

Multi-Family Residential Development (Rental) Parking Rate Summary

**Prepared for:
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1. Available Reports and Studies

Fehr & Peers reviewed several reports and studies that included parking demand rates for multi-family market rate, affordable, and senior residential developments in the Bay Area near rail stations (Caltrain, Bay Area Rapid Transit (BART), and light rail transit (LRT)). Industry standard parking generation sources and studies from Los Angeles and San Diego that include parking data for affordable housing were also reviewed. These reports and studies are:

- Santa Clara Valley Transportation Authority's (VTA's) A Parking Utilization Survey of Transit-Oriented Development Residential Properties in Santa Clara County
- Metropolitan Transportation Commission's (MTC's) Reforming Parking Policies to Support Smart Growth
- Transform's GreenTRIP Parking Database
- Robert Cervero, et al, University of California Transportation Center, UCTC Research Paper No. 882 Are TODs Over-Parked?
- Los Angeles Department of City Planning's Local Trip Generation Study
- City of San Diego's San Diego Affordable Housing Parking Study

A Parking Utilization Survey of Transit-Oriented Development Residential Properties in Santa Clara County

This research project was completed by Santa Clara Valley Transportation Authority (VTA) and San Jose State University in 2010. Twelve TOD residential properties near light rail and Caltrain stations in Santa Clara County were surveyed as part of the study. (A table from this report summarizing the results included in **Appendix A**.) The study does not specify whether the surveyed properties are market rate, affordable, or senior housing; it is likely that they are market rate properties. The parking supply rates ranged from 1.31 to 2.31 spaces per unit with an average of 1.68 spaces per unit, whereas the peak parking demand rates ranged from 0.84 to 1.54 spaces per unit with an average of 1.31 spaces per unit. The study found that the parking supply exceeded the parking demand at every site surveyed indicating that the code requirements for the city they are located in may be too high. This research project shows overall that parking demand at residences near a transit station is less than current zoning code requirements.

Reforming Parking Policies to Support Smart Growth

The Metropolitan Transportation Commission (MTC) developed this handbook to help city officials, politicians, and planners with the planning and implementation of parking policies and programs that will

support transit-oriented development (TOD). The document is intended to allow users to explore potential parking strategies that have been shown to work in different types of communities, identify best practices about policies and programs, and establish implementation guidelines to best gain the support of the public. It includes representative parking requirements for four types of land uses in five different location types. The rates for residential units in suburban centers/town centers range from 1.00 to 1.50 spaces per unit. Although the report does not differentiate among market rate, affordable, or senior housing, it is likely that these rates are for market rate properties.

TransForm's GreenTRIP Parking Database

TransForm's GreenTRIP Parking Database (<http://database.greentrip.org/>) is a compilation of data gathered at approximately 80 multi-family residential sites in the San Francisco Bay Area. It includes the building location, place type (e.g. transit town center or city center), type of residence (family, senior, diverse abilities, condominium), percent of units below market rate, number of units, number of parking spaces, parking utilization, parking supply rate, parking demand rate, and traffic reduction strategies in place. The database can provide insight into why parking use fluctuates based on location, transit access, and TDM strategies.

The GreenTRIP Parking Database allows data filtering for the study site parameters listed above. For the all-residential, senior housing study sites in Santa Clara County, parking demand rates range from 0.27 to 0.71 spaces per unit. For the all-residential, non-senior housing study sites that are 50 to 100% below market rate (affordable housing) in Santa Clara County, parking demand rates range from 0.96 to 1.34 spaces per unit.

Some other relevant example results are:

- 801 Alma in Palo Alto (0.3 miles from a Caltrain station) with 50 units, 60 parking spaces (1.20 spaces per unit), and a peak parking demand of 1.02 spaces per unit,
- Madera Apartments in Mountain View (0.1 miles from a Caltrain station) with 203 units, 279 parking spaces (1.37 spaces per unit), and a peak parking demand of 0.88 spaces per unit, and
- Arbor Terrace Apartments in Sunnyvale (0.2 miles from a VTA Rapid 522 stop) with 175 units, 359 parking spaces (2.05 spaces per unit), and a peak parking demand of 1.37 spaces per unit

Are TODs Over-Parked

Robert Cervero at the University of California Transportation Center (UCTC) led this study with the University of California, Berkeley. The study finds that parking demand rates for residential units at transit-oriented developments (TODs) in the San Francisco Bay Area ranged from 0.74 to 1.69 spaces per unit, averaging 1.20 spaces per unit. For all surveyed sites, the average parking supply was 1.59 spaces per dwelling unit. (A table from this report summarizing the results is included in **Appendix A**.) The study does not specify whether the surveyed properties are market rate, affordable, or senior housing; based on a review of the survey locations, most, if not all, are market rate properties. Varying development contexts explains the range in peak parking demand rates. Well-established sites with complementary land uses (such as office, restaurant, health club, hotel, and retail uses) had lower parking demand rates, while less dense and less diverse sites had higher parking demand rates.

