El Cajon (Google Earth Image, facing North, retrieved 5/20/2022 from: <https://earth.google.com/web/search/415+Parkway+Plaza,+El+Cajon,+CA>)**

Parkway Plaza was opened in 1972 by Westfield as the second indoor mall in San Diego County. Initially named Westfield Parkway, the property remained part of Westfield until 2013 when the mall was acquired by Starwood Retail Partners and renamed Parkway Plaza (Starwood Retail Partners). Starwood Retail lost ownership of the mall in 2020, and the Mall is currently owned by Pacific Retail Partners and Golden East Investors. The mall sits on an 80-acre plot, offering 1,319,047 square feet of gross leasable area (Directory of Major Malls, 2022). The mall is one-story for the most part, but some anchors, such as Sears and Macy's have two stories. The site was most currently (2022) home to several anchors and major stores – Best Buy, Dick's Sporting Goods, JCPenney, Walmart and the Regal 18 Cinemas (Directory of Major Malls, 2020). Sears closed in 2018. Although Forever 21 was scheduled to close by the end of 2019, the chain was acquired by three companies (including the Simon Property Group and Brookfield Property Partners) in early 2020 (Thomas, 2019; Kennedy 2020). Given the notable struggles of retailers like JCPenney and Macy's, Parkway Plaza may see more anchor store closures in the coming years. Also, with the retail losses from Covid-19 expected to be high, it is increasingly likely that Parkway Plaza may become open to several types of new development. Approximately 34 acres of the property is occupied by parking.

## Land Use and Planning

The site falls under a Specific Plan, which is not a comprehensive planning document. Since the site has several owners, individual owner decisions, e.g., for a new restaurant (BJ's) on the

corner of Johnson and Fletcher, amend the Specific Plan over time (Alvey Interview 11/4/2022).

In 2013, the City of El Cajon adopted an updated housing element to accommodate the 5,805 residential units—its 5<sup>th</sup> RHNA allocation (City of El Cajon, 2013). To meet this target, the city decided to apply mixed-use overlay zones to properties within four areas of the city, one of them being Parkway Plaza (City of El Cajon, 2013). Development projects within these zones are only subject to an administrative process (Alvey Interview 11/4/22). The goal of the zone is to provide “flexibility for commercial properties to redevelop with residential uses, or commercial uses consistent with the underlying zone, or a mix of both uses,” (City of El Cajon, 2013). In the proposed map from 2017, Parkway Plaza did not include any zones where a residential component would be required (City of El Cajon, 2017). However, given the location’s placement in the mixed-use overlay zone, it is feasible that the development of housing in the area would be attractive.

Located in the north central area of El Cajon, surrounding land uses include a mix of commercial, residential, manufacturing uses, and a public elementary and middle school. In addition, the Mall is located within the zone of the Gillespie Field Airport Comprehensive Plan, which may place some restrictions on development (Alvey Interview 11/4/2022). Any new development within the Airport Influence Area needs to be reviewed by the San Diego County Regional Airport Authority, which serves as the Airport Land Use Commission (ALUC) for San Diego County (San Diego International Airport 2022).

The City Council’s Action Plan (Adopted Feb. 22, 2022) includes the Re-Envisioning of Parkway Plaza with the engagement of the multiple owners of parcels on the mall. In addition, the City Council has also requested assistance from San Diego State University to re-envision the mall and expects a report on the re-envisioning effort by mid-December 2022 (El Cajon City Council Action Plan 2/22/2022).

## Property Owner Information

Parkway Plaza was opened in 1972 by Westfield as the second indoor mall in San Diego County. The mall was most recently redeveloped in 2011. Initially named Westfield Parkway, the property remained part of Westfield until 2013 when the mall was acquired by Starwood Retail Partners and renamed Parkway Plaza (Starwood Retail Partners). Starwood Retail Partners lost ownership of Parkway Plaza and six other U.S. malls due to the firm defaulting on bonds (East County Magazine, 2020). In 2020, Pacific Retail Capital Partners (PRCP) and Golden East Investors (GEI) took joint ownership of Parkway Plaza. However, several other property owners own parcels within the Mall, including JC Penney Properties, Wal-Mart Real Estate Business Trust, and the Fletcher Parkway Group.

Pacific Retail Capital Partners (PRCP) is based in El Segundo, California and describes itself as a real estate investment group of “large format retail-led properties” (Pacific Retail Capital

Partners 2022). PRCP manages “over 20 million square feet of regional, open-air lifestyle and mixed-use centers” and has a record of “evolving and repositioning retail-led properties with a keen focus on unlocking the value and enhancing the quality of its growing portfolio” in response to meeting investors, retailers, and consumer goals. On PRCP’s website, the firm discusses how their model integrates mix-uses into their properties. However, a review of the projects in their portfolio indicates that the projects solely focus on retail and commercial properties.

Golden East Investors (GEI) is a national real estate investment firm based in New York City. GEI was founded in the 1980’s and is a “vertically integrated organization that is a leader in the acquisition, development, construction, and management of commercial real estate” (Golden East Investors 2022). Their relevant projects only focus on commercial uses and include the West Covina Mall, Southlake Mall (Merrillville, Indiana), Franklin Park Mall (Toledo, Ohio), Great Northern Mall (Cleveland, Ohio), and Belden Village Mall (Canton, Ohio). The GEI website does not discuss any plans for converting Parkway Plaza or any other property in their portfolio into a mixed-use development.

### Demographic Profile of El Cajon

According to U.S. Census, as of 7/1/2021, the City of El Cajon had a total population of 105,432. The median household income in the city was \$56,367, and the per capita average income was \$25,940. The owner-occupied housing rate was 41.9%, and the percentage of persons in poverty was 19.4%. This can be compared to California’s overall rates for this period: 55.3% owner-occupied housing rate; median household income of \$78,672, a per capita income of \$38,576, and a poverty rate of 12.3% (US Census Bureau, 2021). Compared to the State of California’s average owner-occupied housing rate, El Cajon’s rate was 13.4% lower; its average household income was \$22,305 lower, and its per capita annual income was \$12,636 lower. Its poverty rate was 7.1% higher than the State’s overall rate.

The City has an area of 14.51 square miles (9,286.4 acres) (U. S. Census 7/2021), which results in a gross density of 11.12 persons/gross acre.

### Housing Need in El Cajon

SANDAG (2019a) in November of 2019 reported information on the achievements of cities in its region to meet RHNA targets for the 5<sup>th</sup> Cycle. The publication makes clear that El Cajon saw very little housing development activity during this period, except for about 300 units of above moderate housing units, with less than 100 new units for low income, and fewer yet for moderate or very low income.

According to the San Diego Association of Governments (SANDAG 2019b), the City of El Cajon will be responsible for the development of 3,280 units between 2021 and 2029 to fulfill their Regional Housing Needs Assessment allocation during the 6<sup>th</sup> RHNA cycle:

- Above moderate income: 1,867 units
- Moderate income: 518 units

- Low income: 414 units
- Very low income: 481 units

## Transit Information

The site is located near Interstate Highway 8 as well as the 67 Freeway. El Cajon Parkway Plaza Mall Transit is accessible through several bus lines with stations within a 3 minute walk of the Mall: 833, 848, 875, 891, 892 and 874 (El Cajon Shuttle) (Moovit 2023). It is also accessible through the Orange Line light rail and the Green Line light rail, but within a 29 min. walk (Moovit, 2020). The bus accessibility qualifies the site as a transit hub, and new residential development on the site is likely to qualify for reduced parking requirements as a transit rich area under AB 2097 (See Chapter 2).

