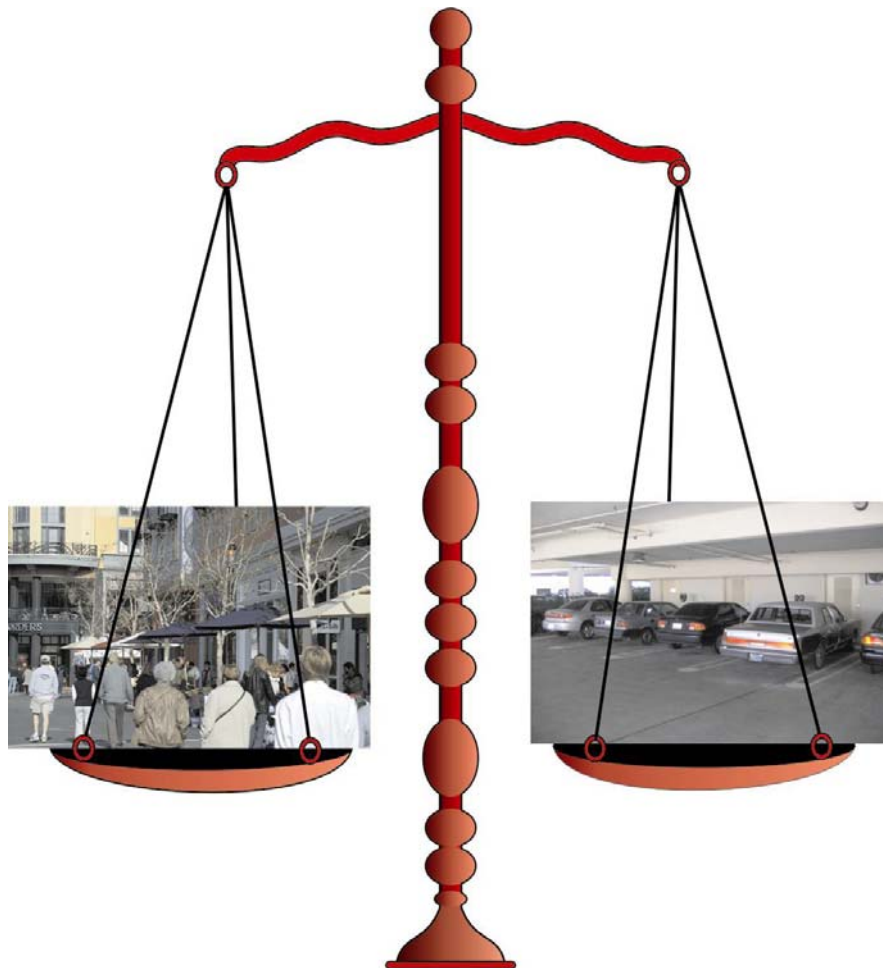


***STRIKING THE RIGHT BALANCE***

**DOWNTOWN REDWOOD CITY  
PARKING REQUIREMENTS  
UPDATE**



***Technical Report***

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# TABLE OF CONTENTS

Introduction and Background Data.....	Page 1
Downtown's Parking Situation.....	Page 5
How Parking in Downtowns is Different than Parking Everywhere Else.....	Page 8
Understanding Parking Requirements in General.....	Page 12
The Proposal .....	Page 17
Appendix 1 Downtown Parking Requirements Area .....	Page 30
Appendix 2 Another Shared Parking Example.....	Page 31
Appendix 3 The Meager Empirical Base of Minimum Parking Requirements.....	Page 33
Appendix 4 Further Analysis of Residential Parking Requirements.....	Page 35
Appendix 5 Blended Commercial Land Use Category Formula.....	Page 38
Appendix 6 Sources.....	Page 42

# INTRODUCTION AND BACKGROUND DATA

## Get ready!

Downtown Redwood City is on the verge of becoming the entertainment capital of the Peninsula. Already, the Fox Theatre brings nationally recognized musical acts to Downtown, such as Tony Bennett, Neil Young, and Itzhak Perlman. Next door, the Little Fox Theatre brings smaller but talented acts to a more intimate setting. Both venues draw people from all over the Bay Area. At the end of this year, Century Theaters will relocate from Bayshore Road to the heart of Downtown, bringing with it between 1,000,000 and 2,000,000 people per year. Across from the Fox Theatre, Courthouse Square (debuting in 2006) will be the most incredible public space in the county, if not the entire region. Downtown is a place where people will want to be.

This will bring many good things to Downtown Redwood City. The sheer number of people will enliven our sidewalks, making them much more interesting and much more comfortable. The whole district will take on a much more festive mood, and will be a wonderful destination for residents and visitors alike. There will be much more “to do” in Redwood City. Much of the added foot traffic will undoubtedly work its way into local shops and restaurants, adding to their prosperity while simultaneously enticing more shops and restaurants to locate here—both of which will cause sales tax revenue for the City to rise. Finally, and perhaps most importantly, the rejuvenated area will act as a source of pride for all Redwood City residents—the heart of their city will once again be a place that is important, prosperous, and *alive*.

Most of these new visitors to Downtown will arrive by automobile, and they will need a place to store that automobile while they are enjoying themselves. There are about as many approaches to downtown parking as there are downtowns. And while many downtown parking programs have positive features, most have very negative features, too—and it is very difficult to get it just right. If there is enough parking, then it is often too much, cluttering the landscape with lifeless asphalt expanses and bunker-like garages. If there isn't enough parking, people get frustrated and it degrades their experience.

Adopting effective new parking requirements will ensure that as Downtown develops it has enough parking, but that it remains compact, walkable, and beautiful.

## The Staff Team

A committee of staff members from Redevelopment, Planning, and Engineering met weekly from June to December of 2004 to explore parking requirements. Parking requirements of neighboring cities were examined. In addition, parking requirements of very progressive cities in other parts of the country were examined, in order to uncover potential strategies. Standard texts,

such as “Parking” by Weant and Levinson and “The Dimensions of Parking” by NPA Parking Consultants Council were reviewed as well. Finally, a broad range of academic research was reviewed, including several papers by Professor Donald Shoup and many other studies by academics and non-profit organizations. A summary of these materials is included in Appendix 6.

## **Working with the Community**

In addition to analyzing the current and projected parking needs in Downtown and researching the breadth of approaches (good and bad) used in other cities, staff also held a series of three interactive public workshops with Downtown stakeholders, two of which discussed parking requirements. The purpose was to help Downtown stakeholders understand the challenges that lie ahead and our options for dealing with them, as well as for staff to learn from those “in the trenches” what are the problems and strengths of our parking supply and what they feel is needed to make it better.

Workshop #1 was held on March 15<sup>th</sup>. During this meeting staff gave a presentation discussing the factors laid out in the introduction to this report—the new patterns of parking use that will likely result upon the opening of the cinema, the high cost of building new parking, the park once nature of Downtown, etc. There was then a lively discussion period where the attendees asked staff questions and voiced some of their concerns.

Workshop #2 was held on March 29<sup>th</sup>. For this session, staff brought a menu of the options available to us to the group and explained the advantages and disadvantages of each. Interactive games were played in which the group plotted areas which they thought were best for employee and customer parking, and what they thought were the best approaches for future parking requirements.

Greater attendance would have been helpful, but in all other respects the workshops were a great success. The stakeholders really seemed to grasp the difficulty of managing parking in a lively, walkable downtown and were very supportive of taking a “just enough” approach to Downtown parking requirements. In addition, staff learned a great amount from those with first-hand knowledge about Downtown’s needs and that knowledge has benefited this plan tremendously.

## **Summary of Recommended Actions**

In order to meet the new demands that will be placed on the Downtown parking system as Downtown grows, while still maintaining an attractive, pedestrian-friendly environment, staff recommends the following changes to Article 30 of the Zoning Ordinance:

### **Recommendation #1: Simplify and Lower Downtown’s Parking Requirements**

Based on many factors, including our current parking situation; the walkable, dense, mixed-use, transit-connected nature of Downtown; academic research; best practices; and city goals such as

the creation of nice places, the production of new housing, and revitalization of Downtown, the following parking requirements are recommended to ensure “just enough” parking for future development in Downtown Redwood City.

