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Do New Housing Developments Increase Traffic? An Analysis of Cupertino's Current Housing Cycle.

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ABSTRACT

Increased traffic due to new residential developments is often touted as a reason by Cupertino citizens to oppose new housing developments in the city. In this paper, we endeavor to find whether this argument is supported by the data.

We measured the net change in car trips generated from a dataset of 22 projects in Cupertino's current housing cycle using trip rates from the ITE's 10th edition of the Trip Generation Manual. From this cycle's mix of projects,we found that there is an expected net reduction of 1143 in trips from new housing developments across the city, as well as a net reduction of 3814, and 124 along major corridors Stevens Creek and De Anza Boulevard respectively. Only along Foothill Boulevard was there an expected increase of 256 trips.

Our findings challenge, for Cupertino's specific case, the traditionally-held view that new housing developments increase traffic, as new projects in Cupertino usually replace higher-traffic office and commercial sites. Our findings also provide complementary evidence to existing research that retail centers increase car traffic.

Keywords*:* housing development, commercial replacement, trips

INTRODUCTION

A common objection to new housing development in Cupertino is that new housing brings more traffic onto often already congested or low capacity streets. In the past, community opposition to new traffic has stymied new housing development. Most recently, a 51-townhome project on Evulich Ct, upon its approval by the City Council, was sued for traffic and evacuation concerns. One citizen told San Jose Spotlight, "We already are gridlocked here during school hours and commute hours…You add 51 [homes], that's 100-odd cars and it's just adding to the safety issue of the neighborhood if you have to evacuate" (Casas-Perez, 2026). Cupertino's opposition to new traffic is not unique; the Legislative Analyst's Office found in 2016 that "Many local communities…have constrained housing development…

[due to] residents' concerns about the changes that new housing may bring. New housing—and the associated new residents—can exacerbate traffic congestion and parking shortages" (Uhler, 2016). A 2021 study by USC researchers confirms the power of local opposition: in one survey, "Half of the developer respondents reported that city councils/county boards of supervisors were either 'a lot' or 'a great deal' persuaded by public opposition arguments" (Burinskiy et al., 2021). Given the prevalence and power that these arguments—such as ones related to traffic—have in approving new housing developments, it is important to verify whether such arguments have basis in traffic data.

Much research has been done into measuring how existing density influences commuter behavior. Cervero (1996) found from the data of the American Housing Survey that the likelihood of non-motorized commuting increased as neighborhood densities increased, as well as when "shops and other non-residential activities [were] in the immediate neighborhood." This study laid the groundwork for Cervero and Murakami (2010), which found across 370 urbanized areas in the US that, in addition to higher density lowering vehicle miles traveled (VMT) per capita, higher retail density increased VMT per capita. Both of these studies, however, are cross-sectional, and only found the connection between higher density and lower car traffic for existing, urbanized environments. No such study has been conducted on the long-run outcome of car traffic for areas that have begun converting from rural to suburban, or suburban to urban. Additionally, both studies used national databases for nationwide, aggregated results, yet no study has been done on the individual, project-based impact of a housing project through calculating the trips generated from such a development.

California provides a unique opportunity to investigate the long-term traffic impacts at the project level. California has many housing laws in place to force its cities to densify; in particular, its Regional Housing Needs Allocation, which assigns a certain number of units the city must approve by the cycle's end (California Department of Housing and Community Development, n.d.). Cities, in order to avoid punishments like Builder's Remedy and fines, must certify a Housing Element which outlines that city's plan for building new housing . In particular, cities often must upzone existing parcels to allow for higher density, and cities usually have broad discretion on where such upzoning can take place as long as there is a reasonable chance a developer would develop it (Kirkeby, 2020). Additionally, California has the California Environmental Quality Act, which requires all new developments to conduct rigorous studies on how a new development would impact all aspects of the environment (State of California Department of Justice Office of the Attorney General, 2021).[1] Thus, thousands of individual studies have been conducted on the traffic impact of a particular project on the surrounding area (see, for example, Appendix A), and such results can be aggregated to see the gross or average change in trips new projects are adding.

