

Tracy Parking Study

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**Prepared by:
Peter MacDonald
M.S. Urban Planning**

**400 Main Street, Ste. 210
Pleasanton, CA 94566**

**Phone: 925-462-0191
Email: pmacdonald@macdonaldlaw.net**

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Executive Summary

Tracy Parking Study

Planning commentators have long criticized cities for mandating too much parking for apartments, thereby raising the cost of housing, wasting urban space, and creating bad design. In fact, the Tracy General Plan Housing Element calls for an examination of parking requirements to improve affordability, allowing credit for on-street parking, and other parking adjustments to lower costs. This parking survey suggests that it would be possible to reduce parking requirements in Tracy somewhat and have no adverse impact on the quality of life of the people who reside in apartments.

Chapter 1 is a survey of 5 apartment complexes in Tracy, representing a cross-section of old and new apartments, with different unit mixes. The surveys were conducted in the late evening hours, after 9:30 p.m. on school nights, which is when apartment parking reaches its peak. The five apartment projects surveyed ranged between 1.1 and 1.31 cars parked per unit, with an average of 1.24 cars parked per unit (See Figure 1.1). Adjusted based on ITE data for an expected 8% increase in parking demand from 10 p.m. to midnight, our survey results are 1.34 (adj.) average vehicles per unit at the midnight peak.

Chapter 1 also compares the Tracy results with the Institute of Traffic Engineers, Parking Generation Manual (ITE Study), excerpted in Appendix A. The ITE Study results for suburban low to midrise apartments show slightly lower peak parking occupancy (1.23 vehicles per unit) than our Tracy parking survey (1.34(adj.) vehicles per unit). A higher parking ratio would be expected in a commuter community like Tracy with a high degree of dependence on automobile transportation.

Chapter 2 summarizes the parking requirements for 12 comparable Northern California jurisdictions (at Table 2.1). The various parking standards were then analyzed assuming a 100 unit apartment project with half one bedroom and half two bedroom units (at Figure 2.1). Tracy parking requirements are in the upper quartile of comparable cities, but not significantly higher than a lot of cities. For the typical 100 unit apartment complex, Tracy requires 195 parking spaces (1.95 spaces per unit). The median requirement for that same typical apartment

complex in the twelve jurisdictions is 175 spaces (1.75 spaces per unit). The average parking requirement for the 12 cities is 176.8 spaces (1.77 spaces per unit). The huge gap between measured peak parking demand (1.23 to 1.34 vehicles per unit) and municipal parking requirements (1.77 vehicles per unit) suggests there is a municipal tendency to overestimate parking demand that is widely shared, or perhaps, widely copied between cities.

Chapter 3 reviews some of the policy issues and literature regarding parking requirements and parking demand. Chapter 3 discusses the critique of high parking requirements, the appropriate safety margin (including the potential for a needlepoint peak), the trade-offs of improved design and increased density, the parking impact of additional bedrooms, the impact of garages, credit for on-street spaces, and other factors that would inform selection of an appropriate parking standard.

What this study does not include is a review of specific options for changes to the Tracy parking ordinance, which is most appropriately left for Tracy professional staff, and policy makers.

In summary, the parking survey suggests some reduction in Tracy's parking requirements would have no impact on the availability of parking to apartment residents, no adverse impact upon adjacent properties, and would free up land which would otherwise be wasted in never used parking spaces.

Chapter 1

Survey of Tracy Apartment Parking

This parking survey is the most important chapter in this study, because it provides the actual facts about parking demand in Tracy. What this parking survey reveals is that the current Tracy parking code requires parking supply substantially in excess of parking demand, even at peak demand hours, which for apartments are on weekday nights. Tracy requires 1.7 parking spaces for one bedroom units, and 2.2 parking spaces for two bedroom and larger units. The apartment projects that comply with current parking standards in Tracy have acres of empty parking lots night after night (Waterstone, Chesapeake Bay, and Tracy Park.)

The methodology was to count cars in apartment parking lots after 9:30 p.m., after residents are home for the evening, on the day before a school day. It is assumed that peak parking demand coincides with the night before a regular school day, which is typically also a regular work day. Based upon information from the ITE Study, parking measured at 10 p.m. is 8% below the actual peak which occurs from midnight to 4 p.m. in the morning. The five apartment projects surveyed had 876 units consisting of 200 one bedroom units, 650 two bedroom units, and 26 three bedroom units – so, the unit mix is heavily weighted toward two bedroom units.

Tracy Results

Table 1.1 and Figure 1.1 summarize the apartment survey results. The late evening average for surveyed projects was 1.24 vehicles parked per unit. Increased by 8% based on ITE Study data for time of day variations, the Tracy average is 1.34 (adj.) vehicles per unit at the midnight peak. The highest number of cars parked per unit, if we assume a 8% increase between 10 p.m. and midnight, would be Chesapeake Bay at 1.41 (adj.) vehicles parked per unit. (Overnight increase discussed further under Waterstone below) Again assuming an 8% parking increase from 10 p.m. to midnight, the apartments surveyed had

Figure 1.1 Tracy Apartment Parking Survey

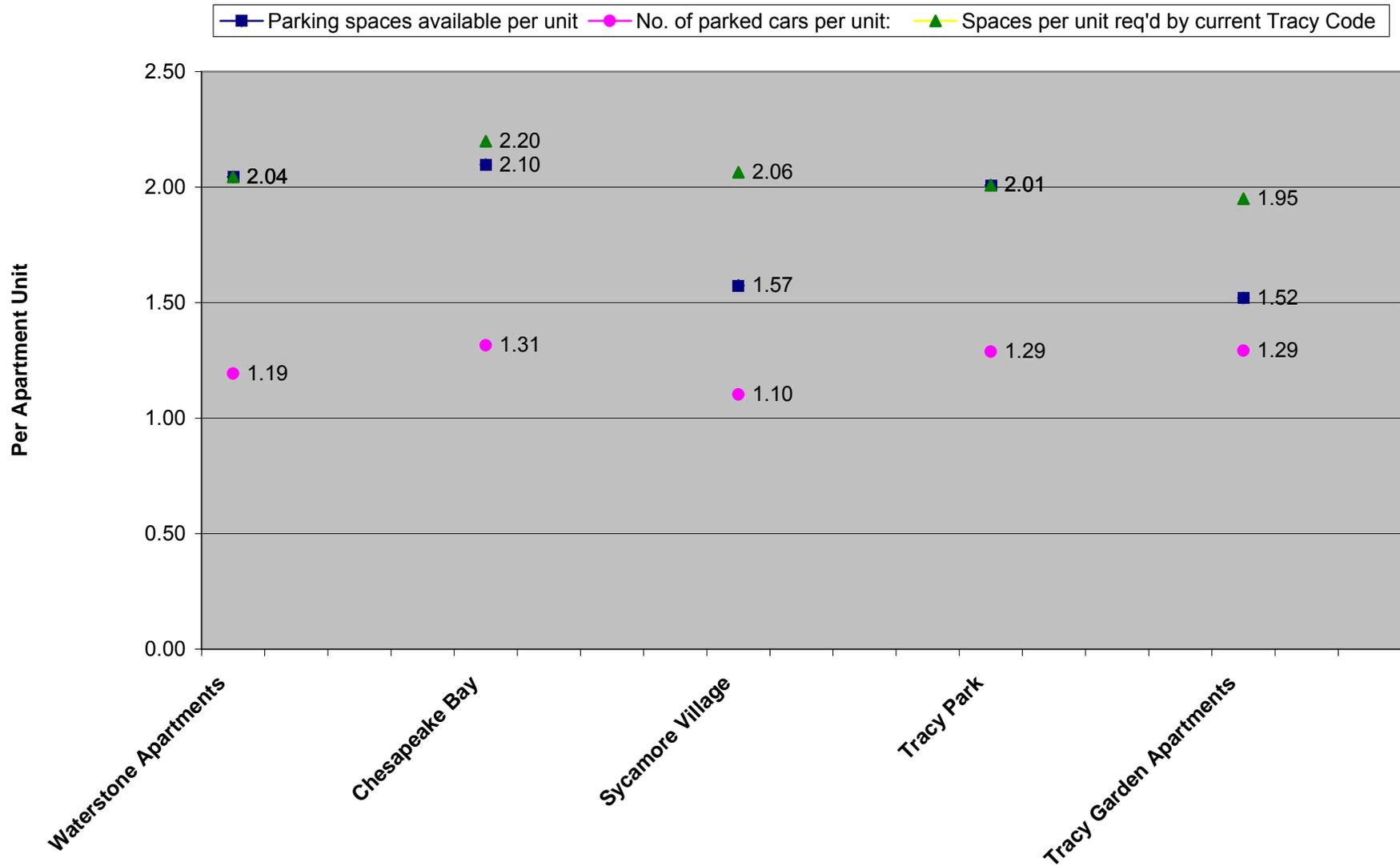


Table 1.1. Tracy Apartment Parking Survey

Late weeknight evening and overnight is considered the peak parking time for apartment projects.

	Waterstone Apartments 9:45 p.m. Monday, March 19, 2012	Waterstone Apartments 5:00 a.m. Thursday, March 8, 2012	Chesapeake Bay 10:15 p.m. Monday, May 28, 2012	Sycamore Village 9:30 p.m. Thursday, May 10, 2012	Tracy Park 9:30 p.m. Monday, May 28, 2012	Tracy Garden Apartments 10:45 p.m. Thursday May 24, 2012
A	Number of Apartment Units:	156	216	324	132	48
B	Number of Parking Spaces:	319 parking spaces	453 parking spaces	510 parking spaces	265 parking spaces	73 parking spaces
C	Occupied Parking Spaces	186 parked cars	284 parked cars	357 parked cars*	170 parked cars*	62 parked cars*
D	Vacant Parking Spaces	133 vacant spaces	169 vacant spaces	153 vacant spaces	95 vacant spaces	11 vacant spaces
E	Percentage of spaces occupied ,=C / B	58.31%	62.69%	70.00%	64.15%	84.93%
F	Parking spaces available per unit ,=B / A	2.04 spaces available	2.10 spaces available	1.57 spaces available	2.01 spaces available	1.52 spaces available
G	No. of parked cars per unit: ,=C / A	1.19 parked per unit	1.31 parked per unit	1.10 parked per unit	1.29 parked per unit	1.29 parked per unit
H	No. of spaces req'd by current Tracy Code	319 current Code	475 current Code	669 current Code	265 current Code	94 current Code
I	Spaces per unit req'd by current Tracy Code = H / A	2.04 current Code	2.20 current Code	2.06 current Code	2.01 current Code	1.95 current Code

Notes:

Unit Breakdown: -108 two b.r., and 48 one b.r. same project -13 three b.r., 203 two b.r. -13 three b.r., 223 two b.r., 88 one b.r. 24 one b.r., 24 two b.r.

Other notes: 5 a.m. is assumed to be the peak parking time. Parking shared with adjacent comm'l. Second count at 10 p.m. on May 24, 2012 came in lower at 338 parked cars. Adjacent street parking being used. Second count at 10 p.m. on May 28 came in lower at 58 parked cars.

Occupancy Rate: 95% unit occupancy same 97% unit occupancy 93% unit occupancy 98% unit occupancy 98% unit occupancy

Address: 1951 West Middlefield Drive, Tracy CA 95377 same 2943 W Lowell Ave, Tracy CA 95377 400 W. Central Ave. Tracy, CA 95376 2800 N. Tracy Blvd., Tracy, CA 95376 2926 N. Tracy Blvd, Tracy, CA 95376

Cumulative totals surveyed:
 876 apartment units consisting of 200 1 b.r., 650 2 b.r., and 26 3 b.r. units.
 1620 available parking spaces
 1822 current parking requirements
 1059 occupied spaces in late evening. Assuming 8% overnight increase in parking, then 1144 spaces occupied at midnight.
 2.08 spaces required per unit under current Tracy parking code.
 1.24 spaces occupied per unit
 1.34 (adj.) spaces occupied per unit (assumes increase by 8% from 10 p.m. to midnight)

peak parking occupancy equal to only about 63% of the Tracy parking code requirements (2.08 spaces per unit for the mix of units surveyed).

Waterstone

We initially surveyed Waterstone, the most recent project built in 2006, as representing the three story design which is characteristic of the projects likely to be built within the Tracy market, and the style most favored by institutional investors in residential real estate. We were initially surprised by the number of vacant parking spots in the late evening.

As a check on how many people come in later than the survey hours (typically 9:30 p.m. to 11:00 p.m.), we did a 5 a.m. Thursday morning count at Waterstone. That count showed an almost 4% higher occupancy rate in the early morning. This result corresponds exactly with the ITE Study data which showed an expected increase of 4% between 10 p.m. and 5 a.m..

Chesapeake Bay

The highest count we got was 1.31 occupied spaces per unit at Chesapeake Bay, an all two bedroom plus project. Even with an assumed 8% increase in overnight parking occupancy, the parking count would only be 1.41 spaces per unit. At 1.41 spaces per unit, parking occupancy at Chesapeake Bay would still be far below the City requirements of 2.2 parking spaces per unit at Chesapeake Bay.

Chesapeake Bay is a rare situation, with zero one bedroom units, 203 two bedroom units, and 13 three bedroom units. Nevertheless, Chesapeake Bay in the evening had only 1/10 of a vehicle per unit higher parking occupancy than for projects with a mix of one and two bedroom units. Notably, the Tracy parking code increases the parking requirement by 0.5 spaces per unit for that second bedroom (issue discussed below and in Chapter 3).

Tracy Park

One project, Tracy Park, represents a unique situation, because it shares parking with adjacent commercial properties. This practice is encouraged by Housing Element policies. The commercial is primarily offices. By 9:30 in the evening, parking on the office side of the shared parking lane was down to about 6 cars. It should be noted that the parking lane includes some 26 spaces officially designated as shared commercial- residential spaces. Other spaces in the shared parking lane are officially exclusively commercial, but at the late evening of our survey had some apparently residential cars parked in them. The shared spaces plus exclusively residential spaces meet current Tracy parking requirements. But, because a number of those “commercial” spaces were obviously being used by apartment tenants, we included those parked cars in our

count. So the actual vacancy rate of residentially designated spaces would have been slightly higher. Of course, at 5 p.m. in the afternoon, the shared office-apartment parking may be more occupied, but that is not relevant to establishing the general parking requirement for apartments.

Sycamore Village

Sycamore Village had the lowest number of cars parked at only 1.1 occupied spaces per unit. This is a project built during the 1980's when the parking standard was lower (i.e. there are only 1.57 parking spaces per unit). Nevertheless, there were ample vacant spaces at night. Because the cars parked per unit is lower (1.1), we wondered if there is some impact from an available bus route, relative proximity to downtown, or regulatory limits from the landlord. The remainder of surveyed projects were consistent at 1.2 to 1.3 cars parked per unit in late evening.

Tracy Garden Apartments

Finally, the Tracy Garden Apartments is an older project built around 1970, and had only 1.52 spaces available per unit. But, there were still ample spaces available in late evening. The Manager mentioned that there is available street parking, and it looked like the street parking was being used by 3 or 4 cars, enough to loosen up the on-site parking.