## Environmental Profile through CalEnviroScreen

For the environmental profile of the location of the mall and surrounding area, this study uses CalEnviroScreen information (OEHHA 2022). CalEnviroScreen is California’s mapping tool, developed and housed in California’s Office of Environmental Health and Hazard Assessment (OEHHA) that helps “identify communities most affected by sources of pollution and populations vulnerable to pollution effects using environmental, health and socioeconomic information for every census tract in the State. An area with a high score experiences higher pollution burden than those with lower.” The tool provides overall ratings for each census tract in the State, expressed as a percentile, e.g., if a tract falls in the 90<sup>th</sup> percentile, only 10% of the census tracts in the State are more vulnerable than the tract to that hazard or effect. CalEnviroScreen 4.0 uses several types of indicators to identify areas with high environmental vulnerability: *Exposure indicators*, such as: Traffic; *Environmental Effects Indicators* such as Cleanup Sites or Groundwater Threats; *Sensitive Population Indicators*, such as Asthma, or cardiovascular disease; and *Socioeconomic Indicators*, such as, Poverty, Unemployment, Housing Burden for Low-Income Families.

Situated next to Interstate Highway 8 and the 67 Freeway, Parkway Plaza is heavily burdened by pollution, according to California’s CalEnviroScreen (11/3/2022). The census tract where the Mall is located has a high pollution burden, with an overall rating of 86% among all the census tracts in the State, and rating 69% in vulnerable population characteristics. The highest threat levels are the result of cleanups, groundwater contamination, proximity to hazardous waste (solid waste rating of 99%), and traffic (diesel rating of 89%). The hazardous waste and groundwater threats are largely caused by years of dumping by aerospace company Ametek (Pearlman, 2015). Sensitive population characteristics, such as asthma (63%) and cardiovascular disease (64%) also have high rates. In addition, poverty in the area is 50%, the unemployment rate is 76% and the housing burden is 85% compared to all census tracts in the State.

## Findings

Parkway Plaza, located in the City of El Cajon in San Diego County, is an 80-acre mall, which underwent a change in ownership, as well as the loss of a major anchor, Sears, in 2020. The new owners have not announced plans for redevelopment. The mall is in a Mixed-use overlay zone, which would facilitate its redevelopment with a housing component. The City Council (2/2022) has included the revisioning of the mall as one of its economic development priorities, and plans to engage the multiple owners in this process with the assistance of a team from the local University.

El Cajon's population, compared to the State of California's 2021 averages, has a significantly lower home ownership rate, lower household and individual average incomes, and higher poverty rate than the State's average. Its gross density is 11.12 persons/acre. The City experienced little housing development during the 5<sup>th</sup> RHNA cycle and failed to meet its targets. For the 6<sup>th</sup> cycle, the City will be responsible for a total of 3,280 units of housing, with the largest percentage for above-moderate income.

The mall site is a transit hub and would qualify for reduced parking requirements for housing as a transit-rich area.

The site, however, is heavily burdened by pollution, rating in the 86<sup>th</sup> percentile of all census tracts in the State.

Promising for the redevelopment of the mall into mixed use with a significant housing component is that the mall is already in a Mixed-use overlay area, that the City Council has identified the mall as an economic development priority and is seeking ideas on how to accomplish this, and that incorporating housing in the redevelopment of the mall would contribute to meeting the new RHNA targets.



**Figure 2. Site Photos: Parkway Plaza, facing Macy's and Walmart's from Parking Lot (Google Earth, 2022)**

## **Chapter 6. The Shoppes at Carlsbad**

2525 El Camino Real, Carlsbad, CA 92008

**Owner:** Brookfield Properties Retail Group

**Characteristics (Land Use, Size, Current Status or Plans):**

- C-2, General Neighborhood Commercial (Zoning Map)
- R – Regional Commercial (Land Use Plan)

The Shoppes at Carlsbad were first opened in 1969 under the name Plaza Camino Real. In recent years, this 90-acre shopping mall has seen several anchor store closures. In 2006, Robinsons-May closed, with a Steve and Barry store coming in to replace it the same year (Earnest and Vincent, 2005; Wright, 2006). That Steve and Barry store closed in late 2008. More

recently, the Sears anchor store closed its doors in December 2019 (San Diego County News, 2019). Although 24 Hour Fitness, JcPenney, and Macy's still remain open as anchor stores, the

latter two have seen several of their stores close nationwide in recent years (Tyko 1/5/2022). With the Covid-19 outbreak causing closures of many malls and public retail spaces, the status of those anchor stores may continue to change during the coming year. Parking occupies approximately 59 acres of the property, and the mall offers 1,119,104 square feet of gross leasable area (Directory of Major Malls 6/30/2022).



Figure 1. Shoppes at Carlsbad. Source: Google Earth, 7/2/2022, facing north.

## Land Use and Planning

In the city's zoning code, The Shoppes at Carlsbad are zoned as General Neighborhood Commercial, which does permit mixed-use developments with residential development. Within the Regional Commercial zone, residential dwellings are allowed as a secondary use, provided they have a minimum density of 15 units per acre (Carlsbad Municipal Code, 2015). In the Land Use plan, the area is zoned as R for Regional Commercial (Carlsbad, Land Use and Community Design Element, 2015).

In 2017, Rouse Properties attempted to redevelop The Shoppes at Carlsbad with a mixed-use housing component. This would have included 321 residential units, 25,000 additional square feet of retail space, and 214 hotel rooms. However, this plan was denied by the city of Carlsbad for several reasons. Given the multiple property owners on the site, namely Rouse, the city (which owned the parking), and several department stores, Carlsbad was unsure of the viability of the plan. Also, the city of Carlsbad had a citywide cap of 54,599 housing units which could not be increased without voter approval (Puterski, 2017).

Although the Rouse plan was ultimately denied, the City of Carlsbad did express their support for more housing. The city's municipal code also supports housing development, as it details

density bonuses that are available for developers. In code 21.86, housing developers can receive density bonuses of up to 35% for higher percentages of affordable housing included in new development (Carlsbad Municipal Code, n.d.). This affordable housing can be for extremely low income, low income, and moderate-income housing, indicating the city's recognition that lack of affordable housing affects households at many income levels.

Currently, the City has initiated a General Plan Amendment for a rezone of the Mall, and is in the process of scoping for an Environmental Impact Statement, which should be completed by April of 2024 (Interviews with E. Lardy, Senior Planner, and J. Goff, Current Planner in Carlsbad's Community Development Dept. on 10/24/22). The City owns the parking area in the mall, which amounts to about 59 acres. The City is considering adding about 1,000 units of housing to the City's parking property on the mall. The planning officials expect to have completed a scoping process to present to the City Council and the Planning Commission by mid-2023. This deadline is important, since the City is required by the State to complete its rezoning by April 2024 in order to meet their housing obligations under RHNA.

The owner-developer Brookfield is also interested in adding residential to their property. With the current zoning, Brookfield can add up to 25% residential uses on its property, including above its commercial uses. Thus, the residential redevelopment component of the mall, after the planning and zoning changes that are in progress take place, is likely to include stand alone as well residential units above commercial.

## Property Owner Information

The Shoppes at Carlsbad were initially developed by May Centers, Inc., but have seen several owners in recent years. Within the last five years, the property has been owned by three prominent retail companies. The first, Westfield Properties, acquired the property in 1994, and owned it up until 2015 when the mall was purchased by Rouse Properties (Showley, 2015). Rouse Properties completed Westfield's planned redevelopment of the mall into an open-air space, and put forth plans with the city of Carlsbad to create a mixed-use housing complex on the property as discussed above (Hirsch 2016). However, Rouse was bought out in 2016 by Brookfield Properties Retail Group, a Chicago-based organization that owns over 170 regional shopping centers across the country (Brookfield Properties, 10/22). Brookfield Properties owns and manages the Mall since then.

Brookfield Properties Retail is a subsidiary of the global real estate company Brookfield Property Partners. Their U.S. headquarters is located in New York. Brookfield Properties Retail makes up one sector of Brookfield Property Partners' work, along with office, multifamily, hospitality, and logistics. Brookfield Property Partners is a subsidiary of Brookfield Asset Management and split off in 2013 to be publicly traded. Brookfield Properties largely serves as a property manager for Brookfield Property Partners' developments. Brookfield Properties manages more than 600 properties, has 30 active developments, and lays claim to more than 170 "premium retail destinations," (Brookfield Properties, About Us, 10/2022).