[1] In reality, not all housing developments must commission an environmental study. Since 1998, urban infill housing has often been exempt through CEQA's Class 32 categorical exemption (CEQA Guidelines Section 15332). More recently, AB130 has offered a separate statutory CEQA exemption for new urban multifamily housing. In any case, valuable information can be taken from the environmental analyses that do exist.

It is industry standard to measure potential traffic impacts by calculating the net trip ends that are or would be generated by a particular establishment. The Institute of Transportation Engineers (ITE) has conducted nationwide studies of trips to and from buildings and aggregated the data to find an average trip rate per unit or thousand square feet that can be used to predict the trips generated by a commercial/office building of square foot size or residential building of unit size (Institute of Transportation Engineers, n.d.).

It is important to note that many studies using the Trip Generation Manual have often been critiques of its usefulness. Researchers have criticized the ITE Trip Generation Manual's inapplicability to urban and mixed use environments (Clifton et al., 2012), in particular finding that cities' use of Level-of-Service for congestion calculations instead of Vehicle Miles Traveled discouraged new development (Volker et al., 2020). Later analysis found that traffic impact analyses disproportionately overstated the traffic impacts of urban infill housing, due to the Trip Generation Manual's data being calibrated to suburban environments (Ding & Taylor, 2021). However, Cupertino's suburban, car-oriented city structure matches the kind of city the Trip Generation Manual is calibrated for, making it optimal to answer the traffic question which local residents bring up.

As seen, academic research both using and not using ITE's Trip Generation Manual has mostly focused on housing's impact on impact in urban areas. Yet, far less attention has been paid to aggregate project-level traffic impacts from suburban housing developments. This study begins to bridge this gap by providing city-specific data on traffic changes from Cupertino's densification, specifically considering the land-use makeup of the city, especially on major traffic corridors.[2] While this paper only considers new housing developments in a particular Bay Area city (Cupertino), this paper will contribute to vast literature of housing policy in a critically lacking area of the field and invite further studies into other California cities or regionwide estimates.

METHODS

Using Cupertino's Housing Development Map, and list of major residential projects listed on Cupertino's website, we assembled a dataset of 22 sites that had either submitted their application or had undergone construction in the current RHNA housing cycle (City of Cupertino, 2026a, 2026b).[3] Sites whose status were inactive or expired were not included in the list. From Cupertino's major residential development list, we classified each development by the existing (or previous) property's use, address, and the proposed unit count of the redevelopment. Around half of the projects in our data set had been approved

[2] Unfortunately, California and its cities have only recently begun to digitize developers' CEQA studies and make publicly available datasets of housing developments which have been approved or in review. Thus, the existing dataset includes only relatively-new developments.

[3] As of June 28th, 2026, all projects listed on Cupertino's Development Map and Major Residential Projects site as of that date were considered for our data set. Any new developments added to the website after the writing of this paper are not included. Therefore, we expect the findings of this paper may be outdated in the future. See the Discussion section for more information.

by the City Council and thus had a staff report available which listed specific numbers on the square footage of the existing buildings on the parcels of the proposed developments. For projects which had not been in front of the City Council, a publicly available document was not available. In that case, we estimated the square footage of existing buildings using Google Earth's measure feature.[4] Additionally, we added a "major corridor" label for projects that fronted a major traffic boulevard in Cupertino, such as Stevens Creek, De Anza, or Foothill.

Unlike Cervero (1996) and Cervero and Murakami (2010), this study does not measure VMT per capita or transportation mode choice as a measurement of traffic. These two measures are more often used in regional or state-level environmental studies, as vehicle miles traveled and transportation mode have a direct correlation to greenhouse gases emitted. However, this study is measuring neighborhood-level traffic changes. Therefore, all that matters is how many cars are present on Cupertino's roads, not how far they are traveling. The ITE Trip Generation Manual only records car trip ends and thus represents the number of cars on the road as a result of a particular establishment, which matches the desired outcome of this study. Therefore, using the TGM's rates for changes in traffic is more appropriate in this study. Nonetheless, this study, Cervero (1996), and Cervero and Murakami (2010) all measure changes in traffic, whether it be transportation mode, vehicle miles traveled, or raw trip count.