Comparison with ITE Parking Generation Manual

The Tracy parking survey surprised us with the small number of cars parked per unit. But, in reviewing the Institute of Traffic Engineers, Parking Generation Manual, 4th Edition 2010 (ITE Study at Appendix A), Tracy apartment parking counts (after 8% adjustment) were slightly higher than the ITE surveyed suburban apartments (1.23 vehicles per unit v. 1.34 (adj) vehicles per unit). This is not surprising given the automobile dependency of most Tracy apartment locations, and the higher proportion of commuters who need a car to get to jobs outside of the City of Tracy.

In summary, the ITE results were:

Low/Midrise Apartment: Weekday Suburban Peak Period:	1.23 veh/unit
Low/Midrise Apartment: Weekday Urban Peak Period:	1.20 veh/unit
Low/Midrise Apartment: Saturday Urban (overnight)	1.03 veh/unit

One issue raised by the ITE apartment parking survey, but not explained, is the potential for a needlepoint peak. For the range of results on Low/Midrise Suburban Weekday (overnight) peak, involving 21 projects surveyed, ITE shows a range of 0.59 to 1.94 vehicles per dwelling unit. At 1.94 vehicles per dwelling

unit, at least one project could exceed most standard municipal parking codes requirements. But, ITE does not explain the one high result. It may have been a true outlier, related to unique circumstances of that particular location, because the 95% confidence interval was shown as 1.10 to 1.37 vehicles per unit – not pulled up on the high side by that one data point. Chapter 3 has further discussion regarding any potential needlepoint peak.

For the Tracy apartment parking survey, we did drive through the several projects on a weekend afternoon to see if parking occupancy was greater, but parking occupancy was somewhat lower. Consistent with our observations, the ITE Study Saturday survey also did not reveal a weekend peak comparable to the weekday night peak, dropping from 1.23 down to 1.03 vehicles parked per unit.

The ITE Study at p.51 does include a 24 hour survey, with percentage of the peak occupancy shown for each hour. The ITE Study finds the peak parking period to be from 12 a.m. to 4 a.m., with parking demand at 10 p.m. at 92% of the peak, and parking demand at 5 a.m. at 96% of the peak. The ITE difference between 10 p.m. and 5 a.m. comes out at 4%, which equals the difference our Waterstone 5 a.m. count demonstrated for those hours. Not surprisingly, during the day and early evening, between 7 a.m. and 9 p.m. the parking occupancy falls to more than 20% below the overnight peak.

The ITE Study (at p. 50) has some data on the parking increase between entire projects that average 1.5 bedrooms or less, versus entire projects that average over 2 bedrooms each. For projects averaging less than 1.5 bedrooms, parking was 92% of the overall average. For the projects averaging over 2 bedrooms, parking was 13% higher than the average. So, the difference in parking demand between apartment projects averaging less than 1.5 bedrooms and those averaging over 2.0 bedrooms is about 21% - a substantial increase. (Issue discussed further in Chapter 3).

Overall, nothing in the ITE parking survey suggests the Tracy apartment parking survey missed some important factor. Tracy parking demand is a little higher than national parking patterns for apartments (0.11 vehicles per unit higher).

Chapter 2

Comparison with Apartment Parking Standards in Other Cities

We compared Tracy's parking ordinance and requirements with those of 11 other Northern California cities (Table 2.1). For the cities studied, we applied their parking standards to a typical apartment project consisting of 100 apartments, with 50 one bedroom units, and 50 two bedroom units. The results of that comparison are shown graphically in Figure 1.1. The parking code excerpts from those cities are at Appendix B.

Summary of Results

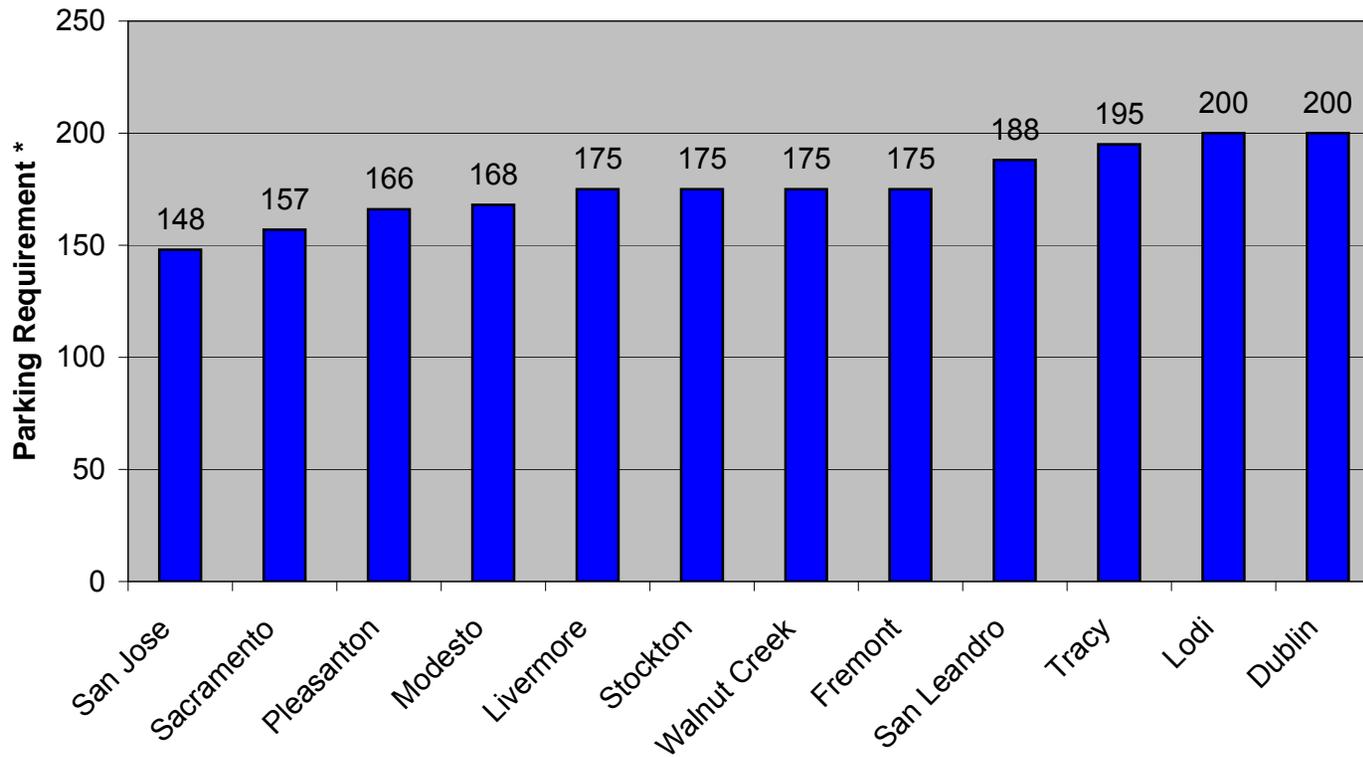
The required parking for that typical apartment project range from 1.48 spaces per unit in San Jose, up to 2.00 spaces per unit in Dublin and Lodi. Among the 12 comparable cities, Tracy's parking requirements are third highest, at 1.95 spaces per unit just below Dublin and Lodi, and just above San Leandro at 1.88 spaces per unit. The median parking requirement for the subject cities is 1.75 spaces per unit. The average parking requirement is 1.77 spaces per unit, and the most common parking requirement, shared by four cities, is 1.75 spaces per unit.

While the parking requirement ranged from 1.48 to 2.00 spaces per unit, the formulas for calculating parking requirements varied substantially between cities.

Per Unit vs. Per Bedroom Standards.

In effect, three of the 12 cities have a "per unit" standard, rather than a standard that varies by the number of bedrooms. For the remainder of cities that do increase the parking requirement per bedroom, the steepest increased parking requirement is typically between one and two bedroom units. For those cities, the two bedroom requirement is typically at least 0.5 spaces higher than for one bedroom units. Tracy requires 0.5 spaces more for a two bedroom unit than for a one bedroom unit. As discussed further in Chapter 3, the ITE Study does suggest that the second bedroom might add a marginal demand for about 0.35 to 0.45 additional parking spaces.

Figure 2.1 Apartment Parking Standards by Jurisdiction



*** Parking Requirement for a 100 Unit Apartment with 50 1-bedroom Units and 50 2-bedroom Units**

Table 2.1. Apartment Parking Standards by Jurisdiction

	Jurisdiction	Studio	1 BR	2 BR	3 BR	guest	Ratio/Unit	Parking req'mt:	
								100 unit apartment;	
								with 50 1 br units	
								and 50 2 br units	
1	San Jose	1.25/unit	1.25/unit	1.7/unit	2/unit			148	1.48 /un.
2	Sacramento	1.5/unit	1.5/unit	1.5/unit	1.5/unit	0.067/unit		157	1.57/un.
3	Pleasanton	1.5/unit	1.5/unit	1.5/unit	2/unit	0.143/unit	2 ea. For 1st 4 units	166	1.66/un.
4	Modesto	1/unit					2.0 1st 36 un, then 1.5 per un.	168	1.68/un.
5	Livermore	1/unit	1/unit	2/unit	2/unit	0.25/unit		175	1.75/un.
6	Stockton					0.25/unit	1.5/unit	175	1.75/un.
7	Walnut Creek	1.25/unit	1.5/unit	2/unit	2.25/unit			175	1.75/un.
8	Fremont	1/unit	1/unit	1.5/unit	1.5/unit	0.5/unit		175	1.75/un.
9	San Leandro	1.5/unit	1.5/unit	2.25/unit	2.5/unit			188	1.88/un.
10	Tracy	1.5/unit	1.5/unit	2/unit	2/unit	0.2/unit		195	1.95/un.
11	Lodi						2/unit	200	2.0/un.
12	Dublin	2/unit	2/unit	2/unit	2/unit			200	2.0/un.

Notes:

- 1** San Jose: None covered; Bicycle spaces req'd; higher standard for garaged spaces.
- 2** Sacramento: None covered.
- 3** Pleasanton: 1 covered space per unit; 2 spaces each for first 4 units.
- 4** Modesto: None covered; higher standard for garaged spaces; 2 spaces each for first 36 units; tandem, RV provisions.
- 5** Livermore: None covered.
- 6** Stockton: None covered.
- 7** Walnut Creek: 1 covered space per unit.
- 8** Fremont: 1 covered space per unit; possible credit for available on-street parking.
- 9** San Leandro: 2 covered for 2 br and +; a .25 guest space req'mt is included in per bedroom standard- not additional.
- 10** **Tracy:** 1 covered space per unit.
- 11** Lodi: None covered.
- 12** Dublin: 1 covered space per unit.

Peter MacDonald
M.S. Urban Planning

Covered Spaces.

Only half of the twelve studied cities require covered spaces. Some cities like Dublin say “covered or garaged spaces”. Typically, the city requires only one covered space per unit, but San Leandro requires 2 covered spaces for 2 bedroom and larger units, and Dublin does the same for two bedroom condominium units.

The Garage Problem

Surprisingly, the only city with a notable problem relating their parking was Dublin, with the highest apartment parking requirement of all cities studied, at 2.00 spaces per apartment unit. In fact, Dublin has even higher parking requirements for condominiums, requiring two “covered or garaged” spaces for condominiums, but only one “covered or garaged” space for apartment units. Dublin then requires an additional 0.5 space of open parking per condo.

The parking problem arose in a complex of townhouse- condominium projects, in Eastern Dublin, built recently (after 2000) under the existing parking standards. In touring that area, every open parking spot seems to be taken, and there are overflow cars parked on nearby vacant fields. According to a consultant to the master developer, the builder built inside, garaged parking spaces for most of the condominiums constructed. Some of the inside spaces are tandem spaces. Now, it appears, a number of the occupants have converted their garaged spaces into storage, and those occupants are vying for the open parking spots. It was pointed out the on-street spaces in many cases are more convenient to the unit than the garaged spaces at a lower level.

The issue of garaged spaces is addressed in only two of the ordinances studied, San Jose and Modesto. San Jose has higher parking requirements for projects with garaged spaces. For example, for a two bedroom unit with one garaged space, San Jose requires 0.3 additional open parking spaces. For a two bedroom unit with two garaged spaces, San Jose requires 0.8 additional open parking spaces. Modesto requires an additional 0.5 open parking spaces for each garaged space.

The San Jose Approach

The San Jose parking ordinance was substantially re-written in the year 2000. Though simple and understandable, the San Jose parking ordinance is also nuanced. The parking ordinance revision was apparently the result, at least in part, of a larger public-private collaboration, led by the Silicon Valley Manufacturers Association. In the late 1990's, the San Jose community was concerned because having the highest housing costs in the country was making

it increasingly difficult to retain quality employees and firms in Silicon Valley. The San Jose metro area economy was losing competitiveness to new high tech centers, both in and out of United States. The result was a systematic effort by the City of San Jose to produce high density development, when possible coupled with transit, so market rate affordable housing would be more available to potential employees. From 1996 to 2000, multi-family units jumped from 47% to 70% of total housing production, and has stayed above that percentage almost every year since. Beyond that, San Jose has an even lower parking standard for “pedestrian oriented zoning districts”, like downtown and transit oriented (TOD) developments.

By addressing the special problem of garaged spaces explicitly, San Jose was apparently able to lower its base parking standard to a level much closer to the measured demand for apartment parking. I.e. Compared to other cities, the San Jose standard of 1.48 spaces per unit is much closer to the ITE measured average peak period parking demand for low to midrise apartment projects (1.20 to 1.23 spaces per unit in ITE Study).

The survey of comparable cities shows a lot of similarity in total parking requirements between Northern California cities. But, with the exception of San Jose, the municipal parking requirements are typically about half a space per unit in excess of the peak parking demand that can be expected from new apartment projects.

Chapter 3

Policy Considerations

The Tracy parking survey shows parking at only 1.34 (adj.) vehicles per unit at midnight peak. We gained some confidence in the Tracy results when the ITE Study came up with similar, but lower, peak parking results (1.23 vehicles per unit). Both survey results demonstrate parking demand far below the parking requirements for Tracy and comparable cities.

Apartment Demographics

However, the parking survey results are no longer surprising when we look at the demographics of renters. The National Multi Housing Council collated U.S. Population Survey and other results from the U.S. Government studies, included here as Appendix C. Appendix C at page 4 shows that 49% of rental households have only one person. Also at page 4, 70% of rental households consist of a single male, a single female, or a single parent. The entire balance of parking demand has to come from the remaining half of the units, so 1.23 to 1.34 vehicles parked per unit allows for a high proportion of two vehicle ownership among two adult households (especially when we factor in people away traveling with their vehicles and some no vehicle households). We could find no authority suggesting that the long run trend toward smaller household size is about to change.

Parking Literature

A number of critics, led by Donald Shoup, a UCLA urban planning professor, have written at length about how free parking distorts urban design and raises costs (e.g. *The High Cost of Free Parking*, Updated Edition, 2011). Dr. Shoup argues from an almost libertarian point of view, suggesting that we should “let prices do the planning”. Another group of critics, centered on the Conference for the New Urbanism, and personified by Andres Duany and his wife Elizabeth

Plater-Zybeck argue for walkable high density cities built around public transit to encourage a lively street life. These critics follow in the footsteps of the great Jane Jacobs, who wrote *The Death and Life of Great American Cities* in 1961, which changed the perspective of urban planning away from providing convenience for cars to providing livable neighborhoods. Both lines of criticism have much validity, but are generally directed at central city settings.