**Proposed Redwood City Parking Requirements for Major Land Uses**  
***Downtown Only***

<b>Land Use</b>	<b>Minimum Parking Requirement</b>	<b>Maximum Parking Allowed</b>
Residential	0.75 spaces per studio unit	1.5 spaces per studio unit
	1 space per 1-bedroom unit	2 spaces per 1-bedroom unit
	1.5 spaces per 2-bedroom (or larger) unit	3 spaces per 2-bedroom (or larger) unit
Hotel	0.5 spaces per room (shared) 1 space per room (private)	1 space per room
Commercial	3 spaces per 1,000 s.f. (shared) 6 spaces per 1,000 s.f. (private)	6 spaces per 1,000 s.f.

The proposed zoning amendment is written so that shared parking is encouraged by reducing the amount of required parking by half. Therefore, for commercial and hotel uses, the standard requirement shall be set at the higher numbers listed above (1 space per room for hotels and 6 spaces per 1,000 square feet for commercial) and will be reduced by 50% if that parking is open to the public.

**Recommendation #2: Create an In-Lieu Parking Fee Program**

Staff recommends that an “In-Lieu” parking fee program be established for Downtown Redwood City. This program would allow developments, at the discretion of the Zoning Administrator, to meet their parking requirements by paying a fee instead of building parking spaces on-site. A per-space fee would be established by resolution of the City Council, and the total fee paid by a developer would be calculated by multiplying the per-space fee by the number of required spaces not provided on-site. For example, if a 20,000 square-foot office building was being built with 35 parking spaces on-site, here is how their in-lieu fee would be calculated:

Office Square Footage	20,000
Parking Requirement for Office Space	3 Spaces Per 1,000 Square Feet
Total Parking Requirement	60 Spaces
Parking Provided On-Site	35 Spaces
Deficit	25 Spaces
In-Lieu Fee	\$10,000 per Space
<b>TOTAL FEE</b>	<b>\$250,000 (25 X \$10,000)</b>

The creation of an in-lieu parking fee program would have many benefits for Downtown Redwood City and is recommended by staff. It is recommended that this program be both optional (meaning developers can provide parking on-site if they wish) and discretionary (meaning that the ability to pay the fee is not automatic and that the City can examine each application to determine when an in-lieu fee is appropriate before approving the project). It is also recommended that the initial fee be set below the actual cost of providing new parking

spaces in a new above-grade garage on an existing City parking lot, which is estimated at \$20,000 per space. This is due to the fact that there are many opportunities to create parking spaces below this cost through more efficient configuration of on-street parking on many Downtown streets. The recommended initial fee is \$10,000 per space. After these opportunities (which are estimated to be 50 to 75 spaces) are exhausted, staff will return to the Council to discuss whether an increase to the fee is necessary.

# DOWNTOWN'S PARKING SITUATION

In order to understand what Downtown's parking requirements should look like, we must understand what they need to do. Do we need to build our way out of a parking deficit? Do we have a large surplus of parking spaces that can support future growth? Or do we have a balance between supply and demand which must be maintained?

## The Current Parking Situation

In the Downtown area there is a parking supply of 6,135 spaces, of which 1,229 spaces are City-operated on-street spaces. The City operates another 1,627 spaces in off street-facilities (including the new Jefferson Garage). In addition there are 1,674 spaces operated by other governmental agencies and at least 1,605 operated by private entities.

### City-Controlled Downtown Parking

On-Street Spaces	1,229
Jefferson Avenue Garage (under the cinema)	590
Middlefield Road Lot	204
Marshall Street Garage ground floor	102
Marshall Street Garage upper floors	285
Main Street Lot	151
Library Lot "A"	51
Library Lot "B" (City Hall employee parking area)	139
Winslow Street Lot	53
Perry Street Lot	52
<b>TOTAL</b>	<b>2,856</b>

Currently, this system is underused and is more than enough for our needs. At our peak of activity, which is 1:00 P.M. on weekdays, only 69% of those spaces are occupied. During the dot-com craze, that figure was 78%, which was still far below the 85% that is considered ideal.

### Current Average Downtown Parking Occupancy During Fridays at 1:00 P.M. *Public and Private Parking*

Area	Total Spaces	Number of Spaces Occupied	Occupancy Rate
On-Street, Broadway	87	85	98%
On Street, All	1,229	853	69%
City Lots and Garages	752	469	62%
Other Public Lots and Garages	878	508	58%
Private Lots and Garages	1,605	992	62%
<b>Downtown Totals</b>	<b>4,464</b>	<b>2,822</b>	<b>63%</b>

Although we have a sizable surplus, it doesn't always *feel* like we have a parking surplus. On-street spaces on Broadway, which are the most desirable spaces in the district, are at or near 100% occupancy all day long. This means that people who really want them probably cannot get them. However, right around the corner, within a very comfortable walk, there are usually plenty of empty spaces. Does this mean we have a *shortage* (as the motorist may perceive it) or a *management* problem?

At night, the crunch is amplified. All meters shut down at 6:00 P.M. and time limits are unenforced. On many evenings this makes sense. There is no competition for parking, so there is no need to manage it. However, when there is significant activity at the Fox Theatre (currently our main nighttime activity generator) Broadway and all side streets are filled to capacity. The Winslow Street Lot (behind Pizza and Pipes) is completely filled. Meanwhile, two blocks away, on-street spaces sit empty, and the Marshall Garage sits nearly empty. Due to the lack of parking management, prime spaces near the Fox are more congested during the evening, despite the fact that there are fewer cars in Downtown competing for them.

Why is this? Parking management compels people to distribute themselves away from prime parking areas and encourages parkers to leave quickly, freeing their space for the next person (this is referred to as “turnover”). Market-rate pricing (the adopted parking management strategy for Downtown Redwood City) does this by making people pay for prime parking (which deters employees from sitting there all day) and by luring bargain hunters away from the core with better deals in garages and peripheral areas. Without these mechanisms in place, parking congestion will (and does) occur, no matter how many parking spaces there are.

## **The Parking Situation After the Opening of “On Broadway.”**

After the “On Broadway” retail/cinema project is completed and open for business, demand for parking will rise appreciably. In addition, the nature of that parking demand will change. While there will still be a major spike of activity at the noon hour on weekdays, the new peak of activity for Downtown will be 8:00 P.M. to 9:00 P.M. on Fridays. According to the “On Broadway” EIR, there will be a public parking deficit of 29 spaces at this time.

Since the completion of the EIR, however, the City has entered into an agreement with the County of San Mateo which will allow the general public to use their large garage at Middlefield Road and Bradford Street during Friday nights, Saturdays and Sundays, and some weekday evenings. This agreement has brought an additional 797 spaces into the Downtown public parking supply during the new peak period of activity—exactly when we need them. Adding these spaces to the public supply creates a surplus of 768 spaces during the new Friday evening peak. With a sellout show at the Little Fox, that surplus drops to 688 spaces. Even with simultaneous sellouts at the Little Fox and the main Fox Theatre—a rare occasion—there would still be a surplus of 250 public parking stalls in the Downtown core.



**“Biggest Day” Available Public Parking Spaces During Fridays, By Hour  
Public Parking Only**

Time	Retail/ Cinema EIR Addendum	With County Garage	With Little Fox Sellout	With Big Fox Sellout
10:00 - 11:00am	1,044	1,044	1,044	1,044
11:00 - 12:00pm	929	929	929	929
12:00 - 1:00pm	280	280	280	280
1:00 - 2:00pm	168	168	168	168
2:00 - 3:00pm	232	232	232	232
3:00 - 4:00pm	266	266	266	266
4:00 - 5:00pm	401	401	401	401
5:00 - 6:00pm	427	1,224	1,144	706
6:00 - 7:00pm	539	1,336	1,256	818
7:00 - 8:00pm	175	972	892	454
8:00 - 9:00pm	(29)	768	688	250
9:00 - 10:00pm	182	979	899	461
10:00 - 11:00pm	462	1,259	1,179	741
11:00 - 12:00am	1,204	2,001	1,921	1,483
12:00 - 1:00am	1,539	2,336	2,256	1,818

There will be intense competition for prime parking spaces during this time. Periods that are now relatively quiet in Downtown, namely evenings and weekends, will now be vibrant with activity. Downtown will change from a daytime and office oriented district to a multi-functional 18-hour a day district.