For four of the developments in the data set, a traffic impact analysis was commissioned by the developers during the project's approval process, and we used the net trips generated findings from the corresponding study as values in this paper. Although these analyses specifically reported the net trips generated, we also inputted the gross trips generated from the existing and proposed buildings that was calculated by the impact study to verify the net trips number. Three projects, Mary Avenue Villas, Evulich Ct, 22690 SCB, had traffic impact reports which used newer editions of the trip generation manual (12th, 12th, and 11th, respectively). Although these reports had slightly different and more up-to-date data, the underlying method for calculating trips generated by a certain building has not changed. The four traffic impact analyses used in this paper can be found in Appendix A.

Other than those three projects, the remaining nineteen of these developments had been deemed either statutorily or categorically exempt from an environmental impact report by the City, or had not been approved yet, thus these developments did not have a traffic impact report. For such developments, we

[4] A brief word on Google Earth's Measure feature. The measure tool involves the user placing points on the ground-plane, which can generate imperfections in measurement and deviate from the actual square footage count. To measure the average error this approach creates, we tested the measure tool's estimations of five properties from the data set which we knew the square footage from a staff report against the reported square footage. All Google Earth measurements assumed the building was one story, as that assumption returned substantially closer results with the actual values. The mean absolute percentage error was ~9.4%, with values ranging from 3.2% to 24%. There was no consistent systematic bias in one direction (i.e. consistently under or over-estimating), suggesting that this measurement error is approximately random and cannot be accounted for using a static adjustment to the values. In any case, the projects where Google Earth was used to measure the existing buildings' square footage carry around ±9.4% error in their estimate. Since commercial buildings generate more trips per square foot than residential buildings, any underestimation on a commercial building's square footage will cause the net reduction in trips to appear smaller than it actually is.

estimated the trips generated by existing properties and proposed developments by multiplying the square footage of office and commercial spaces and the number of units for residential properties by the ITE trip generation rates. In this study, we specifically opted to use the ITE's average trip generation rates. However, the ITE also creates a regression model based on the observed data for each land use. For land use codes 210, 220, 221, and 710, these codes had regression equations that closely matched the average, thus using the average versus the equation would make little difference. For LUC 820, the average and regression equation do not line up across the square footage spectrum, however they only diverge for properties greater than 100,000 square feet, a category which only Vallco/The Rise falls in. Additionally, the R^2 values for these equations are undesirable (0.5-0.76), introducing uncertainty which exceeds the somewhat negligible difference between methods for commercial complexes under a hundred thousand square feet. Therefore, the average values are more appropriate to use as opposed to the regression equations.

Most redevelopment projects spanned multiple parcels, which sometimes had different land uses. In those cases, the trips generated by each building type were calculated separately and effectively treated as a separate property, only being aggregated with the trips generated by the other projects in the gross total. In this paper, we did not distinguish trips generated between project phases and only calculated trips generated from the final unit total after construction.

As of the publishing of this paper, the ITE has published the newest edition of trip generation rates in their 12th Edition Trip Generation Manual. Unfortunately, due to budget constraints, we were unable to acquire a license for such an edition. We were able to access a slightly older 10th edition of the Trip Generation Manual's data, and used that edition to calculate trips generated by all 24 sites. While the 10th edition of the Manual contains similar data and rates to newer editions, there is an important caveat which constrains our ability to make a conclusive policy decision. The 10th edition of the TGM does not contain a separate trip rate for townhomes, and are instead lumped in with other low-rise multifamily housing such as condominiums and apartments which are one to three stories tall. According to the Manual, the average number of units for each property observed for the trip generation rate was 160-180 units, more than double the average number of units in the majority of the townhome properties in our dataset. Since LUC 220's average is calibrated to larger properties, we expect that our calculations for townhome projects are overestimating the actual trips generated by these townhome projects. Hence, the trips generated by townhome projects represent a conservative, upper bound of trips for which it is very unlikely to exceed.