Framework for Analysis

This parking study needs to address the setting of the freestanding suburban apartment complex, and the planning considerations that could help select the most appropriate parking standards. The widespread adoption of municipal off-street parking requirements following World War II addressed the problem of externalities: By requiring property owners to provide adequate on-site parking for its customers or residents, the city avoids the nuisance of all those vehicle owners taking up limited public parking, and saves the vehicle owner from the inconvenience of walking great distances to their destination.

For this analysis, we start by accepting the need to handle all parking needs of apartment residents on-site. That requires understanding the actual parking demand that can be expected, including what types of peaks might occur, and how often. Given that information, there remains a key policy question about what “safety margin” should be required to deal with unexpected peaks and changing demographics.

There are several additional urban planning considerations that should influence selection of the safety margin for municipal parking requirements. First there is cost, because space wasted on un-needed parking increases the cost of housing. The Tracy General Plan Housing Element at Program 4.3 calls for the City to “*facilitate affordable housing development by reducing development standards such as parking requirements, setbacks, and other requirements.*” Second, un-needed parking adversely affects the design and amenities in projects. The alternative designs for the MacDonald Apartments provide a case study of how design can improve with reduced parking requirements (discussion below). The public costs of an unrealistically high safety margin for parking are more expensive housing, less desirable design, and fewer amenities. There is no public benefit from unrealistically high parking standards.

Needlepoint Peaks?

The Tracy Parking Survey, and the ITE Study, both suggest that weeknight peak parking demand for apartments averages about 1.20 to 1.34 vehicles per apartment unit. But, what about annual or monthly peaks? The ITE Study gives the range of peak parking demand for the surveyed projects. According to ITE, for suburban apartments there was one project with 1.94 vehicles per unit, and for urban apartments there was one project with 2.50 vehicles per unit. The

urban project can probably be ignored because urban parking garages are frequently managed to lease out any predictably unused parking. The suburban project at 1.94 vehicles per unit is more troubling, but as one of 21 projects surveyed, it apparently had no companion projects at the high end or there would have been more impact on the average.

Apartment parking is unlike retail parking in which there are peaks far above the daily pattern of usage, at Christmas, special events, and certain times of the week or times of the day. By its nature, apartment occupancy peaks each night, especially on weeknights before school days, as confirmed by our surveys and the ITE survey. At other times when parking demand might increase for some residents, as with Christmas parties, or summer visitors, there will be a reciprocal contingent of the apartment residents going to parties elsewhere or traveling elsewhere. The typical weekday is apparently quite close to the annual peak. If there is a peak time that we have missed, anyone with special knowledge is encouraged to share that information with us.

Per Bedroom or Per Unit Requirements

In Chapter 1, we reported the ITE Study results showing that parking demand is 21% higher for projects averaging 2.0 bedrooms or more than for projects averaging 1.5 bedrooms or less. But, we don't know exactly what the average number of bedrooms was for those two groups to derive a gradient for the marginal impact on parking demand of going from a one bedroom to a two bedroom apartment. If we assume the two groups of projects have an average difference of 0.7 bedrooms (e.g. 1.4 bedrooms average for the smaller sized projects and 2.1 bedrooms average for the larger sized projects), then each marginal bedroom would generate demand for 0.35 additional parking spaces. If we assume (unrealistically) that the two groups of projects have an average difference of exactly 0.5 bedrooms (i.e. 1.5 bedrooms average for the smaller sized projects, and 2.0 bedrooms for the larger sized projects), then each marginal bedroom would generate demand for 0.50 additional parking spaces. That is the Tracy standard. Either way, it is obvious that a per bedroom standard does capture a real factor causing increased parking demand.

Another clue is the San Jose ordinance, which appears to be based upon more precise study than other cities, certainly with respect to total parking demand. There the parking requirement for studio and one bedroom units is 1.25 spaces, but for two bedroom units it jumps to 1.70 spaces – an increase of 0.45 spaces for the second bedroom. So, the range of 0.35 to .045 additional spaces would appear to capture the marginal impact of a second bedroom. The Tracy standard of 0.5 additional spaces for two bedroom and larger units probably also captures the further parking demand resulting from the occasional three bedroom unit.

On Street Spaces

The Tracy General Plan Housing Element at Program 4.3 provides: “Depending on the location of proposed development, consider shared parking opportunities (between nonresidential and residential uses) and the ability of street parking to fulfill a portion of a project’s parking demand” Several of the comparable cities including Fremont and Dublin have such a policy. In the survey of Tracy Garden Apartments (built under a lower parking standard), the Manager mentioned that tenants do use on-street parking near their units, thereby lowering demand for on-site spaces.

Whether or not parking credit is given, on street parking adjacent to apartments has several worthy impacts of the kind that Jane Jacobs would approve. First, on street spaces are “anytime” spaces, available not just to guests and residents of the apartment, but also to provide overflow parking for events up and down the neighborhood street. Second, on-street parking provides a protective shield to the adjacent sidewalk, making use of that sidewalk by kids, bikes, trikes, and people out walking, more comfortable and physically safe. When combined with buildings facing the street, the eyes on the street from apartments above, and people activity below, on street spaces make the sidewalk safer from crime and encourage increased use of the sidewalk. Third, on any residential street, the presence of on-street parking slows down through traffic to residential speeds, protecting the safety of pedestrians and vehicles further up and down the adjacent street.

A middle ground from a policy perspective might be to allow on-street spaces to count toward the guest parking requirements. In Tracy that would put a limit of 0.2 spaces per unit on the use of adjacent on-street spaces. Another policy option would be to limit credit to only those on street spaces immediately adjacent to the project itself.

Garage and Tandem Spaces

The lesson from the Dublin experience with garages and tandem spaces described in Chapter 2 is that additional parking should be required for garages and tandem spaces, such as the standards set in the San Jose parking ordinance.

Case Study

The impact of parking requirements on apartment design and cost can be best understood by review of alternative site plans considered in designing the MacDonald Apartments, at Appendix D. Both Alt 2 and Alt 3 have 60 units consisting of 3 three story buildings (two 24 plexes, and one 12 plex).

The plan labeled Alt 2 has the 12 plex forward facing the street. Alt 2 (building front plan) is an earlier version of the plan which has recently been submitted to the City for approval. In contrast, Alt 3 (parking front plan) has the 12 plex set back on the lot with a parking bay along the frontage. Alt 3 was designed to overcome the potential shortage of required parking, and will be revived if necessary.

It should be noted that increasing density by going above three stories with structured parking or using underground parking is not economically feasible in Tracy. The cost impact of structured parking is an increase of approximately \$75 per rentable square foot.

Comparing Alt. 2 and Alt 3, the Alt. 3 parking yield from a geometric parking lot adjacent to the public street is 9 additional parking spaces. The Alt 3 plan lacks the building wall on the street that Alt 2 provides, and has somewhat less open space. But Alt 3 meets the requirements of the Tracy parking and design codes (if on street parking is given credit).

If the 8 new on-street spaces are given parking credit, then Alt 3 exceeds the City parking requirement of 117 spaces by 2 spaces (at 1.98 spaces per unit). In contrast, even if the 8 on-street spaces are given parking credit, the Alt 2 plan (at only 1.83 spaces per unit) still falls 7 spaces short of the City parking requirements. Both plans substantially exceed the measured peak parking demand in Tracy of 1.34 (adj.) spaces per unit. Even at 1.83 spaces per unit, the Alt 2 plan is parked at almost half a space higher per unit than projected parking demand (i.e. 0.49 spaces per unit excess parking which is a 37% safety margin).

Now if it becomes necessary to meet the current parking requirements, there are two ways to adjust the project proposal. First, Alt 2 can be modified to eliminate the third floor from the 12 plex, eliminating 4 units and the need for 7.8 spaces. Second, if on-street spaces are not given credit, elimination of the 12 plex third floor and a fall back to the Alt 3 plan would provide 9 additional spaces, for a 17 space swing, causing the project to exceed current parking code by 2 spaces.

Safety Margin

Finally, the real issue is what level of safety margin (excess parking) should the City deem sufficient. To provide residents a choice of readily available parking spaces, there needs to be more parking than peak weekday evening parking demand. That buffer can also help deal with the needlepoint peak that we considered earlier, should one ever occur. To analyze, we compare the results of the Tracy parking survey (1.34 (adj.) vehicles per unit) to the Tracy parking code requirement for the combination of units included in the survey (2.08 spaces per unit including the 0.2 required guest spaces).

The following are the safety margins that result for alternative parking standards expressed as per unit parking standards: (spaces per unit standard / 1.34)

2.08 spaces per unit	= Safety margin of 55.2% -current requirement
1.90 spaces per unit	= Safety margin of 41.8%
1.80 spaces per unit	= Safety margin of 34.3%
1.70 spaces per unit	= Safety margin of 26.9%
1.60 spaces per unit	= Safety margin of 19.4 %
1.50 spaces per unit	= Safety margin of 11.9%

Conclusion

There is nothing in the planning literature or the two surveys to suggest that apartment projects are subject to needlepoint peaks in parking demand which require an extraordinary safety margin. Thus, the safety margin needed to provide ample parking choice to residents should suffice to handle any peak event that might occur. The public costs of having an excessive safety margin is higher housing costs, fewer amenities, and less desirable project designs. We have provided accurate parking data, but the appropriate size of the safety margin is a policy decision for public officials of the City of Tracy.

List of Appendices

Appendix A. Excerpts from Parking Generation, 4th Edition, ITE 2010

Appendix B. Excerpts from Parking Codes of Comparable Cities

Appendix C. Excerpt on Apartment Demographics

Appendix D. Case Study: Alternative Designs for MacDonald Apartments

Appendix E. Site plans for Tracy Apartments Surveyed (provided separately)

Appendix A.
Excerpts from Parking Generation, 4th Edition,
ITE 2010

Parking Generation, 4th Edition

An Informational Report of the
Institute of Transportation Engineers

The Institute of Transportation Engineers (ITE) is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs. ITE facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development and management for any mode of ground transportation. Through its products and services, ITE promotes professional development of its members, supports and encourages education, stimulates research, develops public awareness programs and serves as a conduit for the exchange of professional information.

Founded in 1930, ITE is a community of transportation professionals including, but not limited to transportation engineers, transportation planners, consultants, educators and researchers. Through meetings, seminars, publications and a network of 17,000 members, working in more than 90 countries, ITE is your source for expertise, knowledge and ideas.

***Parking Generation* is an informational report of the Institute of Transportation Engineers. The information has been obtained from the research and experiences of transportation engineering and planning professionals. ITE informational reports are prepared for informational purposes only and do not include Institute recommendations on which is the best course of action or the preferred application of the data.**



Institute of Transportation Engineers

1627 Eye Street, NW, Suite 600

Washington, DC 20006 USA

Telephone: 1 202-785-0060

Fax: 1 202-785-0609

ITE on the Web: www.ite.org

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Land Use: 221

Low/Mid-Rise Apartment

Description

Low/mid-rise apartments are rental dwelling units located within the same building with at least three other dwelling units: for example, quadraplexes and all types of apartment buildings. The study sites in this land use have one, two, three, or four levels. High-rise apartment (Land Use 222) is a related use.

Database Description

The database consisted of a mix of suburban and urban sites. Parking demand rates at the suburban sites differed from those at urban sites and, therefore, the data were analyzed separately.

- Average parking supply ratio: 1.4 parking spaces per dwelling unit (68 study sites). This ratio was the same at both the suburban and urban sites.
- Suburban site data: average size of the dwelling units at suburban study sites was 1.7 bedrooms, and the average parking supply ratio was 0.9 parking spaces per bedroom (three study sites).
- Urban site data: average size of the dwelling units was 1.9 bedrooms with an average parking supply ratio of 1.0 space per bedroom (11 study sites).

Saturday parking demand data were only provided at two suburban sites. One site with 1,236 dwelling units had a parking demand ratio of 1.33 vehicles per dwelling unit based on a single hourly count between 10:00 and 11:00 p.m. The other site with 55 dwelling units had a parking demand ratio of 0.92 vehicles per dwelling unit based on counts between the hours of 12:00 and 5:00 a.m.

Sunday parking demand data were only provided at two urban sites. One site with 15 dwelling units was counted during consecutive hours between 1:00 p.m. and 5:00 a.m. The peak parking demand ratio at this site was 1.00 vehicle per dwelling unit. The peak parking demand occurred between 12:00 and 5:00 a.m. The other site with 438 dwelling units had a parking demand ratio of 1.10 vehicles per dwelling unit based on a single hourly count between 11:00 p.m. and 12:00 a.m.

Four of the urban sites were identified as affordable housing.

Several of the suburban study sites provided data regarding the number of bedrooms in the apartment complex. Although these data represented only a subset of the complete database for this land use, they demonstrated a correlation between number of bedrooms and peak parking demand. Study sites with an average of less than 1.5 bedrooms per dwelling unit in the apartment complex reported peak parking demand at 92 percent of the average peak parking demand for all study sites with bedroom data. Study sites with less than 2.0 but greater than or equal to 1.5 bedrooms per dwelling unit reported peak parking demand at 98 percent of the average. Study sites with an average of 2.0 or greater bedrooms per dwelling unit reported peak parking demand at 13 percent greater than the average.

For the urban study sites, the parking demand data consisted of single or discontinuous hourly counts and therefore a time-of-day distribution was not produced. The following table presents a time-of-day distribution of parking demand at the suburban study sites.

Land Use: 221 Low/Mid-Rise Apartment

<i>Based on Vehicles per Dwelling Unit (Suburban)</i>	<i>Weekday</i>	
	Hour Beginning	Percent of Peak Period
12:00–4:00 a.m.	100	14
5:00 a.m.	96	14
6:00 a.m.	92	14
7:00 a.m.	74	1
8:00 a.m.	64	1
9:00 a.m.	–	0
10:00 a.m.	–	0
11:00 a.m.	–	0
12:00 p.m.	–	0
1:00 p.m.	–	0
2:00 p.m.	–	0
3:00 p.m.	–	0
4:00 p.m.	44	1
5:00 p.m.	59	1
6:00 p.m.	69	1
7:00 p.m.	66	9
8:00 p.m.	75	9
9:00 p.m.	77	10
10:00 p.m.	92	14
11:00 p.m.	94	14

* Subset of database

Parking studies of apartments should attempt to obtain information on occupancy rate and on the mix of apartment sizes (in other words, number of bedrooms per apartment and number of units in the complex). Future parking studies should also indicate the number of levels contained in the apartment building.