## Demographic Profile for Carlsbad

According to the Census Bureau (2022), in 2021, Carlsbad had a population of 115,302 people, an owner-occupied housing rate of 62.5%; a median annual household income of \$112,933, and a per capita annual income of \$57,607. Its poverty rate was 6.6%. This can be compared to California's overall rates for this period: 55.3% owner occupied housing rate; median household income of \$78,672, a per capita income of \$38,576, and a poverty rate of 12.3% (US Census Bureau, 2022) Compared to the State of California's average owner-occupied housing rate, Carlsbad's rate was 7.2% higher; its average household income was \$34,261 higher, and its per capita annual income was over \$19,000 higher. Its poverty rate was 5.7% lower than the State's overall rate (U.S. Census, Quick Facts 7/1/21).

The City of Carlsbad has an area of 37.7 square miles (plus 1.4 sq. mi. in water), and with a population of 115,302 people in 2021, this results in a density of 4.74 persons per gross acre.

## Housing Need in Carlsbad

During the 5<sup>th</sup> Regional Housing Assessment Needs Assessment for the period 1/1/2010 to 12/31/2020, Carlsbad had a total housing needs assessment of 4,999 units.

SANDAG in November of 2019 reported information on the achievements of cities in its region to meet RHNA targets for the 5th Cycle. The publication makes clear that Carlsbad overshot its above moderate housing allocation by 500 units, but underperformed for all other categories, especially, housing for the very low income.

According to the San Diego Association of Governments (SANDAG), the City of Carlsbad will be responsible for the development of 3,873 units between 2021 and 2029 to fulfill their Regional Housing Needs Assessment allocation for the 6<sup>th</sup> Cycle. The numbers are distributed somewhat evenly by household income designation:

- Above moderate income: 1,029 units
- Moderate income: 749 units
- Low income: 784 units
- Very low income: 1,311 units

## Transit Information

The property is accessible through multiple transportation options and can be considered a transit hub. The North County Transit District has a transit center located in the western parking lot, with access to both rail (the Coaster from Oceanside) and bus options. It is served by the 302, 309, and 623 bus lines. The site currently has approximately 5600 parking spaces, with access to the main streets of El Camino Real and the 78 Freeway, but the parking will be significantly reduced by the planned redevelopment.

## Environmental Profile through CalEnviroScreen

The northern edge of the Shoppes at Carlsbad sits approximately 0.15 miles from the Interstate-78 freeway, placing it very near high volumes of vehicle emissions. Traffic and diesel particulate matter are the main pollution issues at the site. According to CalEnviroScreen 4.0 (11/13/22), among all the census tracts in the State, the overall rating of the census tract where the mall is located is in the 16 percentile, with a pollution burden of 28 %, and a rating of 14% on population characteristics. As a reminder, in CalEnviroScreen ratings, the lower the rating, the healthier the location, and the less vulnerable the population.

## Findings

The Shoppes at Carlsbad is a 90 acre mall (with 59 acres in surface parking) in a suburban municipality, where the pollution burden is low, with a population with significantly higher average household and individual income than the State's, and with almost half the State's poverty rate. The surface parking area in the mall is owned by the City.

Carlsbad has not met its RHNA targets in the past, but the more forceful enforcement of RHNA targets by the State are likely to result in more successful efforts to increase the housing supply—a significant portion of which could be achieved by changing the land use regulations to allow housing in the mall. As a result, the city has initiated a General Plan amendment for a rezoning of the mall. The rezoning would enable housing on the parking area of the mall which planners expect could be about 1,000 units. The zoning changes need to be completed by 4/2024 to comply with the State's RHNA process. The mall owner, Brookfield, is also interested in adding housing to their mall property.

The Carlsbad case is an example of how the new enforcement effort by DHCD is likely to lead to more housing development in areas that did not meet their housing obligations in the past.





Figure 2. Site Photos of the Shoppes at Carlsbad (Google Earth 4/22)

## Chapter 7. Southland Mall

One Southland Mall, Hayward, CA

**Owner:** Brookfield Properties, Transformco and partners

**Zoning:**

- CBB20: Central Business - Min. Lot Size - 20,000 Sq Ft
- Surrounding Zoning: RS (Single family residential)

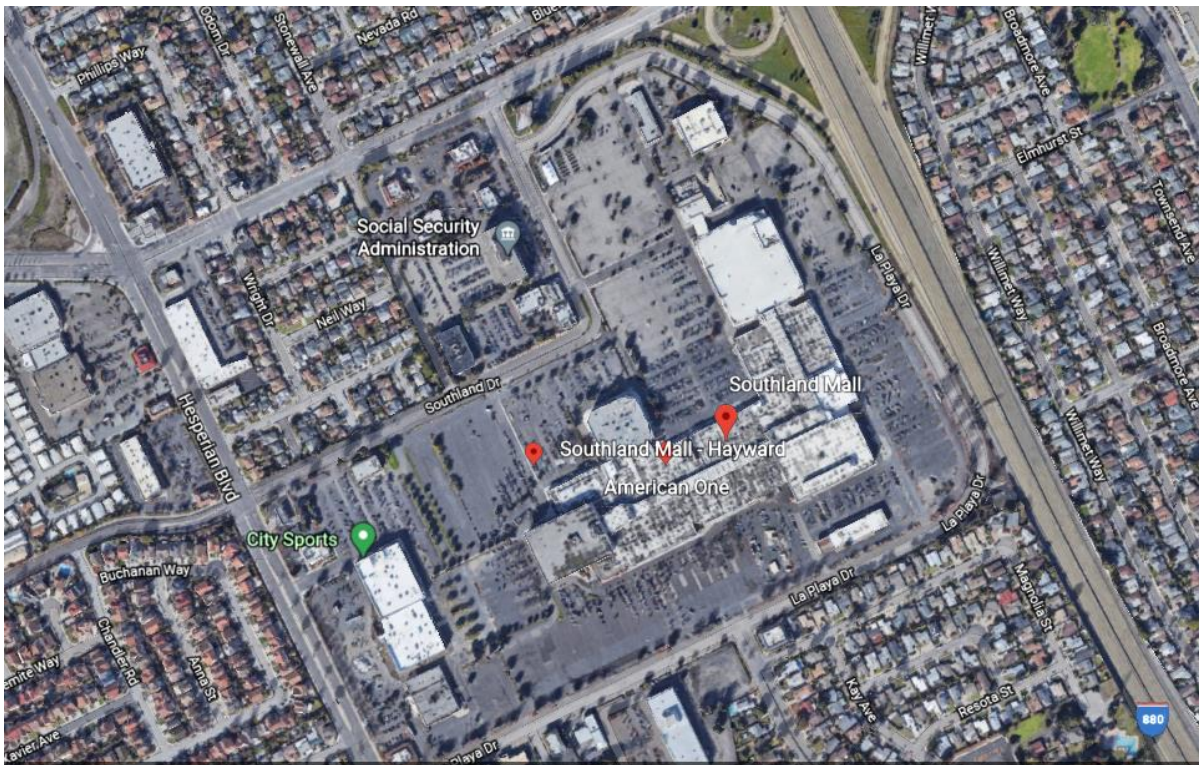
Southland Mall sits on an 82-acre property in Hayward, CA, approximately 70 percent of the site is covered by parking.

The mall, which opened in 1964, is single-story, with subterranean space under the current Planet Fitness location (Mall Hall of Fame). Southland Mall has been struggling for more than a decade. In 2005, the East Bay Times reported that then property owners, General Growth Properties, planned to tear down the movie theatre that had been vacant for six years. Additionally, they were interested in developing a more pedestrian-friendly streetscape. The news outlet shared a similar sentiment as recently as 2017 in a story written by Angela Hill:

Southland Mall in Hayward has been struggling, judging from a recent visit. Its white-tiled concourse still boasts a Sears, a JCPenneys and Macy's. Dick's Sporting Goods recently filled a vacant spot. And a walled-off section has a big sign, "New Century

Theatres, coming 2017.” But just across from that are a handful of empty stores. Mid-day, mid-week there were only about 10 people in the food court and several kiosk workers told me it’s rarely busy most days. Despite appearances, however, Southland spokesman Matthew Chudoba says, “Sales are at an all-time high and there is a slate of new retailers opening over the coming months including H&M.” He also says Victoria’s Secret and Bath & Body Works are upgrading and remodeling their shops. So, let’s hope for the best.