Fortunately, even during the busiest nights of the year, there will be just enough parking spaces to go around. Also, the new parking management ordinance, which was adopted by the City Council in August, 2005 will ensure that the parking supply feels adequate and is used efficiently. **Therefore, the main goal of Downtown parking requirements should be to maintain the current balance between supply and demand.** As Downtown grows, its parking supply must grow with it if we are to maintain enough parking.

# HOW PARKING IN DOWNTOWNS IS DIFFERENT FROM PARKING EVERYWHERE ELSE

It is very clear that the parking challenge before us is significant: keep Downtown adequately parked as it grows without stifling growth or harming the qualities that make Downtown a great place. However, downtowns, by their very nature, possess certain parking advantages. Identifying and taking advantage of these assets is one of the keys to our parking destiny.

## **Downtown: A Park Once Environment**

Assume that you have the afternoon off, and you are going to take care of some errands. First, you might stop by the post office to send a package to someone. Next, let's say that you drop a watch off to get repaired. You then meet a friend for some conversation over coffee, and lastly you pick up a book that you've been meaning to read before you finally head home.

In a non-downtown setting you would probably need a parking space at each one of these destinations. That would mean, for this example, that you would need four parking spaces for your hypothetical afternoon off.

However, in a good downtown, your afternoon would be different. You would only need one parking space for the afternoon. You could easily walk from the post office to the watch repair shop to the coffee shop to the bookstore and back to your car again. Why is this? There are three main characteristics of a good downtown that make it possible.

1. *Compactness*
2. *Mixed-use*
3. *Walkability*

First, downtowns are compact. This means that a given number of activities take up less space since buildings are a little taller and cover more of their site. By bringing everything closer together, the need to drive from one place to another is reduced.

Second, downtowns are mixed-use in nature. This means that offices, shops, restaurants, services, and homes can all be found very close together, sometimes in the same building. Non-downtown areas typically segregate these functions from each other, which causes them to be further from each other than they are in a downtown. This distance is usually beyond a comfortable walk, which most people consider to be  $\frac{1}{4}$  of a mile or less.

Finally, good downtowns are walkable. What does “walkable” mean? Technically you can walk just about anywhere, right? That is true. But to be truly walkable, a place must be inviting to walkers and must provide them with comfort, security, and interest. Sidewalks must not only be present, but they must be sufficiently wide. Street trees and awnings should protect from the sun and rain. Parked cars should protect them from traffic. Storefronts and architecture should offer visual interest. The street pattern should be fine grained and interconnected so that pedestrians can take direct routes to their destination. When all of these factors are in place, a downtown is truly walkable.

Fortunately, Downtown Redwood City has all of these traits and is building on them as we speak. Downtown Redwood City is already a “park once” environment and effective parking requirements will capitalize on this quality and enhance it. This is critical, because park-once environments have many advantages. First, they simply require fewer parking spaces. A given number of shops and restaurants will require fewer parking spaces if they are clustered together in a park-once downtown environment than they would if they were scattered about the landscape in the typical fashion. This saves businesses, property owners, and the City a lot of money because, as we discussed earlier, parking is *expensive*. In addition to cost savings, having fewer parking facilities makes an area much more attractive. Also, with fewer parking lots come fewer driveways cutting across sidewalks, which adds to pedestrian comfort and safety.

Finally, and perhaps most importantly, by encouraging people to park once and walk to all subsequent destinations, we add bodies to the sidewalk. Why is this important? There are several reasons. First, it gives merchants an opportunity for “customer sharing.” If people walk by a business on their way to somewhere else, that business has the opportunity to attract the customer in and sell them something, too. (Mall designers are keenly aware of this phenomenon, and that is why anchor stores are located far from each other, with the smaller shops in between). If the customer parks at each destination and never hits the sidewalk, this opportunity doesn’t exist. Second, it adds safety to the area. A busy sidewalk is a safe sidewalk. Danger (or the perception of danger) lurks when a street is deserted, but in the company of your fellow citizens you can be assured of a good level of security. Lastly, to paraphrase the great urbanist Jane Jacobs, life attracts life, and dullness repels life. People like to be in the presence of other people, and by creating a park once environment we create busy sidewalks which are an attraction in themselves and will encourage more people to visit Downtown.

## **Shared Parking**

In cities there are many different types of land uses, such as offices, cinemas, shops, restaurants, and hotels. Each of these uses tends to have differing peak use periods. Offices, for example, are busiest during the weekdays until 5:00 P.M. or so. Cinemas, by contrast, tend to be inactive in the morning, mellow in the afternoon, and lively at night and on the weekends. Hotels are relatively idle during the day and need a lot of parking over night, while everything else is empty. This all applies to downtowns and non-downtowns alike.

In non-downtown areas, each property acts as a self-contained unit and is usually pretty large. Walking from one property to another isn’t realistic or desirable, because some shopping centers

and office parks are so big that you can't even get out of them within a comfortable walking time. Not only that, but the walk isn't usually pleasant. Harsh parking lots and busy arterial roads await the pedestrian—most people will not voluntarily subject themselves to such conditions. Therefore, each property must be able to park all of its customers and employees on-site. To do this, parking lots must be sized to meet every possible situation, including the biggest day of the year.

Downtowns, however, can be different. Properties are small and close together and connected by a walkable sidewalk network. It is comfortable to walk from place to place. In fact, it can be a pleasure. Many private downtown parking lots, though, still contain menacing signs that say things like “Keep out! Unauthorized vehicles will be towed at owner's expense.” If those signs come down, however, and property owners are willing to share their parking, an amazing opportunity opens up—the number of parking space needed can be reduced.

In *The Next American Metropolis: Ecology, Community, and the American Dream*, architect and city planner Peter Calthorpe explains shared parking this way:

The complementary relationship between land uses in a mixed-use area encourages multi-purpose trips. Thus, a single parking space can serve several land uses. Additionally, peak parking demand for different land uses is often generated at different times if the day, week, or season. This allows joint use of the same parking spaces for several uses.

In *Suburban Nation*, Andres Duany, Elizabeth Plater-Zyberk, and Jeff Speck come to the same conclusions:

Each of the factors that distinguishes (downtowns) from sprawl—on-street parking, mixed-use, transit, pedestrian viability, etc.—also reduces the number of parking spaces that are needed... therefore, it is improper to apply the standard suburban parking requirements to a mixed use neighborhood.

Parking expert Patrick Siegman, of Nelson/Nygaard Consulting, points out that Palo Alto's minimum downtown parking requirement, which is very conventional, is 4 spaces per 1,000 square feet of retail space. However, parking surveys indicate that the actual parking demand experienced in Downtown Palo Alto is 2.36 spaces per 1,000 square feet of retail space. The minimum requirement is more than a space and a half over the observed peak, which shows that Palo Alto has not yet adjusted their parking requirements to take advantage of the efficiencies of their downtown. Mr. Siegman estimates that it would cost \$229 million to bring all of Downtown Palo Alto up to the 4 spaces per 1,000square feet standard.