Additional Data

- Apartment occupancy can affect parking demand ratio. In the United States, successful apartment complexes commonly have a vacancy rate between 5 and 10 percent.¹

Study Sites/Years

Canada:

Central City, Not Downtown:
Brooks, AB (1998)

Puerto Rico:

Central City, Not Downtown:
Mayaguez, PR (2007)

¹ Rental and Homeowner Vacancy Rates for the United States: 1960 and 1965 to 2009, U.S. Census Bureau.
<http://www.census.gov/hhes/www/housing/hvs/qtr309/q309tab1.html>

Land Use: 221

Low/Mid-Rise Apartment

United States:

Suburban:

Skokie, IL (1964); Glendale, CA (1978); Irvine, CA (1981); Newport Beach, CA (1981); Dallas, TX (1982); Farmers Branch, TX (1982); Euless, TX (1983, 1984); Baytown, TX (1984); Syracuse, NY (1987); Devon, PA (2001); Marina del Rey, CA (2001); Milburn, NJ (2001); Parsippany, NJ (2001); Springfield, NJ (2001); Westfield, NJ (2001); Beaverton, OR (2002); Hillsboro, OR (2002); Portland, OR (2002); Vancouver, WA (2002); Goleta, CA (2008); Ventura, CA (2008); Englewood, CO (2009)

Urban:

Dallas, TX (1982, 1983); San Francisco, CA (1982); Syracuse, NY (1984, 1987); Santa Barbara, CA (1994); Long Beach, CA (2000); Santa Monica, CA (2001); San Diego, CA (2001)

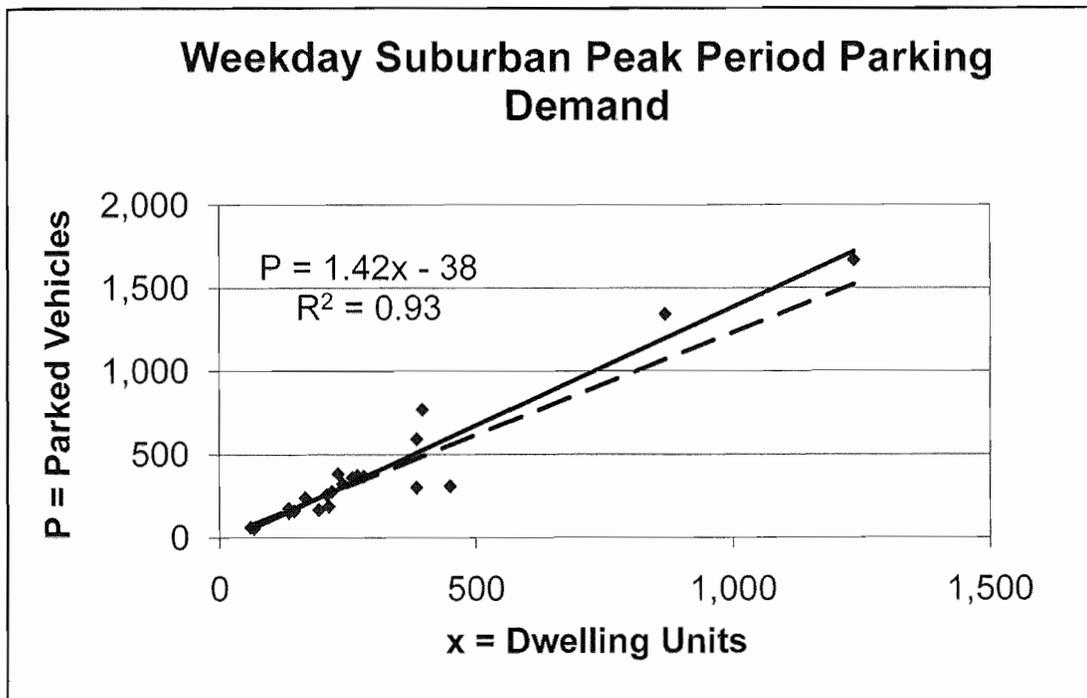
4th Edition Source Numbers

1007, 1015, 1114, 1137

Land Use: 221 Low/Mid-Rise Apartment

Average Peak Period Parking Demand vs. Dwelling Units
On a: Weekday
Location: Suburban

Statistic	Peak Period Demand
Peak Period	12:00–5:00 a.m.
Number of Study Sites	21
Average Size of Study Sites	311 dwelling units
Average Peak Period Parking Demand	1.23 vehicles per dwelling unit
Standard Deviation	0.32
Coefficient of Variation	21%
95% Confidence Interval	1.10–1.37 vehicles per dwelling unit
Range	0.59–1.94 vehicles per dwelling unit
85th Percentile	1.94 vehicles per dwelling unit
33rd Percentile	0.68 vehicles per dwelling unit



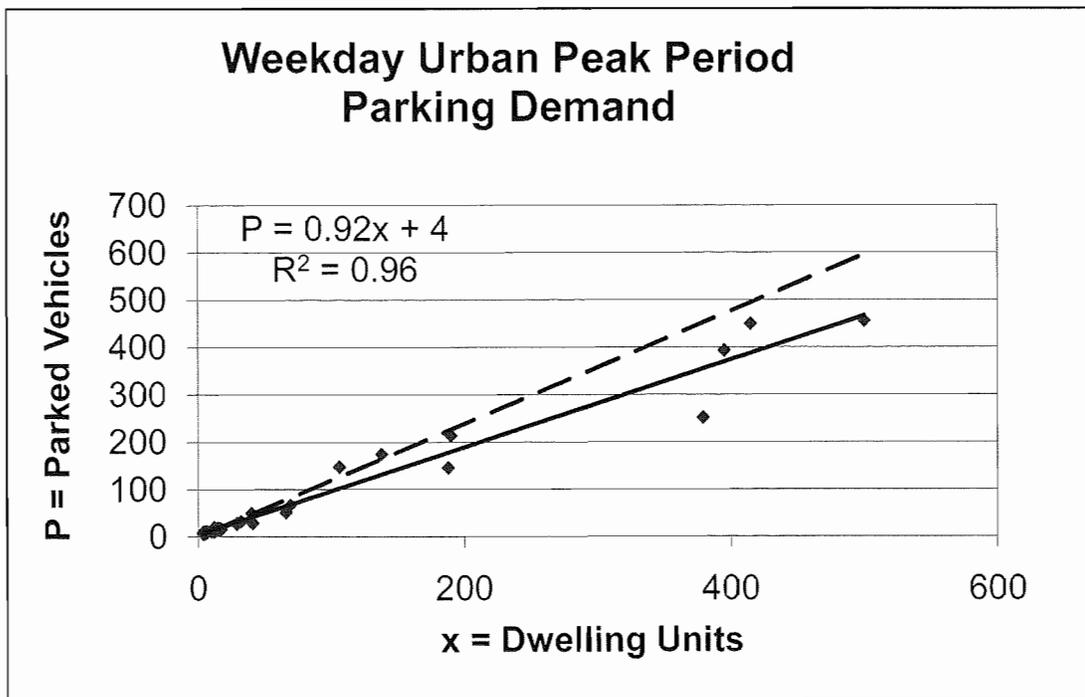
◆ Actual Data Points — Fitted Curve - - - Average Rate

Land Use: 221

Low/Mid-Rise Apartment

Average Peak Period Parking Demand vs. Dwelling Units
On a Weekday
Location: Urban

Statistic	Peak Period Demand
Peak Period	10:00 p.m.–5:00 a.m.
Number of Study Sites	40
Average Size of Study Sites	70 dwelling units
Average Peak Period Parking Demand	1.20 vehicles per dwelling unit
Standard Deviation	0.42
Coefficient of Variation	35%
95% Confidence Interval	1.07–1.33 vehicles per dwelling unit
Range	0.66–2.50 vehicles per dwelling unit
85th Percentile	1.61 vehicles per dwelling unit
33rd Percentile	0.93 vehicles per dwelling unit

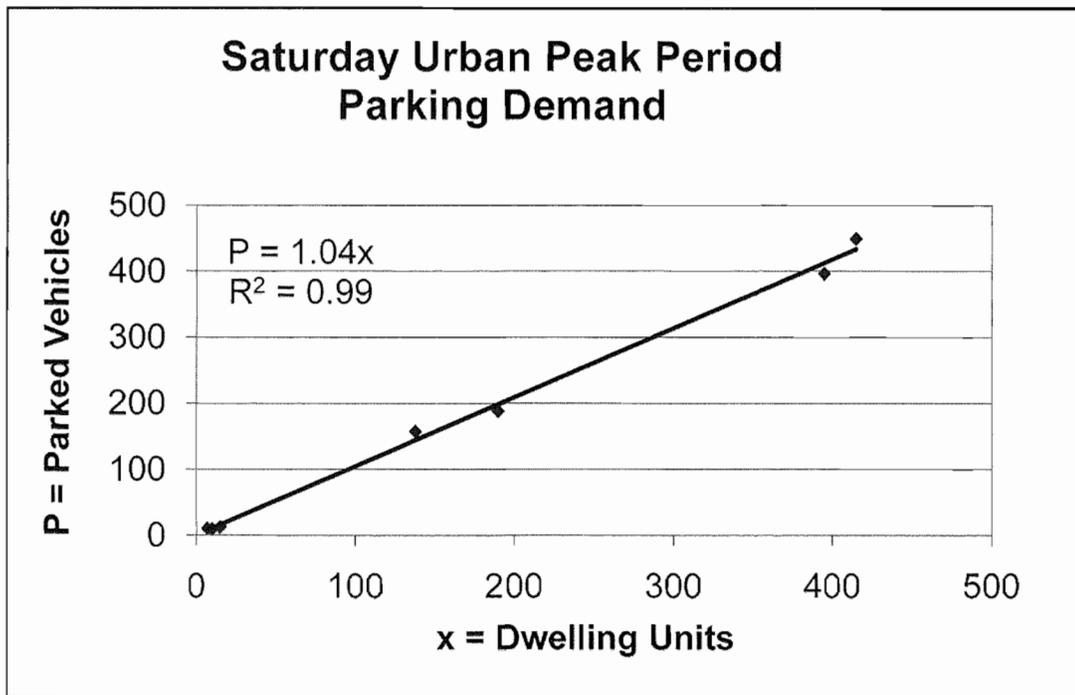


◆ Actual Data Points — Fitted Curve - - - Average Rate

Land Use: 221 Low/Mid-Rise Apartment

Average Peak Period Parking Demand vs. Dwelling Units On a: Saturday Location: Urban

Statistic	Peak Period Demand
Peak Period	No clear peak period emerged from the data; likely to fall between 10:00 p.m. and 6:00 a.m.
Number of Study Sites	8
Average Size of Study Sites	147 dwelling units
Average Peak Period Parking Demand	1.03 vehicles per dwelling unit
Standard Deviation	0.19
Coefficient of Variation	19%
Range	0.80–1.43 vehicles per dwelling unit
85th Percentile	1.14 vehicles per dwelling unit
33rd Percentile	0.93 vehicles per dwelling unit



◆ Actual Data Points

— Fitted Curve/Average Rate

Appendix B.
Excerpts from Parking Codes of Comparable
Cities

3 Bedroom	2.0	2.0	2.0
Each Additional Bedroom	0.25	0.25	0.25

Table 20-210 Multiple Dwelling				
Living Unit Size	Type of Parking Facility			
	All Open Vehicle Parking	One-Car Garage	Two-Car Garage	Bicycle Parking Spaces ¹
0 Bedroom (Studio)	1.25	1.6	2.2	1 per 4 living units
1 Bedroom	1.25	1.7	2.3	1 per 4 living units
2 Bedroom	1.7	2.0	2.5	1 per 4 living units
3 Bedroom	2.0	2.2	2.6	1 per 4 living units
Each Additional Bedroom	0.15	0.15	0.15	1 per 4 living units

Note 1: Bicycle parking spaces shall consist of at least sixty percent long-term and at most forty percent short-term spaces.

Notwithstanding the provisions of Table 20-210, off-street parking for multiple dwellings in the pedestrian oriented zoning districts shall conform to the requirements of Table 20-211.

Table 20-211 Multiple Dwellings in the Pedestrian Oriented Zoning Districts		
	Vehicle Parking Spaces	Bicycle Parking Spaces
Minimum required spaces ¹	1.25 per living unit	1 per living unit
Maximum required spaces	2.0 per living unit	None

Note 1: If tandem vehicle parking is provided, any residential unit utilizing tandem parking shall have a parking requirement of two vehicle parking spaces.

Table 20-215 Clean Air Vehicles For non-residential uses provide designated parking for any combination of low-emitting, fuel efficient, and carpool or van pool vehicles as follows:	
Total Number of Parking Spaces	Clean Air Vehicle Parking Spaces
0-9	0
10-25	1

17.64.020 Parking requirement by land use type.

Off-street vehicle parking shall be provided and maintained as specified below for the use or uses to which the property is devoted. Fractional requirements up to one-half shall be omitted. One-half or over shall require one space. Note: Uses on property zoned C-3 or within the arts and entertainment district should refer to Section [17.64.060](#) of this chapter.

Land Use	Spaces Required for Each Land Use
1. Residential Uses.	
Single-family/halfplex/duplex (lot ≤ 3,200 sf in central city)	0 spaces per dwelling unit
Single-family/halfplex/duplex (general)	1 space per dwelling unit
Multifamily (3 units or more) (central city)	1 space per dwelling unit + 1 guest space per 15 units
Multifamily (3 units or more) (general)	1.5 spaces per dwelling unit + 1 guest space per 15 units (guest space shall be clearly marked) (7 units or fewer do not require a guest space)
Artist’s live/work space	1 space per 1,000 gross sq. ft. or comply with Section 17.24.050(49)
Fraternity/sorority house, dormitory	1 space per 3 occupants
Residential hotel (SRO)	1 space per 10 units + 1 space for manager
2. Commercial Uses.	
Art gallery	Same ratio as “retail” below
Auto sales lot	1 space per 500 gross sq. ft. of building (minimum 1 space)
Bank, savings & loan, credit union (may include ATM)	1 space per 400 gross sq. ft.
Beauty shop, spa	Same ratio as “retail store, shopping center” below
Bed and breakfast inn/rooming and boarding house	1 space per 2 guest rooms + 1 for resident owner/manager 1 space per 500 gross sq. ft.
Commercial services (except those specifically included in chart)	
Deli, food store, grocery	Same ratio as “retail store” below
Hotel	1 space per 2 guest rooms + parking for additional services (conference center/restaurant/etc.)
Medical and dental clinic or offices	1 space per 200 gross sq. ft.