An additional caveat to our data arrives from an assumption of 0% vacancy; in other words, that all commercial/office properties are 100% filled by tenants and future residential developments will be 100% filled upon opening. In reality, this assumption doesn't always hold true. According to Cushman & Wakefield, 18.8% of office space in Silicon Valley was vacant in Q1 of 2026, although just 4.9% of retail space in Silicon Valley was vacant in Q1 of 2026 (Sierra and Rogers, 2026; Gunawan, 2026). By contrast, existing housing gets occupied fairly quickly; MLSListings found that the median single-family home sold within 7 days of being on the market (MLSListings, n.d.). That said, this fast dynamic doesn't ring as true for townhomes. While publicly available numbers for the sale time for new 60-100 unit communities

are not available, it is a telling sign that, as of April 2025, Santa Clara County had almost double the supply inventory of townhomes and condos (2.75 months) as compared to single family homes (1.3 months) (Kinoko Real Estate, 2025). These numbers indicate it is most likely that a new residential townhome or apartment project will not be fully occupied for one to two years after building. Consequently, our gross net change figures reflect the trips generated from a full buildout, full occupancy scenario in the future which is standard to EIR traffic analysis. In the short term, though, our calculations are likely skewed much higher than the observed, actual increase in traffic from these developments.

As a part of our data set, we separated The Rise from the citywide data out of anticipation of it significantly skewing the data. The Rise, being a 50 acre development creating over 2500 new units and 1.5 million square feet of office, is certainly an exception to the average development being submitted and approved by Cupertino (City of Cupertino Community Development Planning Division, n.d.). However, it is still appropriate to analyze the traffic impact of The Rise, as it is a redevelopment project in Cupertino that is scheduled to be built during this current housing cycle.

After inputting the trip rates for each building code, we calculated the expected trips for the existing building and proposed projects, giving us the net change in trips per development. Importantly, the Rise doesn't have an environmental impact report, as it was exempted from CEQA by SB 35. Thus, we calculated its traffic impact using the 10th Edition trip generation rates like the other developments in the data set. This makes our estimated gross increase of trips of The Rise susceptible to the same caveats outlined above (namely, that the 10th edition overestimates townhome trips). To find the net increase in trips from The Rise, we used the findings collected from the Fehr & Peers' traffic impact analysis for the Vallco Special Area Specific Plan, whose data has been listed in Appendix A (Fehr & Peers, 2018).

Next, we aggregated the values for each property to obtain the gross net change in trips per day from the most recent developments in Cupertino, as well as the average change per development and the change from the median development. We then repeated this process to find the gross net change in trips at peak AM hours (7-9 AM) and peak PM hours (4-6 PM) to verify our findings are consistent during rush hour. Finally, we filtered our data to find the gross net change in trips both per day and at peak hours for major traffic corridors in Cupertino, namely Stevens Creek Boulevard, De Anza Boulevard, and Foothill Boulevard.

RESULTS

From our data collection and calculations, we obtained the following data.

Table 1
Total, Average, and Median Net Daily Trips Citywide and Split By Corridor.

	All sites (excluding Vallco)	Stevens Creek	De Anza	Foothill
Gross Net Daily Trips	-1143	-3814	-124	256
Average Net Daily Trips	-42	-318	-62	109
Median Net Daily Trips	57	-147	-62	89

Across the 22 non-Vallco projects around the city, there is a projected net decrease of -1107 trips when all projects are completed and 100% occupied (Table 1). On average, a given housing project decreased trips generated by 41, however the median project in the data set had a net increase of 57 trips (Table 1). This reflects the fact that the decrease in daily traffic is driven by the removal of several high traffic commercial and office locations. In fact, just five developments (22690 SCB, Stevens Creek Office Center, Idlewild, Pizza Hut/Staples, and Westport) account for a collective removal of 5,356 daily trips from the daily count. Many other projects either are replacing smaller commercial and office buildings (see North Foothill Townhomes) or existing single family homes (see Evulich Ct or Scofield Condos), thus leading to a slight increase in trips generated.