Southland Mall is the only mall in Hayward.



**Figure 1. Southland Mall Footprint (Retrieved from Google Earth, 10/14/22, facing north)**

### Property Owner Information

Brookfield Properties Retail is a subsidiary of the global real estate company Brookfield Property Partners. See Chapter 6 for a description of the company. With an interest in sustainability, in general, Brookfield Properties is interested in mixed use. At the Southland Mall, however, Brookfield Properties does not own all of the parcels on the site. In particular, Sears occupied and owned a large parcel, a 34-acre parcel on the north corner of the site off the Nimitz Freeway and Winton Avenue.

## Land Use and Planning

Sears bankruptcy led to the closing of one of the mall's major anchors in February 2020. Macy's, and J.C. Penney remain as anchors in the mall. The mall property is divided into 5 parcels, and the Sears parcel, 34 acres, was acquired by Transformco and three other investors (P. Nguyen, Hayward Econ. Dev. Director interview 10/17/22). Transformco was established in February 2019 to purchase the remaining assets of Sears Holding Co. Transformco and the new owners of the Sears parcel are interested in developing housing on the site. Currently, however, the company is offering the former Sears site for leasing (Transformco 2022).

The entire mall is zoned as a Commercial Business District (CB). According to the Municipal Code, housing is allowed above commercial or standalone within the site. Redevelopment is welcome by the City and adding housing to the Sears parcel would also be welcome (S. Buizer, Hayward Dep. Dev. Services Dir., and C. Morales, Housing Div. Manager, Interview 10/17/22). The old Sears site could possibly be developed at 17dus/acre yielding over 500 housing units. However, redevelopment of the site is complex because the mall falls under the Hayward airport safety zone, with varying height and density limitations. Any housing development would likely take several years to obtain approvals because of its location within the airport safety zone.

The city has a novel program to help developers in formulating their plans and winning approval. The Concept Review Program provides opportunities for developers to go to the City Council and pitch a project idea, provide examples of their work and get a sense of how receptive the Council would be to the project.

Overall, to get a project shovel-ready could take several years, according to City officials. The Environmental Impact Report would take about 1 ½ to 2 years, since it would need to consider the airport and the planes' trajectory.

## Demographic Profile for Hayward

According to the Census Bureau, in 2021, Hayward had a population of 159,827, and an owner-occupied housing rate of 55.1%; a median annual household income of \$91,490, and a per capita annual income of \$35,983. Its poverty rate was 8.5%. This can be compared to California's overall rates for this period: 55.3% owner occupied housing rate; medium household income of \$78,672, a per capita income of \$38,576, and a poverty rate of 12.3% (US Census Bureau, 2021) Compared to the State of California's average owner-occupied housing rate, Hayward's rate was almost the same; its average household income was \$12,818 higher, but its per capita annual income was \$2,593 lower. Its poverty rate was 3.8% lower than the State's overall rate.

The City of Hayward has an area of 64.06 square miles or 40,998.4 acres, with a gross density of 3.9 persons/acre.

## Housing Needs in Hayward

According to the Association of Bay Area Governments (ABAG), the regional government that sets Regional Housing Needs Allocations (RHNA) for Bay Area cities, Hayward, during the 5<sup>th</sup> Cycle, 2015-2023, had the following housing targets:

- 851 units for Very Low Income households.
- 480 units for Low Income households.
- 608 units for Moderate Income households.
- 1,981 units for Above Moderate-Income households.

Altogether, the total target for new housing units for the City of Hayward by 2023 was the construction of 3,920 housing units. According to the State's Department of Housing and Community Development (2020), as of the end of 2019, the City of Hayward had only permitted/or built 1,076 units (less than a third of its total allocation), most of them for above moderate income (1,029 units), 27 units for moderate income, and 20 units for low-income. Hayward is now preparing to meet its 6<sup>th</sup> RHNA housing allocation which calls for a total of 4,624 units of housing, allocated among the following income groups:

- 1,075 for Very Low Income, <50% of median income
- 617 for Low Income, between 50-80% of median income
- 817 for Median Income, between 80-120% of median income
- 2,115 for Above Median Income, >120% of median income (ABAG 3/2022)

## Transit Information

Southland Mall is located .5 miles from the Hayward BART (Bay Area Rapid transit) station, with Highway 880 just to the east of the site. The mall is also serviced by a number of bus stops along Hesperian Blvd, as shown in the Google Maps image. According to Transit.wiki, an open-source trip planner and public transit information guide, Southland Mall is served by the following bus lines and can be considered a transit hub:

- S: Hayward (Hesperian & Winton) - San Francisco
- 60: Chabot College - Hayward BART - CSU East Bay
- 86: Hayward BART - South Hayward
- 97: Hesperian: Union City Station - Bay Fair Station

## Environmental and Health Profile through CalEnviroScreen

The eastern edge of the Southland Mall borders the I-880 Freeway. According to CalEnviroScreen (2022), it rates in the 61<sup>st</sup> percentile of all the census tracts in the State in terms of environmental burdens, with the pollution burden in the 41<sup>st</sup> percentile, but the population burden in the 71<sup>st</sup> percentile. High exposure indicators include Diesel particulate matter at the 86%, and Traffic at the 95<sup>th</sup> percentile. It rates high in sensitive population indicators, such as asthma (91 percentile), low birth weight (87<sup>th</sup> percentile) and Cardiovascular

disease (81 percentile).

## Findings

Southland Mall is an 82-acre mall, with surface parking on 70% of its site. The mall's zoning falls under the City's Commercial Business District, which allows housing above commercial or stand-alone. One of its major anchors, Sears, closed in early 2020, but its 34 acre parcel was acquired by a company that is interested in redeveloping the parcel as mixed use or residential.

The City would welcome residential development on the mall site, especially since its RHNA allocation for the 6<sup>th</sup> cycle sets a higher target than the last cycle, and California's DHCD will have more rigorous oversight and enforcement during this cycle. However, the mall falls under the Hayward Airport Safety Zone and any redevelopment would need to undergo special review by the Hayward Airport Land Use Commission, and such a review would lengthen the redevelopment process.



Figure 2. Southland Mall. Photo from Google Earth (7/14/22)

## Chapter 8. Northgate Mall

5800 Northgate Mall, San Rafael, CA

**Owner:** Merlone Geier Partners

**Zoning:** CBB20: Central Business - Min. Lot Size - 20,000 Sq Ft or (according to Buddy) General Commercial (GC)

**Surrounding Zoning:** Public/Quasi-Public Zoning District, (P/QP), Parks/Open Space Zoning District (P/OS), Planned Development District (PD), Commercial, Single Family Residential

This 42-acre mall opened in March 1965 as an open-air concept with anchor stores Sears and the Emporium. Surface parking covers approximately 40 percent of the mall's property. The mall featured world class landscape architecture by Lawrence Halprin, the landscape architect behind the 1962 Seattle World Fair and the F.D.R. Memorial in Washington D.C. (Marin History Museum). The mall was enclosed in 1986, featuring a glass ceiling and frequent support columns. By 2008, when the design of the mall had become outdated and the only enclosed mall in San Rafael, rivaled by high-end Shops at Corta Madera, owner Macerich chose to keep the glass roof and undergo an indoor remodel (Marin Retail Buzz 2008). Anchors include Macy's, Kohl's, RH Outlet, Century Theatres, H&M and HomeGoods. In 2018 and 2019, Northgate Mall lost Sears and Forever 21 due to national closures of both companies. Macerich, a prominent real estate developer around the United States, owned the mall from 1985 until they sold it to Merlone Geier in 2017.