To illustrate how shared parking really works, let's use an example. Assume that in a fictional downtown there is a theater which sits right next to an office building. The theater has about 1,500 seats, which means at its peak it needs about 500 parking spaces. The office building is 167,000 square feet in size, which means that at its peak it also needs about 500 parking spaces. If these buildings are in non-downtown settings (or if they are in downtowns but have “keep out” signs in their parking lots) then they each need a parking lot which has at least 500 spaces, which creates a total of 1,000 parking spaces between them. But, if they are located in a downtown environment and they agree to share parking, then they may only need 500 spaces **for both buildings**, or only 250 each! This is because of their differing periods of activity. During the day

when the office building is bustling with activity, the theater is closed and empty. At night, all of the office workers go home and the theater doesn't get busy until an hour or two later. Assuming a cost of \$20,000 per parking space, this represents a savings of \$10 million.

This applies at the district level, too. To illustrate this, we have devised another hypothetical downtown and shown how shared parking would apply at the district level in Appendix 2.

So, just like the "park once" aspects of Downtown, shared parking is a tool that can dramatically lower the number of parking spaces needed in a very effective way, adding to the beauty and parking efficiency of the area.

# UNDERSTANDING PARKING REQUIREMENTS IN GENERAL

## Who is Responsible for Providing Parking?

Most people look to their local governments to provide ample downtown parking. Technically, however, the responsibility to provide parking in all areas of the City falls on the private property that generates the need for the parking in the first place.

Article 30, Section 1 of the Redwood City Zoning Ordinance says...

### **30.1 Purpose.**

The purpose of this article is to require that all uses of land in the City which normally terminate or generate vehicle trips provide on that land, or reasonably close, adequate space on which to park and load the vehicles involved, in order that the public streets may be used primarily for the movement of traffic and not the storage of vehicles. (Ord 1130, eff. 7-10-64; Ord 1130.272, eff. 11-15-90)

## How do Parking Requirements Work?

Parking requirements apply to new business and new buildings that are created in cities. They set out a formula for determining the minimum amount of parking a business or building must create before it can open.

Parking requirements usually have a list of land use categories. Each land use category has a different minimum required number of spaces based on how many cars it is expected to bring to the area. Some zoning codes have a small number of land use categories, other have dozens and dozens of land use categories. Redwood City has 29.

Each land use category has a specified unit of measurement that the parking requirement is based on. The unit of measurement is based on a characteristic of the land use. The most common is floor area. Sometimes seats, hospital beds, gas pumps, or other such things are used as the unit of measurement.

Parking requirements also have to deal with geography. To what places do these requirements apply? Some cities, such as Redwood City, have one set of requirements that apply to the entire city. Other cities have different requirements for each zoning district. C-1 might have one set of requirements, while C-2 has another, for example. Other cities have one set of requirements for suburban parts of the city and another for the downtown. In Bellevue, Washington, for example the standard minimum parking requirement for restaurants outside of their downtown is 14 spaces per 1,000 square feet of floor area while in their "Downtown O-1" zone there is no minimum requirement at all.

While most zoning ordinances deal strictly with minimum parking requirements, some also contain maximum parking requirements. This means that a developer cannot create an unlimited number of parking spaces. Some big cities, such as Portland, Oregon and San Francisco use this to encourage people to ride transit. Others, such as Bellevue, Washington and Coral Gables, Florida use this technique to maintain the pedestrian character of their downtowns.

Below is a table showing sample parking requirements from across the country. The table has been compiled to show the various types of land use categories, the units of measurement, and the range of minimums and maximums employed. The requirements listed here are not complete sets of requirements for the cities represented, but rather are parts of those codes which are used here for illustrative purposes.

### Sample Parking Requirements

<b>Land Use Category</b>	<b>Minimum Number of Spaces Required</b>	<b>Maximum Number of Spaces Allowed</b>	<b>City</b>
Animal hospital, boarding, grooming, and training (small animals)	3.3 spaces per 1,000 square feet	No limit	San Luis Obispo, CA (all zones)
Animal hospital, boarding, grooming, and training (large animals)	2 spaces per 1,000 square feet	No limit	San Luis Obispo, CA (all zones)
Churches, synagogues, etc.	0.25 spaces per fixed seat	No limit	San Luis Obispo, CA (all zones)
Florist	5 spaces per 1,000 square feet	No limit	San Luis Obispo, CA (all zones)
Laundry/dry cleaner pick up	3.3 spaces per 1,000 square feet	No limit	San Luis Obispo, CA (all zones)
Retail sales – specialties (shoes, clothing, etc.)	5 spaces per 1,000 square feet	No limit	San Luis Obispo, CA (all zones)
Retail sales – general merchandise (drug, hardware, etc.)	3.3 spaces per 1,000 square feet	No limit	San Luis Obispo, CA (all zones)
Child care centers, etc.	1.6 spaces per 1,000 square feet	No limit	Atlanta (mixed residential and commercial district)
Fraternities and sororities	0.5 spaces per bed plus 5 spaces per 1,000 square feet of non-sleeping area	No limit	Atlanta (mixed residential and commercial district)
Office uses	No minimum	2.5 spaces per 1,000 square feet of floor area	Atlanta (mixed residential and commercial district)
Hotel or residential hotel	No minimum	1 space per guest room	Hillsboro, OR (within 1,300 feet of light rail station)
Retail or service commercial	No minimum	5.1 spaces per 1,000 square feet of floor area	Hillsboro, OR (within 1,300 feet of light rail station)
Senior housing	0.25 spaces per dwelling unit	0.75 spaces per bedroom	Hillsboro, OR (within 1,300 feet of light rail station)
All ground floor uses along Castro Street	No minimum	No limit	Mountain View (Downtown Precise Plan)
Restaurant and retail	3.33 spaces per 1,000 square feet of floor area	No limit	Mountain View (Downtown Precise Plan)
Residential Uses	1 space per dwelling unit	No limit	Overland Park, Kansas (Main Street District)
All non-residential uses	No minimum	No limit	Overland Park, Kansas (Main Street District)

In recent years many cities have adopted in-lieu parking fee programs. This allows developers to fulfill their parking requirements by paying a fee instead of constructing the parking on-site. The city then uses those funds to create public parking somewhere else. This makes it easier to develop small lots and has the advantage of giving the city control of more of the parking supply.

It is interesting to note that there are a few cities that have eliminated downtown minimum requirements altogether, such as Coral Gables, Florida; Eugene, Oregon; Fort Meyers, Florida; Fort Pierce, Florida; Milwaukee, Wisconsin; Olympia, Washington; Portland, Oregon; Stuart, Florida; and Spokane, Washington. In Stuart, Florida the number of downtown businesses increased by 348% within four years of the elimination of downtown parking requirements. Downtown Petaluma's new downtown zoning code features drastically reduced parking requirements, which will then be followed by a complete elimination of those requirements within five years.

## **The Problem With Most Minimum Parking Requirements**

There are two primary problems with most parking requirements that are in effect in most downtowns across the country...

### **Problem #1: Most Minimum Parking Requirements Are Too High For Downtowns**

The first parking ordinances were written to relieve congested Downtown curb parking. Since then they have spread to just about every city in the nation in an attempt to make sure that no one ever parks at the curb. Most parking ordinances seek to make sure that all possible parking needs are accommodated right on the same parcel as the development. Usually, the amount of parking needed during the busiest hour of the busiest day of the year is estimated for various uses and is then required as the minimum parking requirement. It is assumed that this parking will be free and will not be shared with neighboring properties, meaning efficiency is minimized and demand is maximized. In short, most minimum parking requirements are too high for downtowns.

*"The more downtown is broken up and interspersed with parking lots and garages, the duller and deader it becomes... and there is nothing more repellent than a dead downtown."*

-Jane Jacobs

But what's wrong with that? It can't hurt to have too much parking, can it? There are two main problems with this approach when it is applied to downtowns, including Downtown Redwood City:

1. ***Downtown land is expensive, so high parking requirements discourage good downtown development.*** Like most good downtowns, property values are high in Downtown and they're rising. This makes large surface parking lots an unattractive proposition. Anyone who pays top dollar for land wants to have as much of it generating revenue as possible, and surface parking doesn't do that. Above-ground parking structures are much more efficient with land, but they are very expensive. In fact, they tend to cost \$20,000 or more per space. Underground garages are more land-efficient, but they are also the most expensive. The new municipal garage under the retail/cinema project is costing the City about \$30,000 per space. New garages in Palo Alto cost their local government nearly \$51,000



per new space. Due to these extremely high costs, overly-high parking requirements would likely stifle the growth of the Downtown.