The loss in trips per day is particularly stark on Stevens Creek Boulevard, where there is an expected decrease of 3814 trips by this cycle's end (Table 1). Similarly, the average project reduced traffic by 318 trips and the median of the set decreased traffic by 147 trips (Table 1). This particularly high number exists due to Stevens Creek's status as a large traffic corridor, primarily fronted with retail and commercial. Given that most of these projects are replacing high trip-generating retail and office spaces with lower trip-generating townhomes, it is natural to see the effect particularly pronounced on the major corridors where such retail and office space mainly is.

Following the trend from Stevens Creek Boulevard, De Anza Boulevard is also expecting a loss in traffic, although a more modest -124 trips per day (Table 1). Given that there are currently only two projects proposed on De Anza, the average and median trip numbers are the same; in any case, they both reflect that projects along De Anza are generally replacing commercial spaces that generate higher trips per day than residential.

Contrary to Stevens Creek and De Anza though, Foothill Boulevard is expecting an increase of 256 net daily trips by this cycle's end (Table 1). The average development on Foothill increased daily trips by

109, and the median project in the data set increased trips by 89 (Table 1). This result exemplifies the nature of existing properties along Foothill: unlike Stevens Creek and De Anza, Foothill is primarily fronted by single family homes and small office buildings, which generate fewer trips per day than the denser townhomes that are replacing such office and residential spaces. The trend of a projected net decrease in traffic continues when looking specifically at AM and PM rush hours.

Table 2

Total, Average, and Median Net AM Rush Hour Trips Citywide and Split By Corridor.

	All sites (excluding Vallco)	Stevens Creek	De Anza	Foothill
Gross Net AM Rush Hour Trips	-692	-842	-17	6.0
Average Net AM Rush Hour Trips	-26	-70	-9	2.0
Median Net AM Rush Hour	0.3	-16	-9	0.3

Table 3

Total, Average, and Median Net PM Rush Hour Trips Citywide and Split By Corridor.

	All sites (excluding Vallco)	Stevens Creek	De Anza	Foothill
Gross Net PM Rush Hour trips	-488	-635	-66	12
Average Net PM Rush Hour Trips	-18	-53	-33	4
Median Net PM Rush Hour Trips	-1	-24	-33	3

Citywide, we are expecting to see a net reduction of 693 and 485 trips during AM and PM rush hour respectively upon completion and 100% occupancy (Table 2 and 3). Additionally, the average redevelopment project in Cupertino reduced AM rush hour trips by 26 and PM rush hour trips by 18 (Table 2 and 3). Interestingly, the median project in the data set slightly increased AM rush hour trips by 0.3 while slightly reducing PM rush hour trips by one (Table 2 and 3). Although these values are close enough that the difference could be explained as a peculiarity of the dataset, a plausible explanation for this divergence reflects the fact that commuters may visit retail/commercial centers in the afternoon after their work to run errands. This is a phenomenon called "trip-chaining", although studies have shown that

people are more likely to run errands before work instead of after, which contradicts the finding here (McGuckin et al., 2005). More research is likely needed to see if commuter behavior has changed, however this study does not conduct such findings now.

The trends on major corridors analyzed with the daily total (Stevens Creek and De Anza down, Foothill up) are the same during rush hour. There is expected to be a net reduction in trips in Stevens Creek by 842 during AM rush hour and a net reduction of 635 trips in PM rush hour, a number larger than the all sites figure (Table 2 and 3). The average residential project on Stevens Creek had a net reduction of 70 AM rush hour trips and had a net reduction of 53 PM rush hour trips, and the median project in the data set had a net reduction of 16 trips in AM rush hour and 24 trips during PM rush hour (Table 2 and 3). Similar to Stevens Creek, De Anza is also expecting to see a net reduction of 17 trips during AM rush hour and a larger net reduction of 66 trips during PM hours (Table 2 and 3). As explained above, there are only two developments fronting De Anza in the data set, so the median and average are the same; in any case, the average and median development on De Anza will see a net reduction of 9 trips in AM rush hour and 33 trips in PM rush hour (Table 2 and 3). Finally, Foothill is expecting modest net increases to trips during rush hour, 6 and 12 trips for AM and PM rush hour respectively (Table 2 and 3). The average project on Foothill had a net increase of 2 trips for AM rush hour and 4 trips for PM rush hour, and the median project of the data set on Foothill had a net increase of 0.3 trips in the AM rush hour as well as a net increase of 3 trips in the PM rush hour (Table 2 and 3).