Los Angeles Trip Generation Study

In 2015 Fehr & Peers conducted a parking study in conjunction with a trip generation study for the Los Angeles Department of City Planning. The study surveyed 42 affordable housing sites inside and outside Transit Priority Areas (TPAs) in Los Angeles (20 inside a TPA, 22 outside a TPA). The study compared the observed parking demand rates to the Los Angeles Municipal Code (LAMC) parking requirements. All observed parking demand rates were lower than LAMC requirements. (A table from this report summarizing the results is attached.) Some relevant parking rates and results are:

- Affordable family housing within a TPA (8 surveyed) have a parking supply rate of 1.15 spaces per unit and a peak parking demand rate of 0.85 spaces per unit
- Affordable family housing outside a TPA (6 surveyed) have a parking supply rate of 1.17 spaces per unit and a peak parking demand rate of 0.82 spaces per unit
- Affordable senior housing within a TPA (5 surveyed) have a parking supply rate of 0.60 spaces per unit and a peak parking demand rate of 0.44 spaces per unit
- Affordable senior housing outside a TPA (8 surveyed) have a parking supply rate of 0.70 spaces per unit and a peak parking demand rate of 0.48 spaces per unit

San Diego Affordable Housing Parking Study

In 2011 the City of San Diego conducted a parking study for affordable housing in various contexts throughout the city. The study documented parking rates for 21 housing developments to develop a citywide parking demand model. Variables considered includes walkability, access to transit, and housing type (e.g. single-family, senior, etc.). The parking study concluded that parking demand for affordable projects is about one half of typical rental units in San Diego, with almost half of all units surveyed having

no vehicle. Higher parking demand was generally associated with larger unit size and higher income for affordable housing developments. (A table from this report summarizing the results is attached.) In all projects surveyed, the amount of peak parking used was less than the amount supplied. Some relevant parking rates are:

- Villa Harvey Mandel Affordable Rentals located 1,500 feet from the 12th & Imperial Transit Center in San Diego with 90 units, 26 parking spaces (0.29 spaces per unit), and a peak parking demand of 0.28 spaces per unit
- Windwood Village Apartments in San Diego (not located near major transit service) with 92 units, 195 parking spaces (2.10 spaces per unit), and a peak parking demand of 1.56 spaces per unit
- Renaissance Senior Apartments in San Diego with 96 units, 103 parking spaces (1.07 spaces per unit), and a peak parking demand of 0.39 spaces per unit

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Appendix A:

Summary Tables from Previous Parking Studies

Summary Table from
"A Parking Utilization Survey of Transit-Oriented
Development Residential Properties in Santa Clara
County"



TABLE 6.1 Survey Data

Site	Housing		Parking			Parking Utilization Ratio	Parking Demand Rate	Parking Supply Rate	Over Supply (%)	Distance to Nearest Station
	Total Units	Occupied Units	Total Spaces	Utilized Spaces	Unused Spaces	(Utilized Spaces / Total Spaces)	(Utilized Spaces / Occupied Units)	(Total Spaces / Total Units)	(Supply - Demand) / Supply	(Feet)
1	294	288	438	365	73	0.83	1.27	1.49	15	2,500
2	306	294	568	439	129	0.77	1.49	1.86	19	3,060
4+	924	832	1,654	1,282	372	0.78	1.54	1.79	14	5,560
5	2,760	2,622	4,605	3,409	1,196	0.74	1.30	1.67	22	2,400
6	186	182	317	262	55	0.83	1.44	1.70	16	1,040
11*	93	93	122	99	23	0.81	1.06	1.31	19	1,060
13	210	200	373	271	102	0.73	1.36	1.78	24	1,330
14	104	100	240	148	92	0.62	1.48	2.31	36	1,500
16	115	113	186	132	54	0.71	1.17	1.62	28	130
18	176	174	338	241	97	0.71	1.38	1.92	28	690
20	250	242	387	287	100	0.74	1.19	1.55	23	730
21	383	383	523	320	203	0.61	0.84	1.37	39	3,930
Total	5,801	5,522	9,751	7,255	2,496					
Average	483	460	813	605	208	0.74	1.31	1.68	22	
Std. Dev.	751	709	1,258	936	324	0.07				

Notes

* Site 11 has an occupancy rate of 75% (it was the only survey site with an occupancy rate less than 90%).

The total number of housing units and parking spaces were adjusted for Site 11 to reflect an occupancy rate of 100%.

Total dwelling units: Calculation: 124 total units x 0.75 = 93

Total parking spaces: Calculation: 163 total parking spaces x 0.75 = 122

+ The actual distance is shorter than the 5,560 feet shown here.

See Section 5.5.2 and Figure 5.5 for more detail.

Summary Table from "Are TODs Over-Parked?"