Figure 1. Northgate Mall (Source: Google Earth 10/14/2022)



## Land Use and Planning

The City of San Rafael is engaging the community in an active planning and redevelopment process for the mall. According to the owner's website, the mall "draws from an affluent community with average household incomes of \$158,000 within a 5-mile radius," (Merlone Geier Partners). In 2019, Merlone Geier proposed a redevelopment of the Mall to the City that included replacing the Sears vacancy with a Costco. This plan was widely opposed by residents (S. Ciment 8/19/2019), rejected by the City and has led to the current plans for the redevelopment of the mall. The main concerns to the developer's prior plan were increased traffic and health consequences from the proposed addition of a Costco gas station.

In 2021, Merlone Geier presented a new plan (Quackenbush 3/12/21), which includes nearly 1,400 apartments. In 2022, the owner-developer revised the plan to include 907 residences by 2025, and 405 homes before 2040. The mall owner plans to offer 85 (3 story) houses for sale in the first phase of the redevelopment, and the remaining market units in the second phase. The plan envisions transit-oriented housing combined with commercial spaces, retail, and restaurants, and the town square that residents in the area had requested: a 50,000 square feet town square, with space for gatherings, outdoor concerts, and movies, and special events, as well as a children's nature playground. In addition, Merlone-Geier donated a two-acre section to a San Rafael-based non-profit, EAH Housing, to develop 96 affordable housing units with onsite support services. An additional 42 affordable apartments would be scattered among the new developments. The redevelopment is to include solar power, and all residential buildings are to be 100% electric. Merlone-Geir's plan for redevelopment is in two phases: the first phase starting in 2025 would add 907 residential units to the mall property, followed by 413 homes beginning in 2040.

In November of 2022, the owner-developer plans were undergoing review by the Planning Department, Planning Commission and City Council, and awaiting the release of the Draft EIR by Spring 2023. The City officials expect a Council hearing on the project in the Summer of 2023 (Guidice, A. Interview, 10/21/22 and L. Mendez, Interview 10/28/22). The City is ensuring many opportunities for community engagement. Community concerns revolve around the density of some housing in the proposal, however, the density of the project is consistent with the General Plan. Both the City Council and the Planning Commission support increasing housing in the City.

Community members have expressed concern about the amount and scale of the housing proposed (Responsible Growth in Marin, 11/2/22) but the owner-developer and the design team have been receptive to public concerns. The City of San Rafael has a web-page with information about the plans (San Rafael, 11/22/22).

## Property Owner Information

Merlone Geier, a California-based company acquires, develops, and manages neighborhood shopping centers on the West Coast. To date, they have acquired 173 properties (Merlone

Geier, About Us, 2022). Under their investment criteria, the company emphasizes their interest in “non-dominant and/or functionally obsolete regional malls in need of repositioning” (Merlone Geier, Investment Criteria, 2022).

### Demographics for San Rafael

According to the Census Bureau, in 2021, with a population of 60,769, San Rafael had an owner-occupied housing rate (2016-2020) of 49.4 %. The median value of a home in San Rafael was \$975,500; its median household income was \$97,009, and its per capita income was \$57, 290. The percentage of persons in poverty was 11.4 %. Compared to California’s statistics, San Rafael had a 5% lower home ownership rate, with a median house value \$437,000 higher than California’s median. The city’s median household and median individual income were over \$18,000 higher than the State’s, and its poverty rate was about 1% lower than the State.

### Housing Need in San Rafael

According to the 2015-2023 Regional Housing Needs Assessment conducted by the Association of Bay Area governments, San Rafael needed to produce 1,007 units of housing, distributed by unit type as indicated below:

- Very Low: 240 units
- Low: 148 units
- Moderate: 181 units
- Above Moderate: 438 units
- For a total number of units: 1007

For the 6<sup>th</sup> RHNA cycle, San Rafael’s total Housing allocation is 3,220, more than tripled from the last cycle:

- 857 units for Very Low Income
- 492 units for Low Income
- 591 units for Moderate Income
- 1,350 units for Above Moderate Income

The City has revised its Housing Element for the 6<sup>th</sup> RHNA cycle to meet this housing challenge (Guidice 8/16/21).

## Housing Policy

San Rafael currently offers the following density bonus for affordable housing:

- 2-10 units =10% of units must be affordable
- 11-20 units 15% of units must be affordable
- 20+ units 20% of units must be affordable
- Rental developments:\* 50% of affordable units for very low income and 50% of affordable units for low income Ownership developments: 50% affordable to low income and 50% to moderate income

## Transit Information

Northgate Mall is located directly off the US 101 freeway. Six Marin Transit bus stops are on the perimeter of the Northgate Mall, which can be considered a transit hub. They serve the following routes:

- 257 San Rafael - Novato (Ignacio)
- 35 Canal - Novato
- 49 Downtown San Rafael - Novato
- 145 San Rafael (Downtown - Terra Linda HS)
- 245 San Rafael (Downtown - Smith Ranch Road)

## Environmental Review

According to CalEnviroScreen in 2022, the census tract where the Northgate Mall is located falls in the 19<sup>th</sup> percentile of all census tracts in California in terms of pollution burden and population characteristics. Traffic at the 59<sup>th</sup> percentile and hazardous waste at the 81 percentile have the highest exposures, and unemployment rates in the census tract rated the highest in Socioeconomic Factors at the 83rd percentile.

## Findings

The mall owner, Merlone Geier is a California-based company with ownership of over 100 shopping malls in California, Oregon and Washington State. The firm is interested in “non-dominant and/or functionally obsolete regional malls in need of repositioning” (Merlone Geier 2022), as well as in mixed-use redevelopment. The inclusion of a central plaza in the redevelopment plan of the mall responds to a main interest of residents. But there are still concerns about the number and scale of some of the residential projects included in the redevelopment plan, and of the character of the open space/central plaza.

The redevelopment of the mall with a significant housing component, as currently planned, will help the City meet the increased allocation for housing assigned to the City under the 6<sup>th</sup> RHNA program.



Figure 2. Site Photos of Northgate Mall (Google Earth 4/25/22)

## Chapter 9. Redevelopment Scenarios

The previous study (Blanco 2021) provided a rough calculation of the potential for redevelopment for several major malls. It used Bob Bengford’s (2017) guidelines for calculating housing units per net or gross density. The distinction between gross and net density is important to explain here: net density refers to the density of individual lots in a development, while gross density includes the area not just of the lots but also of the rights of way (streets) and common open spaces. See Table below for an illustration. Net density is calculated by dividing the number of dwelling units by the Lot Area, while gross density is calculated based on the overall parcel area.

**Table 1. Gross and Net Density Explained**

Gross and Net Density Explained		
	Acres	Percentage of Parcel
Overall Parcel Area	100 acres	100%
Private and Public Roads	25-30 acres	25-30%
Open Space Requirements	10-15 acres	10-15%
Total Lot Area	55-65 acres	55-65%

In this case, if one thousand units (1,000) are planned for a 100-acre parcel, the gross density would be 10 dus/acre, while the net density would be 14.5 to 22.2 du/acre. Bengford's guidelines (2017) provide rough calculations and visualize potential redevelopment at various densities. See Figures 1 and 2 below that illustrate redevelopment at 59 dus per net acre and 162 units per net acre.



Figure 1. 59 Dwelling Units/Net Acre (Illustration from Bengford 2017)



Figure 2. 162 Dwelling Units per Net Acre 6 Story Buildings, Commercial at Ground Level (Illustration from Bengford , 2017)

The assumption in the 2021 study was that the entire mall acreage would be redeveloped (allowing 50% of the mall acreage to be reserved for rights of way and open spaces), at two specific net densities for illustration purposes. It provided housing calculations for two densities, 59 units per acre (a blend of 4 story buildings with ground level retail, townhouses and surface parking) and 162 units to the acre (with 6-story mixed use building over retail, and underground or podium parking). Using two density scenarios is useful for visualizing the scale

and potential appearance of redevelopment at such densities. The densities in the scenarios used were net densities, that is, a certain percentage of the area to be developed under the scenario is set aside for roads and open space. The percentage used for streets and open space in the previous study was 50% which was generous compared to actual practice, which tends to be about 35-45% (25-30% for roads/surface parking; 10-15% open space). For example, the American Planning Association old standards (PAS #46 1953) for residential subdivision densities included: streets and rights of way from 20-25% or about 1/5 to 1/4 of gross area, open space requirements from 10-12%, which left from from 63-70% of the area available for development.