Table 4

Net Daily, AM Rush Hour, and PM Rush Hour Change in Trips for The Rise/Vallco.

	Net Daily Trips	Net AM Peak Hour	Net PM Peak Hour
Full Rise Increase	37274	2873	3719
Net Total (from 2018 Vallco)	28461	2388	2770
Net Total (from full-strength Vallco)	5044	2081	372

Note. Three baselines are shown. First, the full increase in trips of The Rise from its current state of a construction site, which is near zero. Second, the net increase from the trips values collected in 2018 during Vallco's decline but before its demolition. Finally, the net increase from the full-strength mall (100% tenanted).

We now move to The Rise specifically. Across the 2,622 units, 200,000 square feet of commercial space, and 1.4 million square feet of office space, The Rise is expected to create 37274 trips per day, including

2873 trips during AM rush hour and 3719 trips during PM rush hour (Table 4). Finding the net creation of trips by The Rise depends on what baseline the new trips are being netted from. The current Vallco site has sat essentially empty, generating near-zero trips per day for the last 6 years since its demolition in 2018. However, this paper has been measuring the change in traffic as a result of replacing existing establishments in Cupertino. It can therefore be argued that, even though Vallco hasn't been generating traffic for the last six years, that extended period of demolition is the same, at least in principle, for all projects; there will always be a temporary decrease in traffic as the existing building is removed and redevelopment is being built. Therefore, we can compare how The Rise will change traffic as compared to how Vallco did before. When subtracting the daily trips generated by Vallco in 2018, as the mall had already been declining, The Rise would generate a net increase of 28,461 trips per day, along with 2,388 new trips during AM rush hour and 2,770 new trips during PM rush hour (Table 4). Although Vallco had not peaked in traffic since the 90s, comparing The Rise to the theoretical height of Vallco's popularity, The Rise would have a net increase of 5,044 trips per day, including 2,081 new AM rush hour trips and 372 new PM rush hour trips (Table 4).

DISCUSSION AND CONCLUSIONS

As revealed by our data, excluding Vallco, there is an expected widespread decrease in trips per day, including during morning and afternoon rush hours, from Cupertino's current Housing Cycle developments. In specific, a gross net daily loss of 1,107 trips per day, including 693 fewer trips during morning rush hour, and 485 fewer trips during afternoon rush hour. Additionally, this loss of trips citywide is particularly stark along major corridors: Stevens Creek Boulevard is expected to have a large net loss of -3814 trips per day, while De Anza will see a smaller net loss of -124 trips per day. Only Foothill stood out as having a small net increase in daily trips (+256) due to replacing existing single family homes and small office and commercial buildings. Furthermore, the projects with the largest net increases in trips were mostly off major corridors: the Wolfe Road Teacher Housing project (+1360 daily trips) fronts Wolfe Road, the Mary Avenue Villas project (+163 daily trips) fronts Mary Avenue, and the Evulich Ct project (+336 daily trips) is on Linda Vista Drive. Only Hanover Apartments (+1418 daily trips) fronted Stevens Creek boulevard. Additionally, all of these projects are either near highway entrances (Wolfe Road, Hanover, and Mary Avenue in specific) or placed so far in the suburbs (Evulich Ct) that their increased traffic impact may not be felt as much on Cupertino roads. Furthermore, these results are a conservative, long term estimate. As mentioned earlier, the 10th edition of the Trip Generation Manual overestimates the number of trips generated by townhouses, and new townhome and apartment projects take several years to be built and fully occupied. In other words, the decrease in traffic is almost certainly greater than the numbers found in this paper.