2. ***High parking requirements lead to spread out auto-oriented places.*** Downtowns work precisely because they contain so many activities in such a small area. The conventional approach to parking spreads things out to the point where a real downtown just isn't possible. Our favorite downtowns—whether they be the big Loop of Chicago, the medium-sized Savannah, Georgia, or the small downtown Carmel—would not be possible to build under conventional codes. But would we be better off without Carmel, Savannah, or Chicago (or Redwood City, for that matter)? No! These are great places and we must retain them and expand them.

## **Problem #2: Too Many Land Use Categories**

As it became apparent that parking requirements sometimes were too low and sometimes were too high, cities broke them down into more and more land use categories in order to achieve more precision. In 1960 the American Planning Association surveyed the nation's zoning ordinances and found that 30 land use categories were in use. Today, more than 250 land use categories are in effect, ranging from abattoir to zoo. Cities break these requirements down further and further hoping to finally get it right (San Luis Obispo's differing requirements for animal hospitals for large animals and for small animals is a good example).

Why is this a problem? In shopping areas, whether they be traditional downtowns or suburban shopping centers, tenants change and businesses come and go. This is perfectly natural. Many cities have a single requirement for shopping centers to respond to this reality, so that as businesses change a shopping center doesn't fall out of compliance with the parking requirement. Although the same processes affect downtowns, they aren't usually given the same benefit. Downtowns are made up of many small properties which are closely interconnected with the surrounding properties, yet they are treated like suburban properties which are usually large and self-contained.

The problem presented by this paradigm becomes apparent when a business with a higher parking requirement moves into a space formerly occupied by a business with a lower parking requirement (say a shoe store moves into a space formerly occupied by a drug store in San Luis Obispo). This puts planning departments in the uncomfortable position of having to either ignore their code or require the new business to create more parking—very likely resulting in a vacant storefront.

## **How Do Downtown Redwood City's Current Parking Requirements Measure Up?**

The current parking requirements for Downtown Redwood City are too high and have too many land use categories. The Redwood City Zoning Ordinance does not have different requirements for different areas of the city, and so the denser, walkable, mixed-use Downtown has the same parking requirements as less dense auto-oriented areas of the City.

In addition to potentially discouraging development and degrading its attractive, compact nature, excessive minimum parking requirements for Downtown Redwood City may conflict with several local goals, such as:

1. *The policy for the creation of nice places.*
2. *The need to increase the housing supply, especially affordable housing.*
3. *The desire to stimulate new Downtown construction.*

## **How Did This Happen?**

This is nothing for Redwood City to be ashamed of. Most downtown parking requirements in most zoning ordinances around the country are antiquated and based on weak studies or no studies at all. Most are suburban in nature and are not conducive to good downtown-style urban development. Most have far too many land use categories. This is due to a failure of the planning and engineering professions to study and examine the workings and needs of downtowns as they relate to parking. This is because the Parking Generation manual used to create most parking requirements has the following problems:

1. *The number of studies used to calculate the parking generation rates are too small to be statistically significant.*
2. *The studies are based on low density, single-use, transit-less, auto-oriented land uses.*

These problems have only begun to surface in recent years. Professor Donald Shoup of UCLA, considered by many to be the leading parking expert in the country, has written extensively on the subject. An excerpt from his paper *The Trouble With Minimum Parking Requirements* that explains how the current situation came to be is included in Appendix 3.

# THE PROPOSAL

After looking at Redwood City's parking situation, conventional parking requirements from across the country, academic research, innovative new parking requirements, and working with Downtown stakeholders, the staff team has developed a proposal for new parking requirements for Downtown Redwood City.

Despite everyone's best efforts, the parking requirements ultimately adopted will not be flawless. No parking requirements are. Because of the massive amounts of research undertaken and the hard work of the committee it is safe to say that they will be very good, but they cannot be perfect. As discussed earlier, the parking needs of different businesses are very tough to determine, even within very tightly defined categories. To add to the challenge, the same business can generate a different parking need within different cities and contexts. As if it wasn't tricky enough already, the needs of certain businesses change over time, adding another level of complexity.

Because of the difficult nature of parking, it is apparent that we cannot have a false sense of security from our parking requirements. Parking will need to be monitored, and our management of public parking and our requirements for private parking will need to be adjusted periodically to reflect the changing conditions of Downtown and the realities of parking needs and behavior. Nevertheless, we must develop new parking requirements and we can do a good job of it. The following is an attempt to do just that.

*"A parking requirement applied uniformly across a city implicitly discriminates against development in the (downtown), because the burden of complying with the requirement is greater in the (downtown) than almost anywhere else."*

-Michael Manville and Donald Shoup

## **About the Proposal**

### **Area**

The parking requirements recommended here apply to the same geographic area as the upcoming Downtown Precise Plan. The Precise Plan boundaries are shown in the map Appendix 1.

### **Approach: "Just Enough" Parking**

New parking requirements for Downtown must reflect the fact that most visitors will arrive by car while also reflecting the inherent efficiencies of a dense, walkable, mixed-use, transit-connected setting. They must not only reflect those efficiencies, but they must be crafted to act as a tool which can *enhance* these qualities, as well.

The staff team has concluded that Downtown parking requirements should aim to provide *just enough* parking. Staff believes that this is the appropriate approach to parking in Downtown Redwood City for several reasons. First of all, it acknowledges our urban character and our location within the metropolitan region. In outlying suburban and exurban areas, the guiding principle is usually “there’s no such thing as too much parking.” This doesn’t create great places, but it can work due to inexpensive land costs. However, this isn’t the situation in Downtown Redwood City, as has been discussed earlier. The cost of new parking stalls and the impediment to development that excessive minimum requirements create make the suburban approach unsustainable here.

Professor Shoup holds that if cities charge market-rate prices for on-street parking, then they can actually eliminate minimum parking requirements altogether. Redwood City will be instituting market-rate pricing, but the staff team was not comfortable eliminating parking requirements. Instead, the approach was to simplify them and bring them down to the “just enough” amount.

## Land Use Categories

In order to develop appropriate parking requirements, we must first identify the land use categories for which we will create requirements. In developing categories, it was staff’s goal to keep the categories simple and broad. This reflects a few realities:

1. ***There is no precision in parking requirements.*** The true parking needs for any given use can never be determined with precision, especially in a downtown, so there is no need to have dozens of land use categories, each with their own specific requirement, which create a false sense of exactitude.
2. ***Tenants change.*** Parking requirements shouldn’t discourage the natural changes in tenancies that happen in a downtown, especially on the ground floor—and parking requirements certainly shouldn’t result in empty storefronts. Only major remodels or redevelopments should trigger a parking requirement review.

The approach staff has taken is to create three very broad and simple categories that reflect these realities. The categories were designed to account for efficiencies gained through shared parking, and for real differences in the nature of buildings and their use through time. Staff sees no sense in differentiating between restaurant and retail space, for example, because in a downtown these uses use the same types of spaces and will organically change places over time.

### Proposed Land Use Categories for Downtown Parking Requirements

Category:	Specific Uses To Be Included In This Category:
Hotel	Hotels, motels, and other transitory lodging.
Residential	All residential uses.
Commercial	All retail stores and shops, all restaurants, lounges, nightclubs, bars, motion picture theaters, live performance theaters, personal services such as beauty parlors and barber shops, financial services, professional offices, business or administrative offices, and medical or dental offices, churches and other houses of worship, convention centers, exhibition halls, clubs and lodges, and dance halls.

Basically, most Downtown uses have been placed in the “Commercial” category. This category includes uses which will use similar spaces and therefore facilitates the routine changes in tenancies which occur in all downtowns. The “Commercial” category also includes an array of uses which have different peak periods of activity, and therefore have an opportunity to take advantage of shared-parking efficiencies.