Here we provide a more realistic assessment of the housing redevelopment potential of four malls profiled in the previous study. The updated information on the malls was provided in Chapters 5-8: two in southern California, and two in the Bay Area.

Redevelopment of malls depends on the amount of viable retail that will be retained, the age and conditions of the existing mall, and on the acreage of the surface parking area. Based on these characteristics, more realistic calculations can be developed.

The amount of surface parking in an existing mall is a significant factor in determining the potential for new housing development. In the case studies profiled in the 2021 study, the range of surface parking acreage varied from 31% (e.g., Parkway Plaza, which already has two 2-story parking garages) to 75% of total acreage (e.g., Sunrise Mall in the greater Sacramento area).

Instead of assuming that the entire area of a mall will be redeveloped, in this study, we make a more realistic assumption, namely that half of the commercial space remains, freeing up the reductions in surface parking area, as well as the other half of the commercial footprint available for redevelopment.

The surface parking acreage of a shopping mall is key to its redevelopment potential. The greater the percentage of surface parking, the greater its potential for redevelopment, since site preparation (e.g., the avoided costs of demolishing a building) should be faster and less costly.

The calculation is straightforward for one-story shopping malls without existing parking garages. If the mall is a mix of single or multi-story mall structures, or one multi-story mall

structure, redevelopment is more complex, and a realistic scenario would need to include the age and condition of the structure(s) and their potential for housing conversion.

### Area of Malls and their Surface Parking

Guidelines for the amount of parking for shopping centers are typically based on the amount of Gross Leasing Area (GLA) in a shopping mall. The typical standard, dating back to the 1950s

(APA 1954), is that shopping malls should plan to have one parking spot per 1,000 sq. ft. of GLA. The typical area for a parking space is about 300-350 square feet, or about 3 to 3.3 cars per 1,000 square feet.

Table 2 below provides the information needed to conduct a rough calculation of the redevelopment potential of malls as mixed use. The process is simple:  $\frac{1}{2}$  of the footprint of the mall structure +  $\frac{1}{2}$  of the surface parking area = the area freed for redevelopment (Using the table above:  $\frac{1}{2}B + \frac{1}{2}D = \text{Potential Area (in acres) for Redevelopment}$ ). The housing potential of the area available for redevelopment would depend on the density of housing planned.

The scenarios developed in the next sections assume that half of the commercial structures are retained as they are or redeveloped occupying a similar acreage.

**Table 2. Mall Acreage, Surface Parking and Potential for Redevelopment**

Mall	A. Gross Area	B. Footprint of Structures	C. Gross Leasable Area in square feet (GLA)	D. Parking Spots Needed for GLA at 300-350 sq. ft. per parking spot (3-3.3 spots per 1,000 sq. ft.)	F. Parking Spots Reported	G. Surface Parking Acreage
Shoppes at Carlsbad	90 acres	33-31 acres; the 57-acre surface parking area is owned by either the City of Carlsbad or Carlsbad Parking Authority	1,119,104	3,730-3,197	6,234	59 (65.5%)

Parkway Plaza	80 acres	46 acres (Assumed that the footprint of structures include the two 2-story garages)	1,319,047	4,397-3,768	6,052	34 acres (42.5%) has 2 two story garages
Southland 2-level mall structure	82	57 acres	1,300,000	4,333-3,714	7,200 (but 5,500 listed on the website of mall)	57 acres (70%)
Northgate	42	25 acres	755,677	2,519-2,159	3,208	17 acres (40%); with a 2-story garage

**Note:** The source of GLA figures and parking spots is the Directory of Major Malls (11/15/2022)

## Potential Redevelopment Capacity

### Shoppes at Carlsbad

With a total area of 90 acres, and 33-31 acres in mall structures, it is clear that the Shoppes at Carlsbad has an oversupply of parking—close to twice as many parking spots as recommended for its GLA. And the City is already in the planning stage for its redevelopment. The City of Carlsbad owns all the surface parking on the site, which amounts to 57 acres, and is actively engaged in a community planning process to redevelop their holdings for housing (City of Carlsbad 10/14/2020), as well as with the owner-developer of the mall.

The City estimates that there is an opportunity for adding about 1,000 dus to their property on the mall. (Lardy and Goff Interviews 10/24/22). The assumption is that ½ of the parking area or about 28 acres could be redeveloped for housing at their proposed rezoning (R40) which would yield 37.5-40 dus per acre or about a total of 1,050 dus. The City initiated a General Plan Amendment for rezoning the mall, and is engaged in a Scoping process for the EIS, which should be completed by 2024. The zoning changes will also permit the owner-developer, Brookfield, to



redevelop its mall acreage at higher density above commercial uses. If we assume that Brookfield would build 4-5 story structures on 25 of their 33 acres, at 59 dus/per net acre with ground floor commercial, the redevelopment could yield close to a thousand units. Combining the redevelopment potential on the parking lots that the City owns at lower density (1,050 dus), and the mixed use redevelopment (which could total around 1,000 dus or more), the total redevelopment of the mall could generate approximately 2,000 new dwelling units or more.

Since the site is undergoing a rezoning, no site plan was available for the Shoppes at Carlsbad.

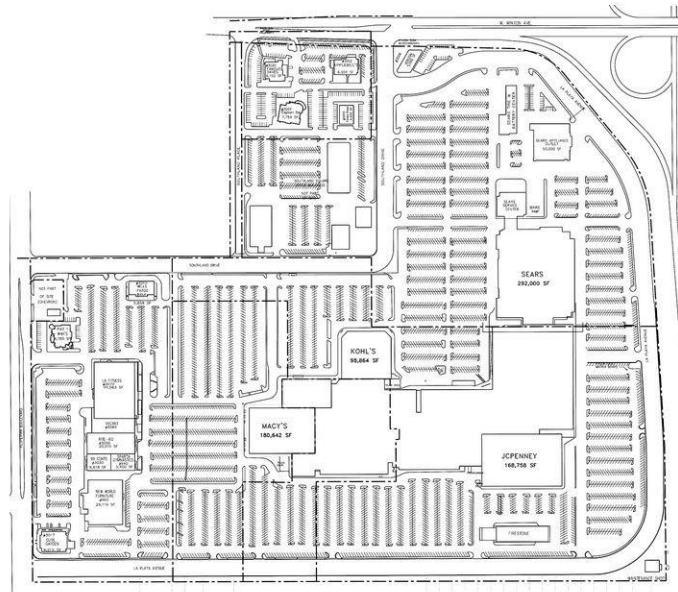
## Parkway Plaza



**Figure 1. Parkway Plaza Site Plan. Source: Directory of Major Malls, retrieved 11/15/22, note that this site plan may not reflect current tenants or configuration.**

Parkway Plaza's area is 80 acres, with mall structures covering 46 acres, and 34 acres of surface parking. If we assume that  $\frac{1}{2}$  of the mall structures are demolished, this will free up 23 acres, and 17 acres in surface parking, for a total of 40 acres that could be redeveloped. If we assume that  $\frac{1}{2}$  of the acreage would be used for open space and roadways, that will leave 20 acres that could be developed at different densities from 59 du/acre to 162 du/acre. At the lower density, the redevelopment could generate 1,180 du/acre, and at the higher density, it could yield 3,240 dus.