Site	Supply per Unit	Peak Demand per Unit	Demand: % diff. from Supply	Demand: % diff. from ITE Rate
Walnut Creek: Pleasant Hill BART Station				
Diablo Oaks	1.05	0.74	-29.5%	-38.3%
Iron Horse Park	1.42	0.80	-43.7%	-33.3%
Archstone Walnut Creek	1.12	0.92	-17.9%	-23.3%
Park Regency	1.47	1.06	-27.9%	-11.7%
Archstone Walnut Creek Stat.	1.29	1.09	-15.5%	-9.2%
Villa Montanaro	2.05	1.23	-40.0%	2.5%
San Leandro: Bayfair BART Station				
The Hamlet	1.28	1.07	-16.4%	-10.8%
Union City BART Station				
Verandas	1.50	1.11	-26.0%	-7.5%
Parkside	1.46	1.13	-22.6%	-5.8%
Fremont BART Station				
Presidio	1.82	1.23	-32.4%	2.5%
Watermark Place	1.84	1.27	-31.0%	5.8%
Mission Peaks	1.75	1.35	-22.9%	12.5%
Archstone Fremont	1.98	1.45	-26.8%	20.8%
Sun Pointe Village	1.98	1.47	-25.8%	22.5%
Park Vista Apartments	1.97	1.48	-24.9%	23.3%
Alborada	1.78	1.69	-5.1%	40.8%
ALL 16 EAST BAY STATIONS				
Weighted Average	1.59	1.20	-24.7%	0.0%

Figure 2. East Bay Results: Peak Parking Generation Rates (Parked Vehicles per Dwelling Unit) Relative to Supply Levels and ITE Standard

Summary Table from
"Los Angeles Trip Generation Study"



TABLE 3
Summary Table of Parking Analysis for Affordable Housing Sites in Los Angeles
(By Transit Priority Area and Affordable Housing Type)
 Counts conducted May, June, and November 2016

TPA Area	Affordable Housing Type	Sample Size	Parking Demand Per Dwelling Unit	Parking Utilization
Inside	-	20	0.53	64%
Outside	-	22	0.56	63%
-	Family	14	0.84	72%
-	Seniors	13	0.46	71%
-	Special Needs	8	0.32	43%
-	Permanent Supportive	7	0.37	56%
Inside	Family	8	0.85	74%
Inside	Seniors	5	0.44	73%
Inside	Special Needs	4	0.20	34%
Inside	Permanent Supportive	3	0.29	64%
Outside	Family	6	0.82	70%
Outside	Seniors	8	0.48	69%
Outside	Special Needs	4	0.44	52%
Outside	Permanent Supportive	4	0.43	50%

LAMC for Comparison

Parking Requirement per Unit	
Apartments (LAMC 12.21A.4(a))	
<3 habitable rooms	1
3 habitable rooms	1.5
>3 habitable rooms	2
Projects with Affordable Housing Density Bonus - Option 1 (applies to all units, not just restricted units) (LAMC 12.22A.25(d)(1))	
0-1 bedroom	1
2-3 bedrooms	2
4 or more bedrooms	2.5
Projects with Affordable Housing Density Bonus - Option 2 (applies to restricted units only) (LAMC 12.22A.25(d)(2))	
restricted affordable units	1
restricted to low or very low income senior citizen or disabled	0.5
restricted affordable units in residential hotel	0.25

Summary Table from
"San Diego Affordable Housing Study"



Table 2. Comparison of Spaces Required Under Different Standards

A. Type	B. Project, # of units, special district (if any)	C. Spaces required under current code with no reductions for increases, or Centre City Planned District (if applicable)	D. Spaces required if reduction for “very low income” or “transit area adjustment” is applied	E. Spaces w/ all density bonus 143.0790 adjustments (transit area + very-low income)	F. Spaces required under Chapter 6 parking model, including visitor, staff and vacancy factor	G. Actual spaces supplied	H. Peak overnight parking occupancy (surveyed projects)
Studio	Via Harvey Mandel, 90 units, CCPD	22 ²	N/A	N/A	33	26	20
Family (large)	Beyer Courtyard, 60 units	153	136	108	114	118	19
	Windwood Village, 92 units	223	196	151	149	195	144
	Seabreeze Farms, 38 units	96	85	68	65	73	N/A
	Gateway Family, 42 units	108	96	76	62	92	N/A
Family (small)	Regency Center, 100 units	198	168	97	142	100	N/A
SRO	Island Inn, 197 units, CCPD	87 ³	N/A	N/A	43	86	52
	Studio 15, 275 units, CCPD	85 ⁴	N/A	N/A	61	55	N/A
Senior	Renaissance Seniors, 96 units	178	149	68	87	103	37
	San Diego Apartments, 16 units	28	23	10	13	4	N/A
	Horton House, 153	Conditional use	N/A	N/A	48	17	14

¹ The model assumed that the desired vacancy rate is 10%.

² Assuming classified as living unit, 50% AMI, or 0.2 spaces per unit; requirement for less or equal to 40% AMI is zero spaces.

³ Assuming classified as living unit, 50% AMI or 0.2 spaces per unit; requirement for less or equal to 40% AMI is zero spaces.

⁴ Assuming classified as living unit, 50% AMI or 0.2 spaces per unit; requirement for less or equal to 40% AMI is zero spaces.