Residential and hotel uses are the only uses that were separated out and given their own categories, because they behave so much differently from the other uses. Hotels were separated primarily because their parking needs cannot accurately be assessed based on square footage of floor area, but must be assessed based on the guest room count and because it is uncommon for hotel room space to regularly switch to commercial use or vice-versa. Residential uses also share these traits. In addition, residences are unique in that the occupants of residential units will typically demand private, exclusive-use stalls and therefore cannot contribute to shared parking efficiencies. And unlike restaurants seats or office cubicles, the number of apartment units or hotel rooms cannot change without significant construction activity.

## **Minimums AND Maximums**

It is worth noting that we are focused on creating MINIMUM parking requirements. We are not trying to calculate the *optimum* number of spaces, nor are we trying to calculate how much parking each development “ought” to have. We are trying to calculate the **minimum** number of spaces below which Downtown cannot function. There is a difference. With spaces costing \$20,000 to \$30,000 each or more, we do not want to require one space too many. It is important to note that developers want their projects to succeed financially, and so most will not under-park their facilities. In fact, many developers will voluntarily provide more parking than the minimums recommended here, which is fine.

While it is very unlikely due to high land costs, it is possible that some developers will attempt to overpark their projects. Because of the high per-space cost of going under or above ground, overparked projects would probably consist of large surface lots. While this won’t be common, it is unacceptable. It *is* possible to have too much parking. This would damage the urban design of Downtown by creating greater distances between buildings and by creating harsh, unpleasant landscapes of asphalt. For this reason, a maximum parking requirement should also be set for each use. This is becoming a common practice. It is recommended that the maximum allowed parking should be double the minimum requirements. For example, if the minimum requirement for a particular use is 3 parking spaces per 1,000 square feet of building area, then the maximum allowed parking would be 6 parking spaces per square foot. This allows flexibility without allowing things to get out of hand.

## **Shared Parking Incentive**

A new feature introduced by the proposal is a shared parking incentive. Commercial and hotel projects which allow anyone to park in their parking lots would be given a lower minimum parking requirement. This is because different types of businesses have different peak parking periods, and by sharing parking the overall number of spaces needed in downtown is reduced, as was discussed earlier in this report. Thus, developments which share parking will have a lower

parking requirement. This incentive is intended to discourage situations such as the all-too-common bank parking lot which sits empty at night as restaurant patrons search for parking. Shared parking incentives are not widely used, but some cities, such as San Luis Obsipo, CA and Bellevue, WA use them.

Developers can receive the lower requirement either by paying into the In-Lieu Parking Fund, or by allowing shared parking. Shared parking would be considered to be any spaces that are available for use by the general public during at least one of the following two periods:

1. ***Monday through Friday, 8:00 A.M. to 5:00 P.M.***
2. ***Monday through Friday, 5:00 P.M. to 10:00 P.M. and Saturday through Sunday, 8:00 A.M. to 10:00 P.M.***

Any parking areas that are completely off-limits to the general public and thus do not contribute to shared parking efficiencies would have a higher minimum parking requirement in order that they may meet their peak parking needs entirely on-site.

## **Recommendation #1: Simplify and Lower Downtown's Parking Requirements**

### **Residential Requirements**

Residential parking is a challenge. On one hand, having too-little residential parking creates problems. In particular, when residents don't have enough parking of their own, they overload the on-street parking supply, creating parking congestion. On the other hand, allowing less residential parking has many benefits, including:

1. ***More affordable housing.*** The more parking spaces that are assigned to a residential unit, the higher its cost. This cost is then passed on to the tenant or buyer, whether they need the parking or not. The San Francisco Planning Department estimates that each parking space adds \$20,000 to \$30,000 to the cost of constructing a residential unit in their city. According to the Non-Profit Housing Association of Northern California, "a 1998 statistical study of house and condominium sales in San Francisco revealed that the inclusion of a parking space increased the price of the unit by \$46,000 and \$39,000 (respectively)."
2. ***Better architecture and urban design.*** Another benefit of less residential parking is that it allows better urban design and architecture. Having less parking means that the parking can be tucked out of the way, having less of a negative visual impact. With high parking requirements, the results can often be unattractive, such as "dingbat" buildings (a building on stilts over a parking lot).

Another factor to consider when developing residential parking requirements is that different types of units generate different parking needs. Some of the factors that lower residential parking need are:

1. **Income.** “In 17 studies on vehicle ownership, income was found to be a significant driver of vehicle ownership. This pattern holds throughout the Bay Area. In the 1990 census, households earning between \$20,000 and \$25,000 owned on average only 1.30 vehicles, 26 percent below the region wide average of 1.76 cars. And 28 percent of households earning between \$10,000 and \$15,000 did not own a vehicle at all. By comparison, 10 percent of households region wide lived without a car.” (Quoted from *Rethinking Residential Parking: Myths and Facts* by the Non-Profit Housing Association of Northern California).
2. **Age.** In *Housing Shortage / Parking Surplus*, the Transportation and Land Use Coalition also described the correlation between **age** and vehicle ownership: “In the Bay Area, the vehicle ownership rates of seniors are about 30% lower than the general public. ...the difference is even more marked with seniors aged 75 and over, who own just half as many vehicles as the average household.”
3. **Renting.** “According to 1990 census data, the most recent for which a breakdown is available, 41% of rental households in Santa Clara County own one vehicle and 9% own no vehicle at all – more than double the proportions for owner occupiers. apartment dwellers also own fewer vehicles than those in detached homes – regardless of income.” (Quoted from *Housing Shortage / Parking Surplus* by the Transportation and Land Use Coalition).
4. **Transit.** “Residents of dense, transit-oriented development own fewer vehicles. Residents in light rail corridors use transit as their predominant commute mode more than five times as often as residents countywide. In turn, they are less likely to own a vehicle. A recent study of the factors influencing vehicle ownership in the Bay Area, Los Angeles and Chicago found that ...the densest, most transit accessible areas (show) the lowest vehicle ownership rates.” (Quoted from *Housing Shortage / Parking Surplus* by the Transportation and Land Use Coalition).
5. **Unit size.** Fewer bedrooms=fewer drivers=fewer parking spaces needed. One project in Downtown Palo Alto which offers 260 square foot studio apartments only provides 0.5 spaces per unit, which is only 81% occupied during peak periods.

Considering all of this, it is clear that residential parking requirements should be lowered and broken down by unit type. The following approach is recommended. There should be separate requirements for studio units, 1 bedroom units, and units with 2 or more bedrooms. In addition, discounts should be given for senior housing and affordable housing to reflect the lower car ownership of residents of these types of housing.

As with the other categories, consideration must be given to the fact that units located Downtown will be in very dense, walkable, mixed-use environment that will allow people to live a less car-dependant lifestyle than they can in other parts of Redwood City. In addition, Downtown has the best transit service in the entire city, and that should also be reflected in the requirements.

Here is how other surveyed cities deal with Downtown residential parking:

### Sample Minimum Residential Parking Requirements

Source	Studio	1 Bedroom	2 or more Bedrooms
Los Angeles	1	1	1*
Walnut Creek	1.25	1.5	2.25
Bellevue, WA	0	0	0
Palo Alto	1.35	1.6	2.1
Cathedral City	1.5	1.5	1.5
Mountain View	1.73	2.3	2.3
Current Redwood City Zoning (m/u discount)	2.25 (1)	2.25 (1)	2.25 (1.5)

*\* Los Angeles also requires 1.5 spaces per unit for 3 bedrooms and 2 spaces per unit for 4 bedrooms*

Guest parking is sometimes dealt with in residential parking requirements, typically requiring ¼ of a space per unit. It is recommended that we follow the pattern already established in the Redwood City Zoning Ordinance’s existing mixed-use discount and not require any additional spaces for guest parking. In reality, guests will probably park on the street anyway, which can actually be an asset, as they will add life to the sidewalk as they walk to their destination from their parking space, and the more people there are on the sidewalks the safer and more interesting Downtown will become. The impact on the curbside parking supply will be minimized by the parking management program recently adopted by the City Council, which will keep guests and residents out of public spaces intended for high-turnover retail customers through market-rate pricing.