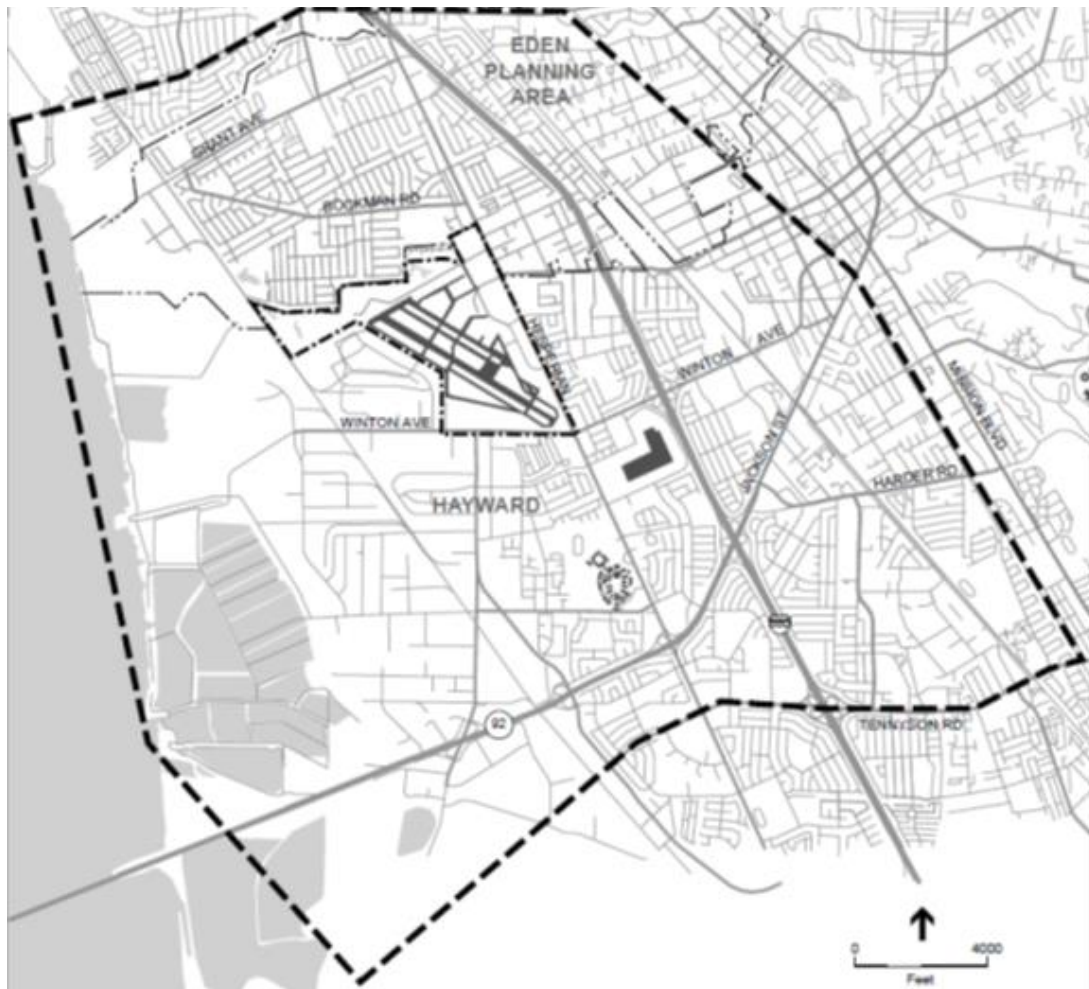
## Southland Mall



**Figure 2. Southland Mall Site Plan. Source: Directory of Major Malls, retrieved 11/15/22, note that this site plan may not reflect current tenants or configuration.**

Note in the Site Plan above, on the top right-hand side of map, with the footprint of the Sears building towards the middle, the area in that quadrant was bought by Transformco Properties in 2020. Transformco is a new company formed in February 2019 to acquire some of the assets throughout the country owned by Sears Holding. It is now seeking to lease the property and lists it as 29.36 acres with 5 buildings (one story), with a total square footage of 163,347 and 1,488 parking spaces. Transformco is interested in housing redevelopment on its property.

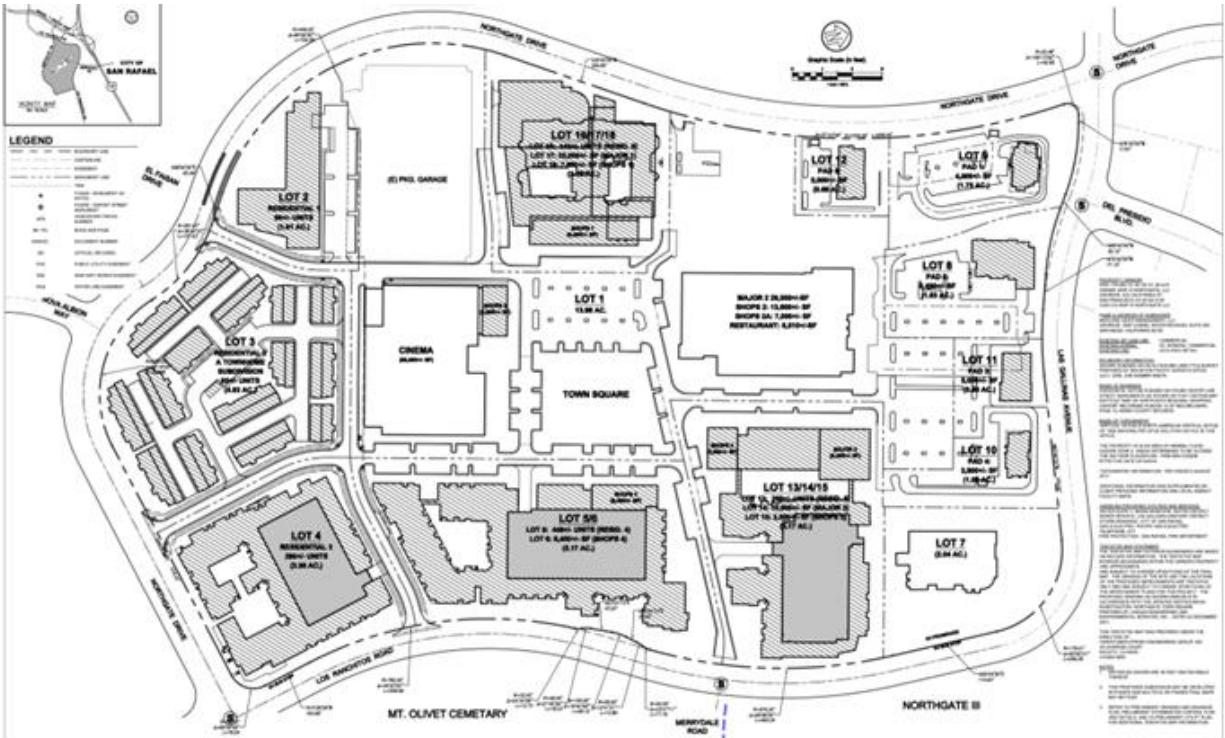
Southland is the only major mall in Hayward and is still anchored by JC Penny and Macy's. The City of Hayward is receptive to housing in the mall, but the site is complex, given its proximity to Hayward Airport. See map below.



**Figure 3. Map of the Airport Influence Area, (highlighted with the dashed lines). The Southland Mall is located in the L shape diagonally below the airport, between Winton Ave and the highway). Source: Alameda County Planning Department. 2012. *Hayward Executive Airport Compatibility Plan*.**

With the mall's proximity to the airport, it is not clear whether housing above commercial would be permitted beyond a second story in most of the mall site. The former Sears site, however, is in a less hazardous airport zone than the rest of the mall. It is likely that moderate density development at 59 du/net acre but no higher than 3-4 stories could be permitted on the Transformco site. Regardless, any new development on the mall site, including on the Transformco site, would need to be reviewed by the Airport Land Use Commission which reviews land use actions and development permits within the Airport Influence Area, as Figure 3 above illustrates.

## Northgate Mall



**Figure 4. Northgate Mall Redevelopment Plan. (City of San Rafael 3/2022).**

Northgate Mall, a smaller mall than the other cases discussed above, is far along in its plans for redevelopment. The site map above sets out the different lots for residential redevelopment, with varied densities for each lot:

- Lot 18: (at the top center): 96 units planned on a 1.91-acre site
- Lot 2: (moving counterclockwise on the map): 85 units planned on 4.83 acres
- Lot 3: 280 units on 3.36 acres
- Lot 4: 446 units on 5.17 acres
- Lot 5: 266 units on 5.17 acres
- Lot 13: 147 units on 3.18 acres

The total number of units planned is 1,320 on 23.62 acres, with an average density of 55.9 du/acre. This is close to the result that the process outlined in this chapter yields.