3. Apartment house parking requirements shall be computed as follows:
 - a. For apartments with two bedrooms or less, a minimum of two spaces shall be required for each of the first four units; one and one-half spaces for each additional unit.
 - b. For apartments with three or more bedrooms (or two bedrooms and a den convertible to a third bedroom), a minimum of two spaces per unit shall be required. Parking requirements for units having less than three bedrooms shall be computed separately from the requirements for units having three bedrooms or more and then added together.
 - c. Visitor parking, in a ratio of one parking space for each seven (1:7) units, shall be provided. All visitor parking spaces shall be clearly marked for this use. Visitor parking may be open or covered and does not count as part of the covered parking requirement described in subsection A4 of this section.
 4. At least one space per dwelling unit of the off-street parking required in subsections (A)(1), (A)(2) and (A)(3) of this section shall be located in a garage or carport.
 5. Motels, hotels, lodging houses and private clubs providing guest sleeping accommodations shall have at least one space for each guest sleeping room or for each two beds, whichever is greater, plus at least one space for each two employees.
 6. Trailer parks shall have a minimum of one space for each unit, plus at least one additional space for each three units, none of which shall occupy area designated for access drives.
 7. Small bed and breakfasts and bed and breakfast inns shall have at least one space for each guest sleeping room plus at least one space for each employee on maximum shift. In addition, at least two parking spaces, one of which must be covered, shall be provided for residents of small bed and breakfasts and bed and breakfast inns; the zoning administrator may require only one parking space, which may be uncovered, for a resident manager of a bed and breakfast inn.
- B. Offices, Commercial Uses and Places of Public Assembly in the C-N and C-R Districts.
1. C-N District. One space for each 180 square feet of gross floor area, plus 10 spaces in addition to spaces occupied by cars being serviced on the site of each service station, plus additional spaces for each open use as prescribed by the zoning administrator. For banks and other financial institutions (commercial banks, credit unions, and savings and loans)—one space for each 300 square feet of gross floor area, except for floor area used for storage.
 2. C-R District. Parking requirements shall be established by the zoning administrator and/or planning commission on a case by case basis in accordance with the purposes of Chapter 18.20 of this title.
- C. Office, Commercial and Industrial Uses not in the C-N or C-R District.
1. Food stores—one space for each 150 square feet of gross floor area.
 2. Banks and other financial institutions (commercial banks, credit unions, and savings and loans)—one space for each 300 square feet of gross floor area, except floor area used for storage.
 3. Massage establishments—two spaces for each massage technician, plus the requirements for supplementary uses.
 4. Retail stores except food stores and stores handling only bulky merchandise; personal service establishments including barbershops and beauty shops, cleaning and laundry agencies, and similar enterprises—one space for each 300 square feet of gross floor area, except for floor area used exclusively for storage or truck loading.
 5. Commercial service enterprises, repair shops, wholesale establishments, and retail stores which handle only bulky merchandise such as furniture, household appliances, machinery, and motor vehicles—one space for each 500 square feet of gross floor area, except for floor area used exclusively for storage or truck loading.

Modesto

10-2.2002 - Number of Required Spaces.

Except as otherwise provided in this article, or by the Council, Commission or Board as part of plot plan reviews, rezoning, use permits or other similar applications, the minimum number of required off-street parking spaces shall be:

- (a) Residential Uses.
 - (1) Unless otherwise provided below, for sites with one (1) to thirty-six (36) dwelling units, two (2) off-street parking spaces shall be provided for each unit. For each additional unit above thirty-six (36), one and one-half (1.5) spaces per unit shall be provided. Studio and one-bedroom units shall require one (1) space per unit.
 - (2) In a project, for every dwelling unit not having direct vehicular access to a public street:
 - (i) An additional one-half (0.5) space is required for each unit with a one (1) car garage.
 - (ii) One (1) additional space is required for each unit with a two (2) car garage.
 - (3) For the purpose of meeting the requirements in (a)(3) of this section that are greater than those in (a)(1) of this section, tandem or driveway standard-size spaces may be counted.
 - (4) For developments where vehicular access is via private streets or common driveways, one (1) recreational vehicle parking space shall be provided for every twenty-five (25) dwelling units. For projects with less than twenty-five (25) dwelling units, no such spaces are required. Recreational vehicle spaces shall at a minimum be ten (10) feet wide and twenty-six (26) feet long.
 - (5) Residential care facility, residential service facility, or family day care home: One (1) additional space for each employee or attendant beyond two (2).
- (b) Nonresidential Uses.
 - (1) Bar: One (1) for each three (3) seats or one (1) for each sixty (60) square-feet of drinking area when the number of seats not known or not permanently fixed;
 - (2) Beauty college: Two and one-half (2.5) for each training station;
 - (3) Bingo game: One (1) for each four (4) seats;
 - (4) Boarding and lodging house, club or fraternity with sleeping rooms: One (1) for each two (2) beds;
 - (5) Bowling alley: One (1) for each three hundred (300) square-feet;
 - (6) Child day care other than family day care homes: One (1) for each five (5) children;
 - (7) Church: One (1) for each four (4) seats in the building with the largest capacity;
 - (8) Dance hall: One (1) for each fifty (50) square-feet of floor area used for dancing;
 - (9) Hospital: One and three-quarters (1.75) for each bed;
 - (10) Hotel or motel: One (1) for each guest room. Additional spaces for restaurants, meeting facilities and other related uses shall be provided as required;
 - (11) Library: One (1) for each three hundred (300) square-feet;
 - (12) Manufacturing or related use: One (1) for each six hundred (600) square-feet;
 - (13) Medical or dental office: One (1) for each two hundred (200) square-feet;
 - (14) Motor vehicle and machinery repair: One (1) for each three hundred (300)

Livermore

Table 4.6: Automobile Parking Requirements

Use	Number of Required Spaces	Other Standards
Residential		
Detached and Attached Units		
Studio	1	No covered spaces required
1 bedroom	1	No covered spaces required
2 or more bedroom	2	No covered spaces required
Guest Spaces (multiple families)	1 per 4 units	No covered spaces required
Mobile Home Parks		
Each Mobile Home	2 spaces per unit	
Use in Common	0.5 per unit	Within 200' of each lot
Guest spaces	0 per unit if on-street parking is provided within project or on an adjacent street, 1 per 5 units if one side of street has parking, 2 per 5 units if no on-street parking exists	Determined by street adjacent to lot. If corner lot, can use either street, or both, to determine.
Commercial		
General Retail	1 space per 250 sf	
Restaurants/Food Services (Café, Coffee Shop)	1 space per 3 seats. If >25% of a shopping center 1 per each seat	
Neighborhood Market	1 space per 300 sf	
Services: Business, Financial, Professional		
Banks & Financial services	1 space per 300 sf	
Medical Services		
Clinics, laboratory, urgent care, doctor or dental office	1 space per 300 sf	
Extended care	1 space per 3 beds	
Hospitals	1 space per 300 sf	
Office: Business, service, Professional, administrative	1 space per 300 sf	

	Space(s)/Unit or other criteria	Guest Parking
Caretaker and employee housing	1 covered/unit	_____
Duplexes	2 covered/unit	_____
Dwelling group	2 covered/unit	_____
Mobilehome parks	1/mobilehome	1/4 units
Multifamily dwellings	1½/unit	1/4 units
Downtown	1/unit	_____
Organizational houses	1/bed	1/6 beds

	Space(s)/Unit or other criteria	Guest Parking
Residential care facilities		
All, except care homes (6 or less)	1/5 beds	1/10 beds
Care homes, 6 or more	2/house in enclosed garage	1/10 beds
Rooming and boarding houses	1 per 2 beds	_____
Senior residential projects	1 covered/2 units	1/10 units
Single-family dwellings	2/house in enclosed garage	_____
Townhouses	2 covered/unit	_____
Triplexes	2/unit (at least 1 covered)	_____

RETAIL TRADE

	Gross Floor Area Space(s)/sq. ft.	Other/Additional Spaces
All uses listed under “Retail Trade” on Table 2-2, except for the following:	1/250	_____
Alcoholic beverage sales		
Bars and nightclubs with dancing or live entertainment	1/150	_____
Auto and vehicle sales—New	1/2,000 sq. ft. of outdoor sales and storage area	
Auto and vehicles sales—Used	1/2,000 sq. ft. of outdoor sales and storage area	
Auto and vehicle leasing/rental	1/2,000 sq. ft. of outdoor sales rental and storage area	
Commercial storage	1/150	

Walnut Creek

10-2.3.206 Off-Street Parking and Loading Spaces Required.

Off-street parking spaces shall be provided in accordance with the following "Parking Regulations - Table A". Those land uses that require off-street loading spaces have a roman numeral reference to "Loading Regulations - Table B". The roman numeral reference indicates either Group I or Group II each of which have different loading space requirements. The required loading space dimension is also outlined in Table B.

Additional "Notes" for specific land use classifications are referenced in Table A. These "Notes" can be found in the "Parking Regulations - Notes Table" following Table A. Where a "Note" or a number in parenthesis is opposite a use classification heading, the referenced "Note" shall apply to all use classifications under the heading.

Parking regulations for land uses not listed shall be determined by the Transportation Administrator. In order to make this determination, the Transportation Administrator may require the submission of survey data from the applicant or collected at the applicant's expense.

In the following Tables, **RFA** stands for Rentable Floor Area and **GFA** stands for Gross Floor Area. For definitions of these two terms see Part I, Article 3. Definitions.

**TABLE A
PARKING REGULATIONS**

LAND USE CLASSIFICATION	OFF STREET PARKING REQUIREMENTS	NOTES	LOADING SPACES REQUIRED (SEE TABLE B)
A. Residential Use Classifications		(1)	
1. Adult Day Care Home		(2)	
2. Congregate Living Facility	.25 per dwelling unit or .25 per bedroom (whichever is greater)		Group I
3. Family Day Care Home			
a. <i>Small Family Day Care Home</i>		(2)	
b. <i>Large Family Day Care Home</i>	1 per employee + 1 per 12 children		

4. Group Residential	1 per bedroom	
5. Multiple Family Residential	1.25 per studio unit; 1.5 per 1 bedroom unit; 2 per 2 bedroom unit; 2.25 per 2+ bedroom units. Every dwelling unit shall have one covered space.	(3) (4) (24)
a. Senior Housing		(5)
6. Residential Care Home		(2)
7. Second Family Unit	One space more than required for Single Family Residential (uncovered)	(6)
8. Single Family Residential	2 covered per dwelling unit	(4)
B. Commercial Use Classifications		(1) (7)
1. Ambulance Services	1 per 250 sq. ft. of RFA (pertaining to office or administrative use)+ 1 per Ambulance	Group I
2. Animal Sales and Service		
a. <i>Animal Hospital</i>	1 per 250 sq. ft. of RFA. (Area devoted to housing animals is excluded.)	Group I
b. <i>Animal: Retail Sales and Grooming</i>	1 per 250 sq. ft. of RFA.	Group I
c. <i>Horse Stables</i>	1 space for each 4 horses boarded on site + 1 per employee.	
d. <i>Kennel</i>	1 per 250 sq. ft. of RFA. (Area devoted to housing animals is excluded)	Group I
3. Artist Studio	1 per 450 sq. ft. of GFA	
4. Banks and Savings and Loans		
a. <i>Banks and Savings and Loans</i>	1 per 250 sq. ft. of RFA	Group I

Sec. 8-22003. Required parking spaces by type of use.

The number of off-street parking spaces required for each use shall be as stipulated in the following section. In computing the number of off-street parking spaces required, a fractional space of one-half space or more shall be counted as one space.

(a) Residential uses.

(1) Dwellings, single-family, duplexes:

- a. Dwellings, single-family, with four or fewer bedrooms—Two covered
- b. Dwellings, single-family, with five or more bedrooms—Three covered.



(2) Dwellings, multiple (including apartments, condominiums, townhouses, live/work³ units, rooming and boarding houses¹, and single room occupancy (SRO) and efficiency¹ units):

- a. Senior citizen housing developments¹, efficiency apartments¹, single room occupancy units¹ and rooming and boarding houses¹—0.5 covered spaces per unit for residents plus 0.5 uncovered spaces per unit designated for guest parking only.
- b. Studio and one-bedroom units—One covered space per unit for residents plus 0.5 uncovered spaces per unit (1.5 spaces per live/work³ unit) designated for guest parking only.
- c. Two bedroom units and larger—One covered space per unit for residents plus 0.5 uncovered spaces per unit for residents plus 0.5 uncovered spaces per unit (1.5 spaces per live/work³ unit) designated for guest parking only.
- d. The planning commission may not reduce parking requirements within this section (a)(2) for a project where, based upon substantial evidence, there is insufficient off-street parking to meet the needs of the neighborhood. Where there is sufficient off-street parking to meet the needs of the neighborhood, a parking reduction may only be granted by the planning commission through site plan and architectural approval if, based on evidence provided by the project applicant, it makes one of the following findings:
 - i. Due to the use's proximity to alternative transportation infrastructure and service, including but not limited to BART, Amtrak, and other passenger rail services, bus service, or similar, the use is likely to require a lower level of parking than is required by similar projects not proximate to alternative transportation because residents will have viable transportation alternatives available.
 - ii. Due to the use's proximity to amenities, and/or due to the desire to create a more pedestrian oriented environment in and around the project site, a

reduction in required parking will further the goal of enhancing and strengthening the neighborhood, and, furthermore, that residents will have access to amenities such as shopping, entertainment, and employment without necessitating the use of automobiles.

iii. Due to the anticipated tenancy, including but not limited to affordable units, senior citizen units, single room occupancy (SRO) and efficiency¹ units, and special needs housing, and based on quantifiable evidence, the use is not likely to require the same levels of parking as standard residential development. This finding shall only be used for projects that have entered into a binding agreement with the city or other public agency guaranteeing the project will serve the identified tenancy type.

iv. Due to the availability of on-street parking, the guest parking requirement for the project will be lower than a development where adequate on-street parking is not provided. This finding shall only be used to lower the guest parking requirement, and not the resident parking requirement.

(3) Dwellings, secondary—One space per bedroom (may be uncovered). Space(s) must be provided in the rear and side yard setback areas. Where parking in the rear and side yard setback areas is not feasible due to site-specific conditions, then one space may be located in the front yard on an extended driveway developed in conformance with this article. Tandem parking is permitted only if an extended driveway cannot be accommodated.

(4) Mobile home—Two per mobile home space.

(5) Mobile home park community building—One per ten mobile home spaces.

(6) Mobile home park visitor parking—One per five mobile home spaces located no further than four hundred feet from the mobile home spaces to be served.

(b) Business uses.

(1) Entertainment and recreation:

a. Theaters, auditoriums and sports arenas or stadia, including school auditoriums and stadia—For all fixed seating capacity, one for each four seats; theaters in shopping centers, one per three and one-half seats.

b. Dance halls and exhibition halls, without fixed seats for floor area devoted to public assembly or activity—One for each one hundred square feet floor area devoted to the principal activity.

c. Billiard and pool rooms—Two per table.

d. Bowling alleys—Three for each alley except when in a shopping center which includes a supermarket, when it shall be two per alley.

e. Golf courses—Four per hole, plus required spaces for restaurants and cocktail lounges.

PART IV—REGULATIONS APPLYING IN ALL OR SEVERAL DISTRICTS

Article 17 Off-Street Parking and Loading Regulations

4-1704 Off-Street Parking and Loading Spaces Required

A. Off-street parking and loading spaces shall be provided in accord with the following list. For off-street loading, references are to Table A, which sets space requirements and standards for different groups of use classifications and sizes of buildings. References to spaces per square foot are to be computed on the basis of gross floor area, unless otherwise specified, and shall include allocations of shared restroom, halls, and lobby area, and mechanical equipment or maintenance areas, but shall exclude area for vertical circulation, stairs, or elevators.

B. Where the use is undetermined, or not specified herein, the Zoning Enforcement Official shall determine the probable use and the number of parking and loading spaces required. In order to make this determination, the Zoning Enforcement Official may require the submission of survey or other data from the applicant or have data collected at the applicant’s expense.