### Staff Recommendation for Residential Parking Requirements:

#### Studio/Efficiency Apartment

Minimum: 0.75 spaces per dwelling unit

Maximum: 1.5 spaces per dwelling unit

#### 1 Bedroom

Minimum: 1 space per dwelling unit

Maximum: 2 spaces per dwelling unit

#### 2 or More Bedrooms

Minimum: 1.5 spaces per dwelling unit

Maximum: 3.0 spaces per dwelling unit

### Hotel Requirements

Currently, Downtown has no general-use hotels. Due to its central location and proximity to transportation, however, there may be a market for hotel rooms here once the revitalization is further along and the economy has recovered.



Hotels justify their own category for a few reasons. First of all, they truly act differently than commercial and residential uses. Although sometimes difficult, it is possible to estimate the parking demand per square foot of floor area for all other commercial uses, including uses such as restaurants and theaters which often use seat counts to calculate parking demand. No so with hotels. There is really no reliable way to estimate parking other than using the number of guest rooms. Also, it is unlikely that a hotel building would regularly switch to an office building or retail configuration. This means that having a separate parking requirement would not impede natural changes in tenancies.

Based on suburban conditions, ITE states that the average peak parking generation rate for hotels is 0.89 spaces per guest room, in addition to any parking required for conference facilities, restaurants, etc. Several factors must be kept in mind. First, hotels have dramatically different peaks than many other uses (particularly office and retail), so they offer excellent opportunities for shared parking. The peak use of hotel parking is overnight, when most other uses are idle. Meanwhile, while other uses are active during the day, hotel patrons are out and about and their parking is 60% to 70% unoccupied. These shared parking opportunities can be maximized either by providing such parking in City-operated garages or by keeping private lots open for general public use.

In addition, Redwood City’s transit connections, primarily Caltrain, also serve as a factor which allows us to require less parking for Downtown hotels than we might for hotels in other areas. Caltrain connects directly to SFO, and a portion of hotel guests will arrive in Downtown Redwood City via this connection—without a car. Shared parking principles and this transit connection justify setting the requirement below the current city-wide standard of 1 spacer per guest room and below the ITE rate (based on suburban conditions with no transit, density, or mixed use) of 0.89 spaces per guest room.

Here is how some other surveyed materials deal with hotel parking:

**Sample Minimum Parking Requirements for Hotels**

<b>Source</b>	<b>Stalls per guest room</b>
ULI Shared Parking Handbook	1.0
“Parking” by Weant and Levinson	1.2
ITE Average Parking Generation Rate	0.89
Bellevue, WA Zoning Ordinance	0.5
Palo Alto Zoning Ordinance	0.9
Current Redwood City Zoning	1.0

It is recommended that we adopt 0.5 spaces per guest room as Downtown’s minimum parking requirement for hotels. Any restaurants, convention halls, or other commercial space in a proposed hotel should be separated out and its parking requirement calculated independently based on commercial requirements.

This rate of 0.5 spaces per guest room should only be permitted, however, for hotel developments that contribute to shared parking efficiencies. This can be accomplished either by

meeting the parking requirement by paying into the In-Lieu Parking Fund, or by allowing shared parking. Shared parking would be considered to be any spaces that are available for use by the general public during at least one of the following two periods:

1. *Monday through Friday, 8:00 A.M. to 5:00 P.M.*
2. *Monday through Friday, 5:00 P.M. to 10:00 P.M. and Saturday through Sunday, 8:00 A.M. to 10:00 P.M.*

Any parking areas that are completely off-limits to the general public and thus do not contribute to shared parking efficiencies should have a higher minimum requirement of 1 parking space per guest room in order that they may meet their peak parking needs entirely on-site.

#### **Staff Recommendation for Hotel Parking Requirements:**

Minimum (shared parking):	0.5 spaces per guest room
Minimum (closed to the public):	1 space per guest room
Maximum:	1 space per guest room

Any restaurants, convention halls, or other such space in a proposed hotel should be separated out and its parking requirement calculated independently based on commercial requirements.

### **Commercial Requirements**

Because this category includes everything but the kitchen sink, it is the trickiest. At the same time, because of the differing peaks of all of the uses within this category, it also offers the greatest opportunities to exploit the efficiencies of shared parking.

A formula was developed to determine the appropriate commercial parking requirement for Downtown. This formula generally works as follows:

- Step 1: Take the amount of expected new development over the life of the Precise Plan.
- Step 2: Apply standard parking generation rates to this development to anticipate the maximum number of parking spaces required to support it.
- Step 3: Plug this information into the Urban Land Institute's shared parking formula to determine the maximum number of parking spaces required by new Downtown development at any given time if parking is shared.

The entire formula is shown in Appendix 5. The resulting number from the formula was 4.85 parking spaces per 1,000 square feet of floor area. This is the maximum amount of parking needed for anticipated new development at the peak period of activity. This number does not take into account Caltrain and SamTrans, nor the "park once" nature of Downtown (mixed use, density, and walkability). As we learned, these all lower the number of parking spaces needed compared to suburban settings.

Staff feels that 3 spaces per 1,000 is a very reasonable requirement for projects with shared parking. This would give approximately 38% reduction for density, mixed-use, walkability, and transit, which is very sound. This should certainly be “just enough” parking for future commercial uses in Downtown Redwood City.

This rate of 3 spaces per 1,000 square feet should only be permitted, however, for developments that contribute to shared parking efficiencies. As with hotels, this can be accomplished either by meeting the parking requirement by paying into the In-Lieu Parking Fund, or by allowing shared parking. Shared parking would be considered to be any spaces that are available for use by the general public during at least one of the following two periods:

1. ***Monday through Friday, 8:00 A.M. to 5:00 P.M.***
2. ***Monday through Friday, 5:00 P.M. to 10:00 P.M. and Saturday through Sunday, 8:00 A.M. to 10:00 P.M.***

Any parking areas that are completely off-limits to the general public and thus do not contribute to shared parking efficiencies should have a higher minimum requirement of 6 parking spaces per 1,000 square feet in order that they may meet their peak parking needs entirely on-site. This stems from the result of the above formula before Step 3 (shared parking) was factored in: 5.95 spaces per 1,000 square feet.

**Staff Recommendation for Commercial Parking Requirements:**

Minimum (shared parking):	3 spaces per 1,000 square feet
Minimum (closed to the public):	6 spaces per 1,000 square feet
Maximum:	6 spaces per 1,000 square feet

**Recommendation #2: Create an In-Lieu Parking Fee Program**

An in-lieu parking fee program allows a developer or a business to fulfill his or her on-site parking requirement by paying a fee for each stall which he or she does not physically provide on the site of the development. The fees go into an account which will subsequently be used to construct, or otherwise make available, public parking facilities.

Many cities have such a program, including the Bay Area cities of Palo Alto, San Carlos, Berkeley, Walnut Creek, Concord, and Mountain View.

An in-lieu parking fee program helps to take advantage of these shared parking efficiencies and the “park once” nature of Downtown (discussed earlier), and is thus a valuable tool for Redwood City to have available as our Downtown continues to develop and grow.