The rough formula, developed above, is the following:

$$\frac{1}{2} \text{ of the Footprint of Buildings} + \frac{1}{2} \text{ of the Surface Parking Area} = \text{Potential Area (in acres) for Redevelopment}$$

For the Northgate Mall, the mall structure footprint is 25 acres, and the surface parking is about 17 acres. In this case, half of the footprint of the existing structure is 12.5 acres, and half of the surface parking is 8.5 acres, for a total of 21 acres available for redevelopment. At 59 du/ net acre, this would yield a total of 1139 dwelling units.

The housing potential of the area available depends on the density permitted by the local government. In the case of Northgate, the designers are planning for a variety of densities, including a mixed-use higher density building in Lot 5. The discrepancy between the results between the Northgate plan and the calculation proposed here, as a rough guide, is likely due to the existing capacity of the 2-story parking structure which will remain in the mall. The parking structure frees up more acreage for redevelopment, in this case making up the 2.6 acres difference. This brings up an important point, i.e., that the major way of freeing up more space in a failing shopping mall for redevelopment is to invest in parking structures.

## Findings

The process outlined and applied in this chapter is a simple way, with easily obtainable information, to determine the potential mixed-use redevelopment capacity of a failing mall, especially if the mall is one-story. It could provide a credible total estimate of the potential supply of housing that the redevelopment of failing malls in California or elsewhere could contribute to increase the supply of housing while providing lively mixed use suburban centers. The case of the Northgate Mall, where the redevelopment plan is further along than the other cases, suggests that an important way to free up more land for redevelopment is to invest in parking structures.

## Chapter 10. Conclusions

Building on previous research (Blanco 2021), this research developed a process to assist the State and local governments in assessing the redevelopment potential of failing shopping malls as mixed-use centers that optimize opportunities for housing, and provide neighborhood commercial and other residential amenities, i.e., parks, pedestrian, and bike-oriented streets.

The project reviewed the findings from the recent trends and literature on major shopping malls (from 40-120 acres in area) in California, 136 major malls in the State in mid-2022, to assess their potential for redevelopment. Although the data necessary for a thorough assessment was not provided by most shopping malls in the State to the Directory of Major Malls (the major shopping mall database in the country), extrapolating from the data provided, it is likely that about 2/3rds of the shopping malls in California, given their sales and ratings, are good candidates for redevelopment. It then focused on the housing needs and initiatives in the State, including California's major strategy to address the housing shortage in the State (currently estimated at 2.5 million units by 2018) --its Regional Housing Needs Assessment, and how local governments are addressing this issue. It reviewed recent State legislation that is

aimed at increasing the housing supply through changes in zoning, and parking requirements, as well as the State's Enhanced Infrastructure Financing Districts (EIFDs) and Public Private Partnerships (P3s) as potential ways for local governments and mall owner-developers to partner in mall redevelopments. This report then provides a literature review of working from home (WFH) trends, which has important implications for moves to the suburbs and how increases in WFH can increase the demand for housing, public plazas, and leisure activities which have been traditionally found in urban centers.

The research profiled four major malls, two in the San Diego region, and two in the Bay area, and examined their conditions and prospects for redevelopment, and found two of them actively engaged in a redevelopment process that will include significant housing (Chapters 5-8).

Chapter 9 develops and presents a simple process that can provide a rough calculation of the residential potential of a redeveloped mall (Chapter 9). The malls profiled enabled the application of the simple method developed in the study to provide a rough, initial calculation of a mall's mixed-use residential capacity that can assist in the analysis of its redevelopment potential.

Redeveloping failing malls can expand housing opportunities in suburban areas for singles, seniors, couples, and families in apartments or townhouses that may want the amenities that a suburban center provides without the investment and upkeep of suburban single-family homes. Their redevelopment can also provide a share of a locality's affordable housing obligations, as well as needed housing for college students in California. At the same time, adding housing to such malls will also provide the residential component needed to ensure the liveliness and safety of a town center.

Mixed-use malls are likely to reduce vehicle trips, vehicle miles traveled (VMT) and green-house gas emissions. Currently, several bus lines serve the shopping malls studied in this report, and the malls qualify as located in transit-rich areas. In the case of mall redevelopments, as appropriate, State, regional, and local transportation agencies could partner with mall owner-developers to provide enhanced transit access to redeveloped malls. This would reduce congestion in many highways by reducing single occupancy vehicle (SOV) trips and VMT. This may not achieve all the objectives of Transit-Oriented-Development (TODs) but would advance these objectives (Calthorpe 1993). Through a new California law that will become effective in 2023, enhanced transit can also reduce parking requirements for residential units, thus reducing the price of apartments or townhomes in mixed-use redeveloped malls (by an estimated \$36K per unit).

Local governments can facilitate such redevelopments through various means. For example, if a local government owns a parcel in a mall, as in the Sunrise Mall redevelopment in the Sacramento area (Blanco 2021), or, as in the Shoppes at Carlsbad profiled in this report, it can initiate and lead a timely redevelopment process, ensure public participation in the planning

process, and an appropriate housing component. If local governments do not have partial ownership of a mall, local governments can initiate zoning changes that can speed up a redevelopment process to include housing.

Through local economic development departments, local governments can identify potential funding for affordable housing from federal, state, or local funds and, when appropriate, use public-private partnerships to ensure appropriate mixed-use redevelopment.

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## Data Management Plan

Most of the data reported in this study comes from published articles, or reports, which are cited in this study, or from widely available public resources, such as the California Office of Health Hazard Assessment's CalEnviroScreen 4.0 or US Census data.

The source of data on major shopping malls in California is the Directory of Major Malls, which maintains a proprietary database of shopping malls across the nation. This data is available by subscription only.

The source of maps and illustrations, unless noted, is Google Earth. The maps and photos in the report were obtained during March through September 2022. We obtained access to these maps and photos of the four case studies through the following links (Google Earth Version 9.177.0.1):

<https://earth.google.com/web/search/415+Parkway+Plaza,+El+Cajon,+CA/>

<https://earth.google.com/web/search/1+Southland+Mall,+Hayward,+CA/>

<https://earth.google.com/web/search/2525+El+Camino+Real,+Carlsbad,+CA/>

<https://earth.google.com/web/search/5800+Northgate+Mall,+San+Rafael,+CA/>

## Appendix

### DHCD

The project planned interviews with officials from California Housing and Community Development Department, and approached several officials at HCD to obtain more information about relevant programs, but we were not able to obtain interviews.

### Legislative Staff Interviews

We also approached legislative staff of CA State Senators and Assembly Members who have recently initiated laws focused on zoning changes to increase housing development in commercial areas, and we were able to obtain one interview with Senator Caballero's Legislative Director, Jeffrey Roth, on 10/25/22 who provided insight into the new law, which we have incorporated into the Chapter.

### Interviews with Planners and Officials in the Case Study Cities

**Parkway Plaza** (Dr. Blanco and Andrew Davidov)

**11/4/22 Zoom meeting**

Noah Alvey, Senior Planner, City of El Cajon

**The Shoppes at Carlsbad 10/24/22** (Dr. Blanco and Andrew Davidov)

**Zoom Interviews 10/24/22 with**

Jason Goff, Senior Planner, City of Carlsbad

Eric Lardy, City Planner, City of Carlsbad

**Southland Mall Interviews with Hayward City Officials**

**Zoom Interview (Dr. Blanco and Kish Rai) on Oct. 17/22 with the following:**

Sara Buizer, Deputy Director, Development Services

Paul Nguyen, Economic Development Director

Francesca Hatfield, Planning Dept.

**Northgate Mall Interviews with San Rafael City Officials**

**Zoom Interviews (Dr. Blanco and Kish Rai) with the following:**

Leslie Mendez, Planning Manager 10/28/22 Zoom meeting

Alicia Guidice, Director, Community Development 11/1/22 Zoom meeting