OFF-STREET PARKING AND LOADING SPACES REQUIRED

Use Classification	Off-Street Parking Spaces	Off-Street Loading Spaces Per Group Classification (See Table A)
<i>Residential, General</i>		
Day Care, Large Family	1 per employee	
Day Care, Limited	1	
Group Housing	1 per 2 beds; plus 1 per 100 sq. ft. used for assembly purposes, or as required by use permit or planned development approval	A
<i>Residential, Single-Family</i>		
Single-Family Dwelling (RS, RD, RO and RM)	2, non-tandem covered, per unit. New single-family dwellings or additions with more than 4 bedrooms or over 4,000 square feet of livable area shall require one additional space which may be uncovered and in tandem if it is located a minimum of 30 feet back from the front property line.	
<i>Residential, Two-Family</i>		
Two-Family Dwelling (RD, RO and RM)	2, including 1 covered, per unit	
Two-Family Dwelling (SA only)	2, including 1 covered, per unit (tandem allowed)	
Two-Family Dwelling (All DA Districts)	1 covered per unit for areas adjacent to BART; 1.5, including one covered, per unit for all other areas	
<i>Residential, Mixed Use & Multi-Family (3 or more units)</i>		

Studio or one-bedroom unit	1.5 per unit, including 1 covered	
Studio or one-bedroom unit (SA only)	1.0 covered space, plus 0.5 guest spaces, per unit (tandem may be considered)	
Two-bedroom unit	2.25 per unit, including 2 covered	
Two-bedroom unit (SA only)	1 covered space, plus 0.75 guest spaces, per unit (tandem may be considered)	
Three-bedroom or larger unit	2.5 per unit, including 2 covered	
Three-bedroom or larger unit (SA only)	1.0 covered spaces, plus 1.0 guest spaces, per unit (tandem may be considered)	
Live-Work (SA only)	2.0 per unit, including 1 covered, plus 0.75 space for guest/employee not residing in unit (tandem may be considered)	
Guest Parking	0.25 spaces per unit of the required space must be designated on the site for guest parking	
Guest Parking (SA only)	See requirements above	
DA Districts Only Except Adjacent to BART	1.5 spaces per unit; (0.25 to 0.50 spaces/unit may be unbundled flex parking)	
DA Districts Adjacent to BART	1.0 space per unit (plus allowance of unbundled flex parking of 0.25 to 0.50 spaces/unit at developer's option).	
Senior Citizen	1.2 per unit, including 1 covered space and one space per employee	
Senior Citizen (SA only)	0.6 per unit, plus 1.0 space per employee. All resident spaces to be covered.	
Residential Congregate Care	This classification is <u>not</u> a mixed or multi-family use. Parking requirement to be based on the unit's regular residential parking requirement.	
Type of Parking Facilities	Shared parking arrangements, parking structures and parking lift systems, subject to review and approval of the City are encouraged.	

Use Classification	Off-Street Parking Spaces	Off-Street Loading Spaces Per Group Classification (See Table A)
Public and Semipublic		
Assembly Uses	1 space per 50 sq. ft. used for assembly purposes	C
Convalescent Facilities	As specified by use permit	C
Cultural Institution	1 space per 300 sq. ft.	C
Day Care, General	1 space per 6 children or fraction thereof; maximum enrollment based on maximum occupancy load	
Detention Facilities	As specified by use permit	
Emergency Health Care	As specified by use permit	
Government Offices	1 space per 300 sq. ft.	B
Government Offices (SA only)	1 space per 333 sq. ft. for ground floor space, and 1 space per 500 sq. ft. for upper story space	B
Hospitals	1 space per 1.5 licensed beds	C

shall execute and record, in the office of the County Recorder, a covenant for the benefit of the City, in a form first approved by the City, by which the owner agrees to: (i) improve and maintain the existing parking in accordance with City standards as set forth in this article, and the City Design Documents as defined by Tracy Municipal Code Section 12.08.010; (ii) maintain the existing parking for the benefit of the general public, and not restrict the use of the existing parking for the benefit of customers of the building; (iii) stipulate that the existing parking will not be used for any purpose other than parking without the prior written consent of the City; (iv) hold the City harmless, and indemnify and defend the City from and against any claims by third parties regarding the use of the existing parking; and (v) the term of the covenant shall be not less than five (5) years.

- (3) In the event that the real property on which the building is located does not have existing parking within the boundaries of the Downtown Incentive Area, the applicant for the building permit shall execute a promissory note, in a form first approved by the City, by which the applicant agrees to: (i) pay the Downtown Incentive Area Parking Fee (in an amount established by Implementing Resolution No. 97-114, adopted by City Council on April 15, 1997, or any duly authorized amendment thereto) in five equal installments over a five (5) year period, and (ii) pay interest on late payments in an amount fixed by the City's Finance Manager in accordance with the rate established by the Local Agency Investment Fund.

(Prior code § 10-2.2603 as amended by § 1, Ord. 954 C.S., eff. June 14, 1997)

**Editor's Note: Ord. 954 C.S., which added subsection (d) to § 10.08.3470, will automatically expire June 14, 2002.*

10.08.3480 - Parking spaces required.

Except as otherwise provided in this chapter, the number of off-street parking spaces for the various uses shall be as set forth in the "Permitted Parking Chart." The parking requirements for handicapped persons shall conform to the provisions of Title 24 of the State Building Code, and shall be provided according to the schedule in City of Tracy Standard Plans.

(Prior code § 10-2.2604)

PERMITTED PARKING CHART

Tracy

Uses	Minimum Parking Spaces Required
Residential	
Single-family residential	
Attached or detached.	Two (2) non-tandem enclosed (in garage) spaces per unit. Exception: housing designated by the City as in a very low or low income housing program, in
Duplex	which case only one of the two (2) spaces per unit is required to be enclosed.
Multiple-family residential Studio or one bedroom	One and one-half (1½) spaces, one of which shall be covered, plus one additional space marked "guest" per every five units
Two (2) or more bedrooms	Two (2) spaces with one covered per unit, plus one space marked "Guest" for every five residential units
Clubs with sleeping rooms Fraternity houses with sleeping rooms	One space per two (2) sleeping rooms

17.60.100 - Spaces required—Number.

The number of off-street parking spaces required for each use is as follows:

- A. Residential:
 - 1. Residential single-family and duplex, all zones, two covered spaces per unit,
 - 2. Three-family and four-family dwelling, R-LD zone, two spaces per unit, two-thirds covered,
 - 3. Multifamily, R-GA zone, two spaces per unit, two-thirds covered,
 - 4. Multifamily, R-MD and R-HD zones, two spaces per unit, covered spaces not required,
 - 5. Mobilehome park, two spaces per unit, covered spaces not required,
 - 6. Lodginghouse or retirement home, one space per each two sleeping rooms;
- B. Public and quasi-public:
 - 1. Playground, park, stadium, sports arena, as prescribed by the planning commission,
 - 2. Public and private museum, library and similar nonassembly cultural center, as prescribed by the planning commission,
 - 3. Church, temple, religious meeting hall, meeting hall, lodge and fraternal and similar assembly building, one space for each four seats,
 - 4. Public and private day care center, nursery school, elementary school and elementary facility, one space for each faculty member plus adequate bus loading facilities,
 - 5. Public and private high schools, as prescribed by the planning commission,
 - 6. Hospital, two spaces for each bed,
 - 7. Convalescent hospital, nursing home, rest home and similar use, one space for each three beds;
- C. Office:
 - 1. Business and professional, including but not limited to accountant, attorney, architect, insurance and real estate, one space for each two hundred fifty square feet of building,
 - 2. Medical, dental and other health care office, one space for each two hundred square feet of building;
- D. Commercial:
 - 1. Automobile service and repair, one space for each five hundred square feet of building,
 - 2. Bank and savings and loan, one space for each three hundred square feet of building,
 - 3. Barbershop and beauty shop, one space for each two hundred square feet of building,
 - 4. Convenience food store, fruit stand, supermarket or similar use, one space for each two hundred fifty square feet of building,
 - 5. General commercial and retail sales, one space for each five hundred square feet of building,
 - 6. Motel, hotel, guesthouse and boardinghouse, one space for each room plus one space for the manager,
 - 7. Mortuary, one space for each four seats,
 - 8. Restaurant, bar, nightclub and similar use, one space for each four seats,

Mobile Home	2 per dwelling
Mobile Home Park	2 per dwelling, plus 1 guest space for every 2 dwellings
Residences	
Apartments	
Studio	1 covered or garaged per dwelling plus 1 parking space for unreserved and guest parking.
1 Bedroom	1 covered or garaged per dwelling plus 1 parking space for unreserved and guest parking.
2+ Bedrooms	1 covered or garaged per dwelling plus 1 parking space for unreserved and guest parking.
Condominiums	
Studio	1 covered or garaged per dwelling plus guest parking (see below)
1 Bedroom	1 covered or garaged per dwelling plus guest parking (see below)
2+ Bedrooms	2 covered or garaged per dwelling plus guest parking (see below)
Guest Parking	Projects with 10 or more dwellings shall provide one additional guest parking space for every 2 dwelling units which shall be marked as a guest parking space
Senior Citizen Apartments	1 covered or garaged per dwelling plus one guest parking space for every three dwelling units.
Residential Use Secondary to Commercial Use	2 per residence
Second Unit	1 parking space, see Section 8.80.040.F relating to Second Units parking
Single Family/Duplex	
Lots of 4,000 square feet or less	2 in enclosed garage per dwelling* plus one on-street parking space per dwelling unit within 150 feet of that dwelling unit.
Lots greater than 4,000 square feet	2 in enclosed garage per dwelling*.
Single Room Occupancy Units	1 per unit plus 1 guest parking space for every 3 units
Supportive Housing - Small	2 per dwelling
Supportive Housing - Large	1 per 3 employees on largest shift, plus 1 per 3 beds
Transitional Housing - Small	2 per dwelling
Transitional Housing - Large	1 per 3 employees on largest shift, plus 1 per 3 beds

*Except if two, full-size, unenclosed parking spaces are provided elsewhere on a lot for the purposes of converting a residential garage to living space pursuant to Chapter 8.78.

C. Civic Use Types. Civic Use Types shall provide off-street parking spaces as follows:

Appendix C.
Excerpt on Apartment Demographics



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- Advocacy Tools
- Career Center
- Press Room
- Consumers
- Suppliers

Quick Facts: Resident Demographics

- [U.S. Households: How Many Rent, How Many Own?](#)
- [Tenure by Age of Population](#)
- [Tenure by Age of Householders](#)
- [What Types of Structures do Renters Live in?](#)
- [Apartment Household Incomes](#)
- [Renters in Large Cities](#)
- [Apartment Resident Demographics](#)
- [Transportation](#)
- [Number of Renters in Each State](#)

U.S. Households: Renters & Owners			
Type of Household	Number of Households (000)	% of U.S. Total	Number of Residents (000)
Renter-Occupied Housing	40,119	34%	98,820
Owner-Occupied Housing	78,583	66%	207,291
Total	118,702	100%	306,111

Source: NMHC tabulations of 2011 Current Population Survey, Annual Social and Economic Supplement, US Census Bureau (<http://www.census.gov/cps>). Updated September 2011.

Tenure by Age of Population			
Age Distribution	Share of People in Rental Housing	Share of People Owner-Occupied Housing	
Under 30 Years Old	42%	58%	
30 to 44 Years Old	36%	64%	
45 to 64 Years Old	21%	79%	
65 Years and Older	17%	83%	
Total	32%	68%	

Source: NMHC tabulations of 2011 Current Population Survey, Annual Social and Economic Supplement, US Census Bureau (<http://www.census.gov/cps>) Updated September 2011.

Tenure by Age of Population			
Age Distribution	Number of People in Rental Housing (000s)	Number of People in Owner-Occupied Housing (000s)	Total
Under 30 Years Old	53,212	72,736	125,949
30 to 44 Years Old	21,782	38,263	60,045
45 to 64 Years Old	17,356	63,586	80,939
65 Years and Older	6,469	32,710	39,179
Total	98,820	207,291	306,111

Source: NMHC tabulations of 2011 Current Population Survey, Annual Social and Economic Supplement, US Census Bureau (<http://www.census.gov/cps>). Updated September 2011.

Tenure by Age of Householders			
Age Distribution	Share of People in Rental Housing	Share of People in Owner-Occupied Housing	
Under 30 Years Old	71%	29%	
30 to 44 Years Old	41%	59%	
45 to 64 Years Old	25%	75%	
65 Years and Older	19%	81%	
Total	34%	66	

Source: NMHC tabulations of 2011 Current Population Survey, Annual Social and Economic Supplement,

NMHC - National Multi Housing Council - NMHC

US Census Bureau (<http://www.census.gov/cps>). Updated September 2011.

Tenure by Age of Householders			
Age Distribution	Number of Renters (000s)	Number of Owners (000s)	Total
Under 30 Years Old	11,054	4,419	15,472
30 to 44 Years Old	12,808	18,691	31,499
45 to 64 Years Old	11,435	34,929	46,364
65 Years and Older	4,823	20,544	25,367
Total	40,119	78,583	118,702

Source: NMHC tabulations of 2011 Current Population Survey, Annual Social and Economic Supplement, US Census Bureau (<http://www.census.gov/cps>). Updated September 2011.

What Type of Structure Do Renter Households Live in?			
Type of Structure	Number of Households (000s)	Percentage of Households	Number of Residents (000s)
Single-family homes	13,812	34%	40,525
Structures with 2 to 4 units	7,611	19%	18,750
Structures with 5 or more units	17,027	42%	35,002
Mobile Homes	1,513	4%	4,251
Other	157	0%	292
Total	40,119	100%	98,820

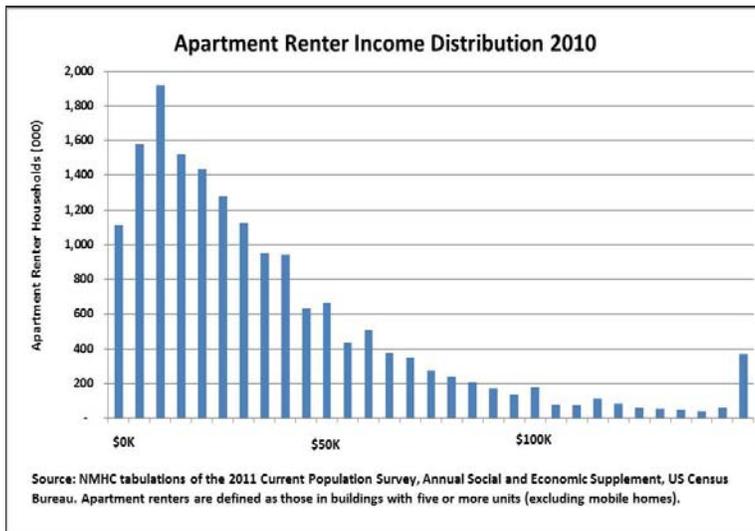
Source: NMHC Tabulations of 2011 Current Population Survey, Annual Social and Economic Supplement, US Census Bureau (www.census.gov/cps). "Other" housing includes units in hotels, rooming houses, dormitories, tents or unspecified housing. Updated September 2011.

Apartment Household Incomes, by Income Categories		
Income	2011 Number of Households (000s)	2010-2011 Annual Change
<\$20,000	6,131	8.5%
\$20,000-\$49,999	6,365	-1.0%
\$50,000+	4,530	-1.9%

Source: NMHC tabulation of 2011 Current Population Survey, Annual Social and Economic Supplement, US Census Bureau (www.census.gov/cps). Apartment renters are defined as those in buildings with five or more units (excluding mobile homes). Income figures recorded in 2010 are adjusted for inflation using the Consumer Price Index. Updated September 2011.