Although The Rise has been excluded from the rest of the dataset, it is by far the most traffic-inducing development from Cupertino's current housing cycle, turning all of the citywide traffic estimates positive even when subtracting The Rise's gross trips from a full-strength Vallco mall. However, The Rise is a project which falls closer to the kind of mixed-use, urban environment which Ding and Taylor (2021)

point out is poorly modeled by the TGM due to not accounting for potential foot traffic to commercial and office sites from residents that replace car trips. Unfortunately, a project-level internal capture rate was not derived for The Rise, as development was exempted from a CEQA analysis. Therefore, the most that can be concluded about The Rise is that the net projected changes in trips is an ultra-conservative upper bound for which the real change is almost certainly below.

These data challenge the longheld assumption that new housing increases car traffic. While new townhome developments do often bring many trips with it, it is often far fewer than the amount of traffic being attracted by the existence of previous retail and office space. Furthermore, this paper provides a land-use conversion case study to support Cervero and Murakami (2010)'s findings that accessible retail increases traffic, although our findings are only complementary, since our data is limited to raw trip numbers and not VMT per capita. This net loss in trips per day is mainly driven by a handful of projects replacing high traffic commercial and office spaces; in other words, commercial demolition, not residential addition, is the primary driver of less traffic. This has important policy implications for the City; if it feels retaining commercial and office spaces is a priority, then it could incentivize mixed-use developments through tools like a retail impact fee or deferential voluntary developer agreements. However, even if Cupertino could mandate ground-level commercial spaces in new developments, there is no guarantee that it will be filled; analysis from San Francisco agrees that ground-level commercial spaces can't be forced (GrowSF, 2025). Instead, studies have indicated that housing proximate to existing commercial centers is correlated with higher sales, suggesting that Cupertino may be able to stimulate commercial activity by building new housing near clusters of commercial spaces (Banai & Antipova, 2016). Ultimately, though, Cupertino will continue to see commercial sites converted to housing as long as the City continues to protect the city's "suburban feel" by building new housing far away from existing single-family homes (Cupertino Planning Commission, 2026; City Of Cupertino, 2024). This strategy inevitably makes the only available options for upzoning to be on major corridors, which are also where the majority of Cupertino's commercial and office buildings are located.

While our findings demonstrate that, somewhat counterintuitively, new housing reduces traffic, this has been largely because this cycle's housing developments have been a slew of townhome projects replacing traffic-heavy commercial centers. This trend, however, is unlikely to continue. Due to several projects having lower than expected affordable housing units, the City is out of compliance with the No Net Loss Law (SB 166), which dictates that a city must always maintain enough proposed housing in their Housing Element to comply with their RHNA. Therefore, Cupertino is expected to significantly upzone new priority housing sites (Cupertino Planning Commission, 2026). As seen with projects like Hanover Apartments, high density projects usually generate more trips per day than existing commercial or office buildings. Thus, this paper's finding that new housing developments reduce traffic by replacing high-traffic commercial and office spaces may not hold if Cupertino's Housing Element is amended. If Cupertino would like to stay traffic-neutral (not creating more traffic than removing), it could encourage new medium-sized zoning (30-45 du/acre), which would match the level of traffic currently attracted by commercial and office spaces, or identify particularly high-traffic centers to redevelop.

Finally, while this paper does not endeavor to develop this result now, this current data set can be expanded with projects built in Cupertino from previous RHNA housing cycles to see if the findings of this paper hold true from past projects, or if the expected reduction in traffic is a one-off event. Furthermore, this methodology can be applied to housing developments in other cities in Silicon Valley. Expanding this data may give insight into if the commercial-displacement trend in Cupertino results from the city's specific land use composition, or if a broader trend of traffic decreases due to demolishing office and retail space exists in Silicon Valley.

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