Incomes: Apartments Versus All Households Annual change 2009-2010		
	Apartments	All households
Mean Income	-3.8%	2.9%
Median Income	-5.3%	-3.1%

Source: NMHC tabulations of the US Census Bureau's 2011 Current Population Survey, Annual Social and Economic Supplement (www.census.gov/cps). Apartment renters are defined as those in buildings with five or more units (excluding mobile homes). Income figures recorded in 2010 are adjusted for inflation using the Consumer Price Index. Updated September 2011.



Large Cities: Population, Housing, and Renting				
City Name	Population	Total Occupied Housing Units	Total Occupied Rental Units	Percentage of Housing Units Occupied by Renters
New York, NY	8,184,899	3,039,467	2,063,173	67.9%
Los Angeles, CA	3,797,144	1,310,259	817,231	62.4%
Chicago, IL	2,698,831	1,014,576	549,328	54.1%
Houston, TX	2,107,208	762,309	409,935	53.8%
Philadelphia, PA	1,528,306	575,413	264,129	45.9%
Phoenix, AZ	1,449,481	511,432	226,250	44.2%
San Antonio, TX	1,334,359	470,223	207,419	44.1%
San Diego, CA	1,311,886	469,635	244,761	52.1%
Dallas, TX	1,202,797	447,680	253,449	56.6%
San Jose, CA	949,197	297,637	124,357	41.8%
Indianapolis, IN	824,199	322,700	139,368	43.2%
Jacksonville, FL	823,316	308,173	117,219	38.0%
San Francisco, CA	805,463	336,012	212,884	63.4%
Austin, TX	795,518	323,282	177,562	54.9%
Columbus, OH	789,939	319,428	167,965	52.6%
Fort Worth, TX	744,114	261,042	106,999	41.0%
Charlotte, NC	734,418	284,113	117,657	41.4%
Detroit, MI	711,910	255,201	119,337	46.8%
El Paso, TX	652,113	210,754	85,000	40.3%
Memphis, TN	647,870	241,400	115,655	47.9%
Boston, MA	621,383	251,721	169,951	67.5%
Baltimore, MD	620,583	237,945	128,662	54.1%
Seattle, WA	610,710	277,520	147,312	53.1%
Washington, DC	604,453	252,388	145,195	57.5%
Nashville, TN	602,618	240,618	111,637	46.4%

Source: 2010 American Community Survey. Updated October 2011.

Characteristics of Apartment Households and All U.S. Households in 2010 (in thousands)			
	All Apartments	New Apartments (Built 1990-2010)	Total Households (renters and owners)
Total Households	16,864	4,878	114,567
Age of Householder			
<30	28%	34%	12%

NMHC - National Multi Housing Council - NMHC

45-64	28%	28%	40%
65+	18%	18%	22%
Median Age	43	39	52
Mean Age	47	45	53
Household Type (%)			
→ single male	22%	20%	12%
→ single female	27%	28%	15%
married couple only	8%	10%	21%
married couple w/ kid(s)	10%	10%	27%
→ single parent	21%	19%	18%
other households	11%	13%	6%
Household Members (%)			
→ 1	49%	48%	27%
2	27%	29%	33%
3	12%	12%	16%
4+	12%	11%	23%
Mean Number	1.9	1.9	2.5
Children (under age 18)			
Mean number	0.4	0.4	0.6
% Households with one or more	24%	23%	33%
Household Income (% distribution)			
Less than \$20,000	36%	32%	19%
\$20,000 - \$34,999	22%	21%	17%
\$36,000 - \$49,999	15%	15%	14%
\$50,000 - \$74,999	14%	15%	18%
\$75,000 +	13%	16%	32%
Mean Income	\$40,354	\$45,786	\$69,497
Median Income	\$27,600	\$31,700	\$50,200
Household income of Market Rate Renters			
Mean Income	\$40,501	\$46,416	n/a
Median Income	\$31,000	\$36,400	n/a
Hispanic householders			
Hispanic	18%	14%	12%
non-Hispanic	82%	86%	88%
Motor Vehicles			
Mean # per Household	1.0	1.1	1.8
% Households with one or more	72%	81%	91%
<p><i>Notes: All statistics (except for market rate renters) are NMHC tabulations from the U.S. Census Bureau's 2010 American Community Survey. "Market Rate" apartments are those privately owned units whose residents reported that no government subsidy is received. Data for this category is from the 2009 American Housing Survey. Results in this table will differ from those of other national surveys because of differences in survey timing, question wording and sampling. Updated 12/2011.</i></p>			

Transportation-2009				
	All apartment renter households	Apartments built 1990 or later	Single family owners	Total households
Number of households (in thousands)	15,239	2,825	72,725	111,861
Main Transportation to Work				
Car, truck, van, motorcycle or taxi	49%	59%	68%	64%
Bus or streetcar	6%	2%	1%	3%
Subway or rail	4%	1%	1%	2%
Walking or bicycle	6%	4%	2%	3%
Work at home	2%	2%	5%	4%
<p><i>Note: The figures above indicate the share of households in which at least one person uses a particular type of transportation to work. More than one person per household may, for example, take the subway to work.</i></p>				
Public transportation - Use and Availability				
Public transportation available	83%	68%	45%	54%
Use public transportation	23%	11%	4%	9%

Source: NMHC tabulations of 2009 American Housing Survey. Updated

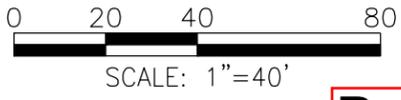
State Distribution of Apartment Residents, 2010			
State	Population in Occupied Housing Units	Number of Apartment Residents	Share of State Population
Alabama	4,669,482	331,834	7%
Alaska	687,633	57,277	8%
Arizona	6,274,353	676,213	11%
Arkansas	2,842,675	190,035	7%
California	36,529,547	6,003,764	16%
Colorado	4,933,193	623,857	13%
Connecticut	3,458,921	332,122	10%
Delaware	875,356	75,071	9%
District of Columbia	564,432	190,372	34%
Florida	18,421,617	2,172,133	12%
Georgia	9,459,388	996,562	11%
Hawaii	1,320,741	169,012	13%
Idaho	1,542,499	83,996	5%
Illinois	12,541,393	1,318,120	11%
Indiana	6,303,698	533,510	8%
Iowa	2,951,771	236,906	8%
Kansas	2,780,095	203,291	7%
Kentucky	4,220,396	309,272	7%
Louisiana	4,416,801	292,258	7%
Maine	1,292,022	75,732	6%
Maryland	5,647,607	761,804	13%
Massachusetts	6,318,372	780,886	12%
Michigan	9,648,506	774,440	8%
Minnesota	5,175,189	572,649	11%
Mississippi	2,878,072	167,686	6%
Missouri	5,822,089	393,652	7%
Montana	962,049	50,349	5%
Nebraska	1,779,264	172,789	10%
Nevada	2,668,488	412,381	15%
New Hampshire	1,276,655	119,769	9%
New Jersey	8,614,748	1,002,330	12%
New Mexico	2,023,303	126,748	6%
New York	18,806,605	4,406,488	23%
North Carolina	9,304,312	793,398	9%
North Dakota	649,443	90,029	14%
Ohio	11,229,916	977,071	9%
Oklahoma	3,649,685	253,116	7%
Oregon	3,752,315	422,798	11%
Pennsylvania	12,283,517	845,177	7%
Rhode Island	1,010,223	99,200	10%
South Carolina	4,497,158	347,982	8%
South Dakota	782,413	67,987	9%
Tennessee	6,203,425	520,818	8%
Texas	24,675,975	3,277,302	13%
Utah	2,730,317	220,638	8%
Vermont	600,631	36,698	6%
Virginia	7,784,783	881,118	11%
Washington	6,605,121	804,387	12%
West Virginia	1,804,591	84,716	5%
Wisconsin	5,540,833	515,486	9%
Wyoming	550,748	33,286	6%

Source: American Community Survey, 2010 1-Year Estimates. Updated September 2011.

National Multi Housing Council
1850 M Street, N.W., Suite 540, Washington, D.C. 20036-5803 - 202.974.2300 - 202.775.0112 (FAX)
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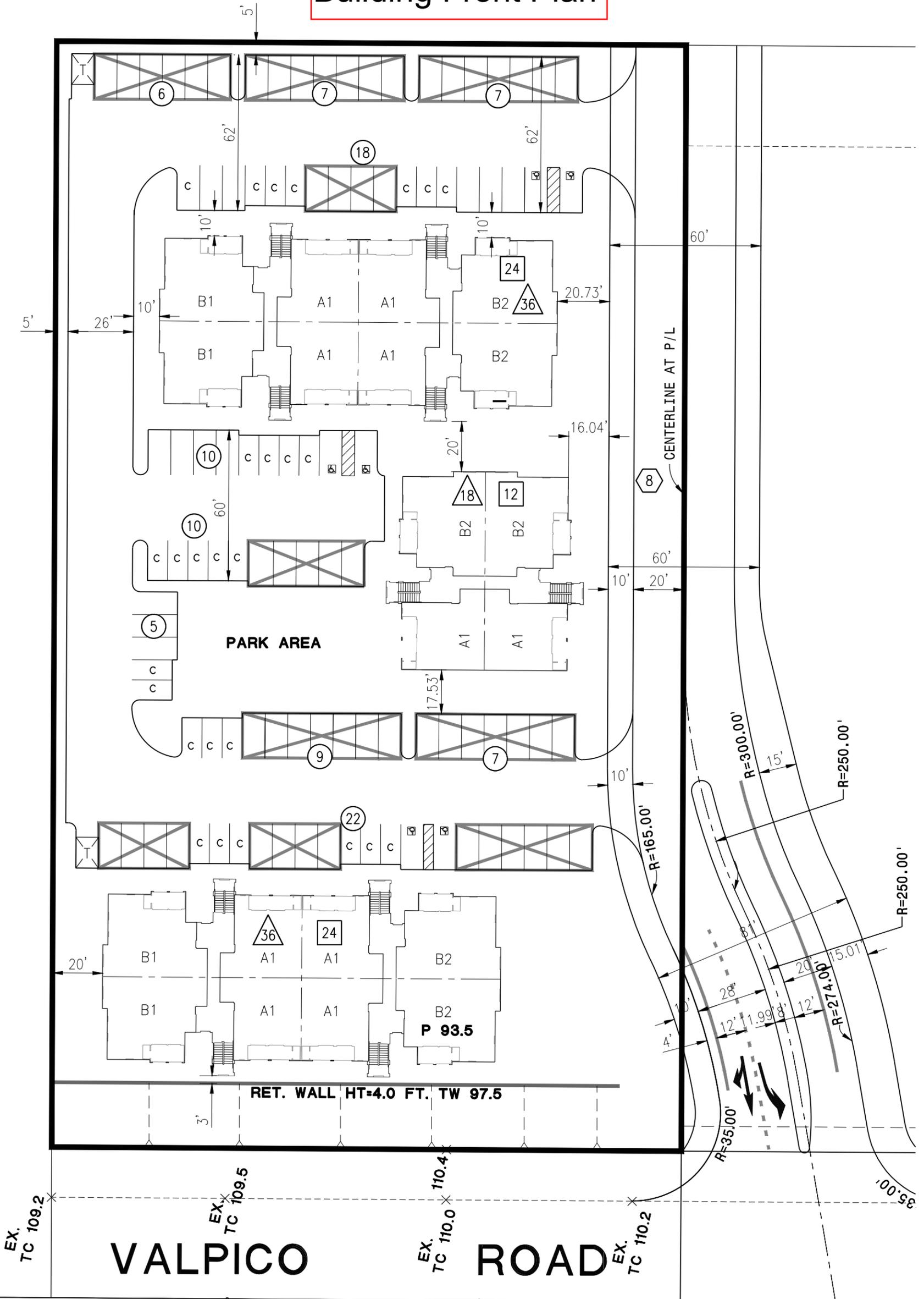
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Appendix D.
Case Study: Alternative Designs for MacDonald
Apartments



ALT 2

Building Front Plan

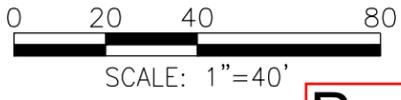


PROPOSED PARKING

- 102 **ONSITE PARKING SPACES**
- 60 COVERED
- 27 OPEN COMPACT
- 15 OPEN STANDARD
- 8 ON STREET PARKING
- 110 TOTAL PARKING SPACES**

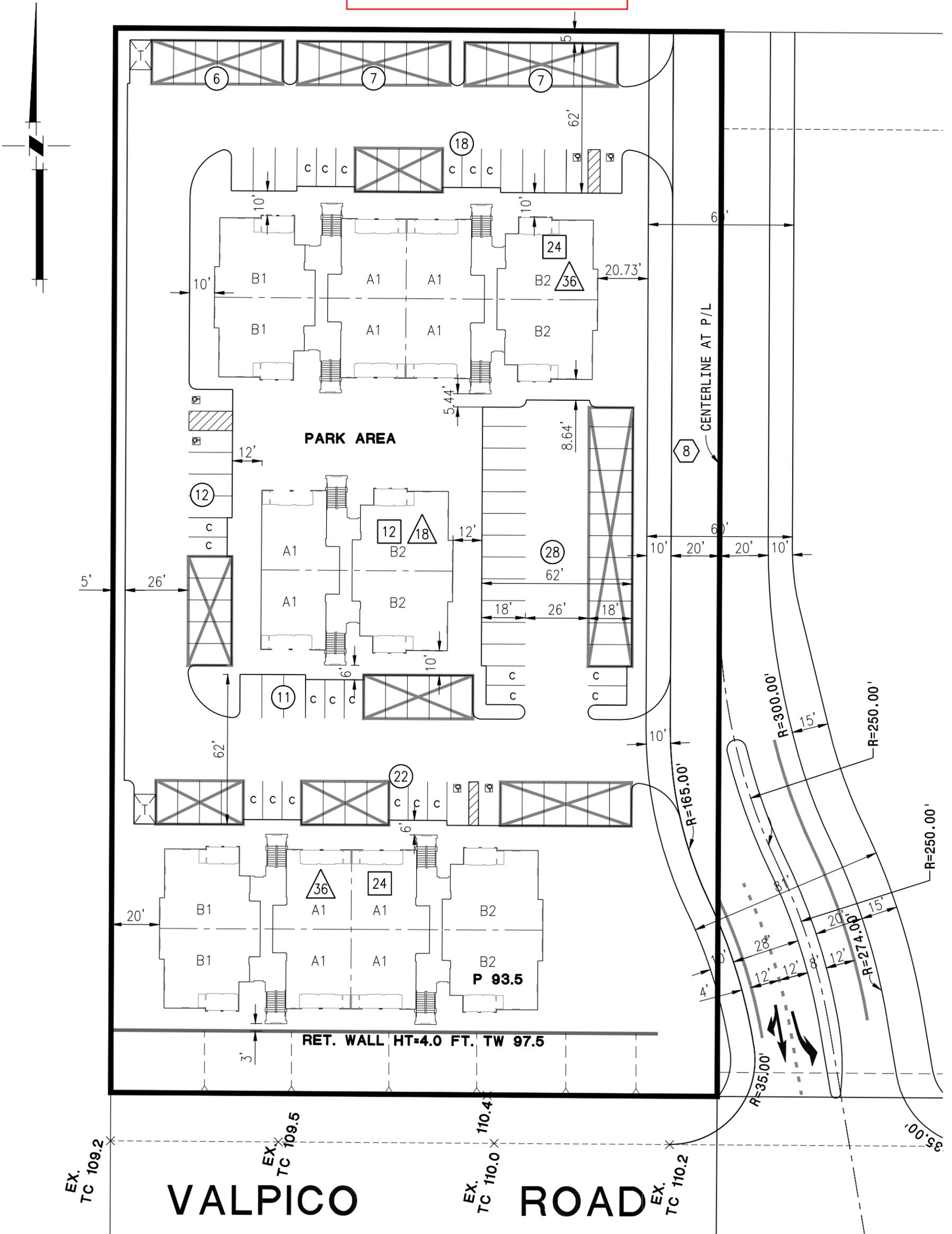
REQUIRED PARKING

- 60 **TOTAL UNITS**
- 90 **TOTAL BEDROOMS**
- 30 + 1 BEDROOM 30 X 1.5 = 45
- 30 2 BEDROOMS 30 X 2 = 60
- 60 / 5 = 12 GUEST
- 117 TOTAL SPACES**



ALT 3

Parking Front Plan



PROPOSED PARKING

- (111) **ONSITE PARKING SPACES**
- 60 COVERED
- 21 OPEN COMPACT
- 30 OPEN STANDARD
- 8 ONSTREET PARKING
- 119 TOTAL PARKING SPACES**

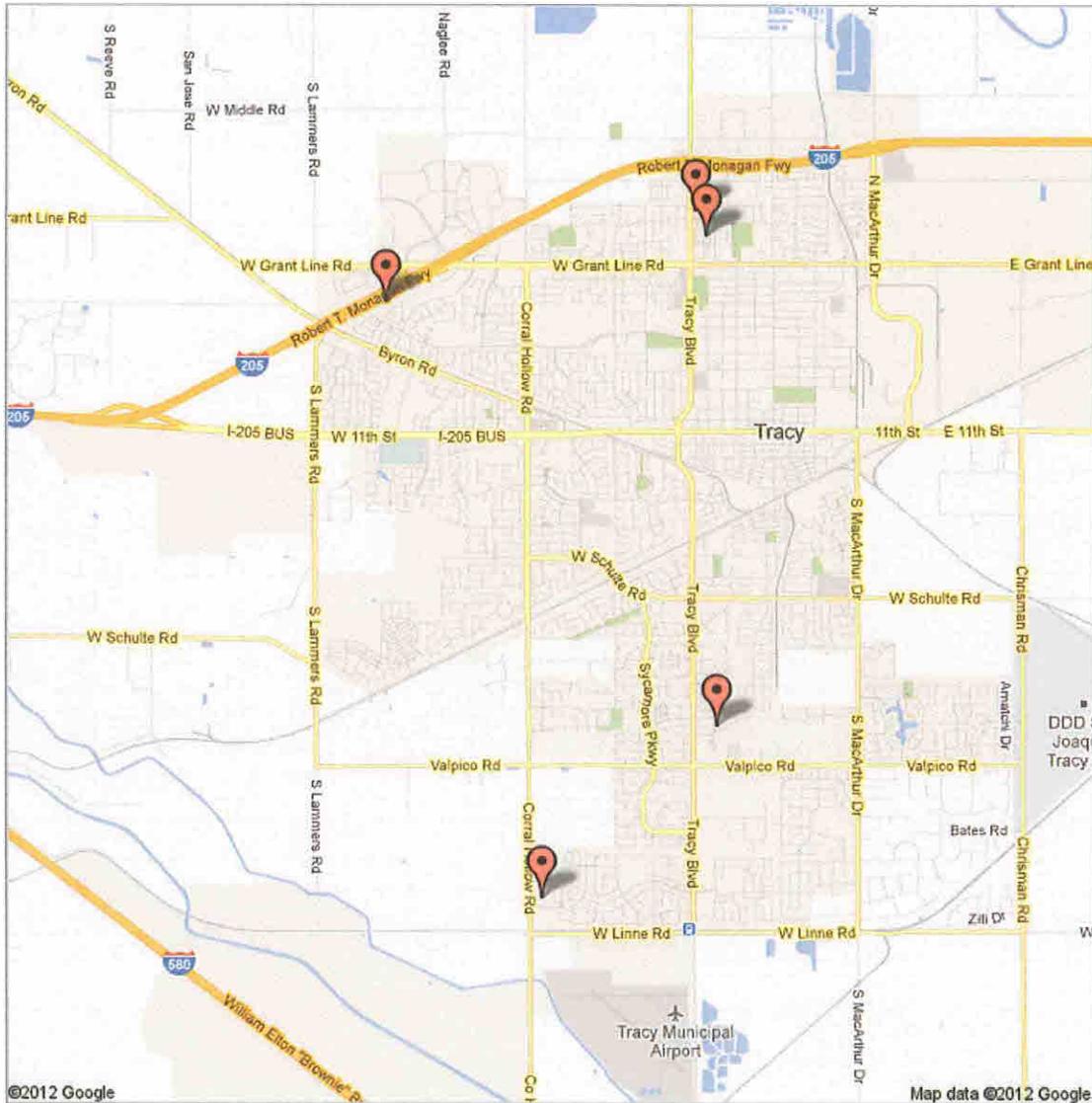
REQUIRED PARKING

- (60) **TOTAL UNITS**
- (90) **TOTAL BEDROOMS**
- 30 + 1 BEDROOM = 45
- 30 X 2 = 60
- 60 / 5 = 12 GUEST
- 117 TOTAL SPACES**

Appendix E.
Site plans for Tracy Apartments Surveyed
(provided separately)



Get Google Maps on your phone
Text the word "GMAPS" to 466453

Tracy Apartment Parking Survey Map

Survey Apartment locations

Unlisted · Open Collaboration · 6 views
Created on May 29 · By *dvemon* · Updated yesterday

-  Waterstone Apartments
1951 West Middlefield Drive
-  Chesapeake Bay
2943 Lowell Avenue
-  Sycamore Village
400 West Central Avenue
-  Tracy Park Apartments
00 North Tracy Boulevard
-  Tracy Garden Apartments
2926 North Tracy Boulevard

1951 W Middlefield Dr
Tracy CA 95377

FASTWeb

Property Profile**Property Information**

Owner(s)	Fairfield Edgewood Station	Parcel #	244-020-32
Property	1951 W Middlefield Dr Tracy, CA 95377	Map Coord	; 462-G6
Mailing Addr	5510 Morehouse Dr #200 San Diego, CA 92121	Census Tract	0052.05
		County	San Joaquin
		Owner Phone	
Legal	LOT 13.		
Lot Number	13	Tract Number	
Block		Subdivision	Edgewood Unit 06

Characteristics

Use	Apartment	Year Built	2006	Sq. Feet	151700
Zoning		Lot Size	6.52 / 284011.2	# of units	156
Bedrooms	264	Bathrooms	267	Fireplace	1
#Rooms		Quality	Average	Heating	
Pool/Spa	Y	Air		Style	
Stories	3	Improvements		Parking	Carport
Flood		Gross Area		Garage Area	
Basement Area					

Attributes

Other

Property Sale Information

Sale Date	08/16/2004	\$/Sq. Ft.		2nd Mtg.	
Sale Price		1st Loan		Prior Sale Amt.	\$1,170,000.00
Doc No.	195249	Loan Type		Prior Sale Dt.	05/20/2004
Doc Type	Grant Deed	Xfer Date	08/31/2004	Prior Doc No.	117463
Seller	Edgewood Station Investors	Lender		Prior Doc Type	Grant Deed

*\$/Sq. Ft. is a calculation of Sales Price divided by Sq. Feet

Tax Information

Imp Value	\$19,208,850.00	Exemption	
Land Value	\$1,295,850.00	Tax Year/Area	2010/004086
Total Value	\$20,504,700.00	Tax Value	\$20,504,700.00
Tax Amount	\$266,997.48	Improved	94%

Information compiled from various sources and is deemed reliable but not guaranteed.

2943 W Lowell Ave
Tracy CA 95377



Property Information

Owner(s)	Tracy Chesapeake Bay Limited Ptp	Parcel #	238-600-28
Property	2943 W Lowell Ave Tracy, CA 95377	Map Coord	; 422-D6
Mailing Addr	7355 N Palm Ave #105 Fresno , CA 93711	Census Tract	0052.06
		County	San Joaquin
		Owner Phone	
Legal	.	Tract Number	
Lot Number		Subdivision	Park Atherton
Block			

Characteristics

Use	Apartment	Year Built	2002	Sq. Feet	223849
Zoning		Lot Size	12.06 / 525333.6	# of units	216
Bedrooms	432	Bathrooms	434	Fireplace	
#Rooms		Quality	Average	Heating	
Pool/Spa	Y	Air		Style	
Stories	3	Improvements		Parking	Carport
Flood		Gross Area	223849	Garage Area	
Basement Area					
Attributes					
Other					
Property Sale Information					
Sale Date		\$/Sq. Ft.		2nd Mtg.	
Sale Price		1st Loan		Prior Sale Amt.	
Doc No.		Loan Type		Prior Sale Dt.	
Doc Type		Xfer Date		Prior Doc No.	
Seller		Lender		Prior Doc Type	
*\$/Sq. Ft. is a calculation of Sales Price divided by Sq. Feet					

Tax Information

Imp Value	\$13,194,000.00	Exemption	
Land Value	\$1,666,100.00	Tax Year/Area	2011/004073
Total Value	\$14,860,100.00	Tax Value	\$14,860,100.00
Tax Amount	\$20,265.24	Improved	89%

Information compiled from various sources and is deemed reliable but not guaranteed.

Sycamore Village

400 W Central Ave
Tracy CA 95376



Property Information

Owner(s)	Sycamore Village Invest	Parcel #	246-120-01
Property	400 W Central Ave	Map Coord	246-12; 462-H4
	Tracy, CA 95376	Census Tract	0052.08
Mailing Addr	1600 S Main St #150	County	San Joaquin
	Walnut Creek , CA 94596	Owner Phone	
Legal	TRACT 1455 LOT 128.		
Lot Number	128	Tract Number	1455
Block		Subdivision	Sycamore Village

Characteristics

Use	Apartment	Year Built	1987	Sq. Feet	258520
Zoning		Lot Size	16.74 / 729194.4	# of units	324
Bedrooms	573	Bathrooms	557	Fireplace	80
#Rooms		Quality	Average	Heating	
Pool/Spa	Y	Air		Style	
Stories	2	Improvements		Parking	Carport
Flood		Gross Area	258520	Garage Area	
Basement Area					
Attributes					
Other					
Property Sale Information					
Sale Date		\$/Sq. Ft.		2nd Mtg.	
Sale Price		1st Loan		Prior Sale Amt.	
Doc No.	39602	Loan Type		Prior Sale Dt.	
Doc Type	Deed (reg)	Xfer Date	06/08/1984	Prior Doc No.	
Seller	Owner Record	Lender		Prior Doc Type	
*\$/Sq. Ft. is a calculation of Sales Price divided by Sq. Feet					

Tax Information

Imp Value	\$15,125,846.00	Exemption	
Land Value	\$4,139,610.00	Tax Year/Area	2011/004073
Total Value	\$19,265,456.00	Tax Value	\$19,265,456.00
Tax Amount	\$215,723.80	Improved	79%

Information compiled from various sources and is deemed reliable but not guaranteed.

Tracy Park

2800 N Tracy Blvd
Tracy CA 95376

FASTWeb
Property Profile

Property Information

Owner(s)	2800 North Tracy Boulevard	Parcel #	214-470-01
Property	2800 N Tracy Blvd	Map Coord	214-47; 422-H5
	Tracy, CA 95376	Census Tract	0053.05
Mailing Addr	11340 W Olympic Blvd #210	County	San Joaquin
	Los Angeles , CA 90064	Owner Phone	
Legal	.	Tract Number	
Lot Number	1	Subdivision	Tracy Blvd Park
Block			

Characteristics

Use	Apartment	Year Built	1987	Sq. Feet	109438
Zoning		Lot Size	6.23 / 271378.8	# of units	132
Bedrooms	224	Bathrooms	292	Fireplace	60
#Rooms		Quality	Average	Heating	
Pool/Spa	Y	Air		Style	
Stories	2	Improvements		Parking	Carport
Flood		Gross Area	109438	Garage Area	
Basement Area					
Attributes					
Other					
Property Sale Information					
Sale Date	10/25/2011	\$/Sq. Ft.		2nd Mtg.	
Sale Price		1st Loan		Prior Sale Amt.	
Doc No.	129680	Loan Type		Prior Sale Dt.	
Doc Type	Grant Deed	Xfer Date	10/25/2011	Prior Doc No.	60783
Seller	Con Am Of Tracy Park Associates	Lender		Prior Doc Type	Deed (reg)
*\$/Sq. Ft. is a calculation of Sales Price divided by Sq. Feet					

Tax Information

Imp Value	\$7,465,493.00	Exemption	
Land Value	\$2,285,355.00	Tax Year/Area	2011/004073
Total Value	\$9,750,848.00	Tax Value	\$9,750,848.00
Tax Amount	\$105,785.36	Improved	77%

Information compiled from various sources and is deemed reliable but not guaranteed.

Tracy Garden Apartments

2926 N Tracy Blvd
Tracy CA 95376



Property Information

Owner(s)	Gamache Daniel S / Gamache Donna L	Parcel #	214-460-01
Property	2926 N Tracy Blvd Tracy, CA 95376	Map Coord	214-46; 422-H5
Mailing Addr	16021 Redondo Dr Tracy , CA 95304	Census Tract	0053.05
		County	San Joaquin
		Owner Phone	
Legal	GATEWAY MANOR LOT 27,28.		
Lot Number	27	Tract Number	
Block		Subdivision	Tracy Garden Farms

Characteristics

Use	Apartment	Year Built	1972	Sq. Feet	36616
Zoning		Lot Size	2.36 / 102801.6	# of units	16
Bedrooms	72	Bathrooms	48	Fireplace	
#Rooms		Quality	Average	Heating	
Pool/Spa	Y	Air		Style	
Stories	2	Improvements		Parking	Carport
Flood		Gross Area	36616	Garage Area	
Basement Area					
Attributes					
Other					
Property Sale Information					
Sale Date		\$/Sq. Ft.	\$56.67	2nd Mtg.	
Sale Price	\$2,075,000.00	1st Loan		Prior Sale Amt.	
Doc No.	70077	Loan Type		Prior Sale Dt.	
Doc Type	Deed (reg)	Xfer Date	08/28/1986	Prior Doc No.	
Seller		Lender		Prior Doc Type	
*\$/Sq. Ft. is a calculation of Sales Price divided by Sq. Feet					

Tax Information

Imp Value	\$2,300,591.00	Exemption	
Land Value	\$784,639.00	Tax Year/Area	2011/004049
Total Value	\$3,085,230.00	Tax Value	\$3,085,230.00
Tax Amount	\$33,555.32	Improved	75%

Information compiled from various sources and is deemed reliable but not guaranteed.