Professor Shoup conducted a survey of 46 cities with in-lieu programs and found that there are many advantages to having a parking in-lieu fee program. Some of these advantages include the following:

1. ***An Option.*** In-lieu fees give developers an alternative to meeting parking requirements on sites where providing all the required spaces would be difficult or extremely expensive, such as small lots, irregularly shaped lots, or lots where vehicular access would be undesirable, such as on Broadway. This may act as a stimulus for development.
2. ***Maximize Shared Parking.*** Public parking spaces allow shared use among different sites whose peak parking demands occur at different times. Shared public parking is more efficient than single use private parking because fewer spaces are needed to meet the total peak parking demand. Parking that is shared among different establishments also allows motorists to park once and visit multiple sites on foot.
3. ***Better Urban Design.*** Cities can put public parking lots and structures where they do not deter vehicle and pedestrian circulation. Less on-site parking allows continuous store fronts without dead gaps for adjacent surface parking lots. To improve the streetscape further, some cities dedicate the first floor of public parking structures to retail use. Developers can undertake infill projects without assembling large sites to accommodate on-site parking, and architects have greater freedom to design better buildings in a more pedestrian-friendly environment.
4. ***Historic Preservation.*** The in-lieu policy makes it easier to preserve and use historic buildings and rehabilitate historic areas by allowing for alternative locations of parking garages.
5. ***More people on the sidewalks.*** When a development's parking is provided in a city garage via in-lieu parking, they will park away from their destination and must walk to get there. This puts people on the sidewalks, which adds to the liveliness and safety of the sidewalks and provides opportunities for customer sharing.
6. ***The City Controls the Parking.*** When the parking is built by the city through the in-lieu program, the City can manage it with market rate-prices for maximum effectiveness and can also keep the revenue, which can be used for Downtown improvements.

According to Shoup, “officials in all of the surveyed cities judged in-lieu fees as successful, and they reported that the fees had become a form of administrative relief for developers who do not want to provide the required parking spaces.”

Staff recommends the creation of an in-lieu parking fee program for Downtown Redwood City.

## **In Lieu Eligibility**

In terms of deciding when to allow developers to use this program, there are three basic approaches that we could take:

1. **Optional.** The first method would be to allow the developer to decide if he/she wants to take advantage of the program. If they want to pay the fee, they are allowed to automatically. If they want to park on-site, they may.
2. **Discretionary.** The second alternative is to retain discretionary authority over the program. Interested developers would then apply for the program and would have to demonstrate that it is excessively difficult to construct the parking on-site and that allowing them to pay the fee would be a benefit to the City. If implemented, this approach is used in tandem with the optional approach.
3. **Mandatory.** The third option would be to actually *require* that the fee be paid and *prohibit* the parking from being provided on site. This is used by some cities, such as Carmel, who do not want private parking lots and garages to proliferate in their downtowns.

All of these systems are legal and in current use in many cities—which one we choose is up to us, depending on our goals. It is recommended that this program be both optional (meaning developers can provide parking on-site if they wish) and discretionary (meaning that the ability to pay the fee is not automatic and that the City can examine each application to pay into the fee for its own merits before approving the project). While many developers will chose to apply for the in-lieu program, some developers may prefer to provide their parking on-site. As long as it is done with a good design, on-site should be allowed. In some circumstances in-lieu parking may not make sense, however, and the City should retain the right to deny applications if this is the case.

## Setting the In-Lieu Fee

There are two ways to set in-lieu fees:

1. **Real Cost**
2. **Reduced Fee**

With the Real Cost approach, the in-lieu fee is based on the actual costs of providing the parking spaces in a new public facility. The assumption is usually that the City will construct a parking garage, so the cost of land and the cost of the construction of the new garage are divided by the number of new stalls that would be gained in the new facility, and the fee is based on the resulting figure. The advantage of this approach is that the City does not have to pay for the new garage, but rather it is completely paid for by the development that generates the need for it. Palo Alto uses this method for setting their in-lieu fee, which is \$50,994 per space.

With the Reduced Fee approach, cities set the price of the in-lieu fee *below* the actual cost of building the new structure. The difference is made up from other sources such as parking assessment district or the future revenue generated by the new garage. The advantage to this method is that it could be a major stimulus to development and business creation by lowering the costs of providing parking. Palm Springs uses this method, and their fee is only \$4,000 per space. According Professor Shoup in *The High Cost of Free Parking*, “the lower in-lieu fees have stimulated economic activity and have led to the opening of many new restaurants on Palm

Canyon Drive, (Palm Springs') main drag." Concord, California also uses a reduced fee, and charges developers \$2,500 per space.

It is recommended that the initial fee be set below the actual cost of providing new parking spaces in a new above-grade garage on an existing City parking lot, which is estimated at \$20,000 per space. This is due to the fact that there are many opportunities to create parking spaces below this cost through more efficient configuration of on-street parking on many Downtown streets. The recommended initial fee is \$10,000 per space. This fee will be very attractive to developers and investors, but it is still greater than the City's true cost of reconfiguring on-street parking, and thus should be a very good stimulus to development in the early stages of the Downtown revival.

After these inexpensive parking creation opportunities (which are estimated to be 50 to 75 spaces) are exhausted, staff will return to the Council to discuss whether an increase to the fee is necessary. The advantages of a Reduced Fee as discussed above may compel the Council to retain the below-cost fee. If this is done, then when the time to construct a new parking garage comes, the difference can be made up from revenue bonds which are repaid by revenue from the new parking facility. Or, a Real Cost fee may be adopted at that time, depending on the preferences of the Council and the Downtown development climate at the time.

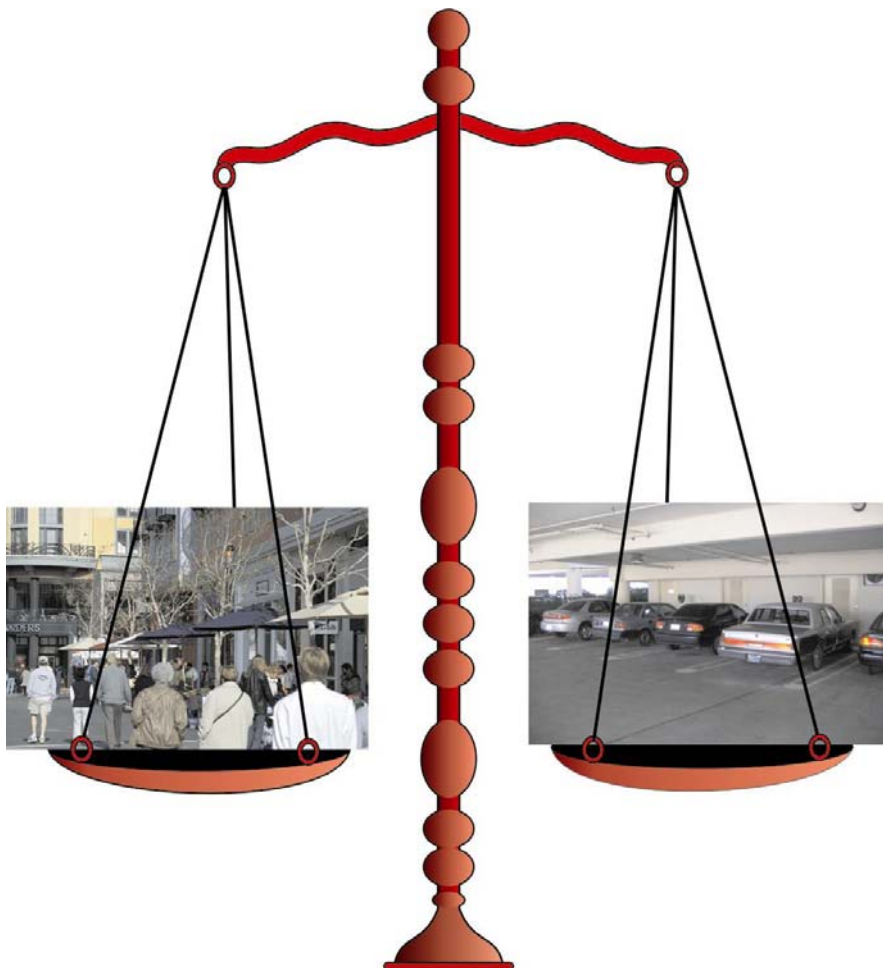
**Staff Recommendation for the Creation of an In-Lieu Parking Fee Program:**

<b>Applicability:</b>	Optional / Discretionary
<b>Initial Fee:</b>	\$10,000 per space

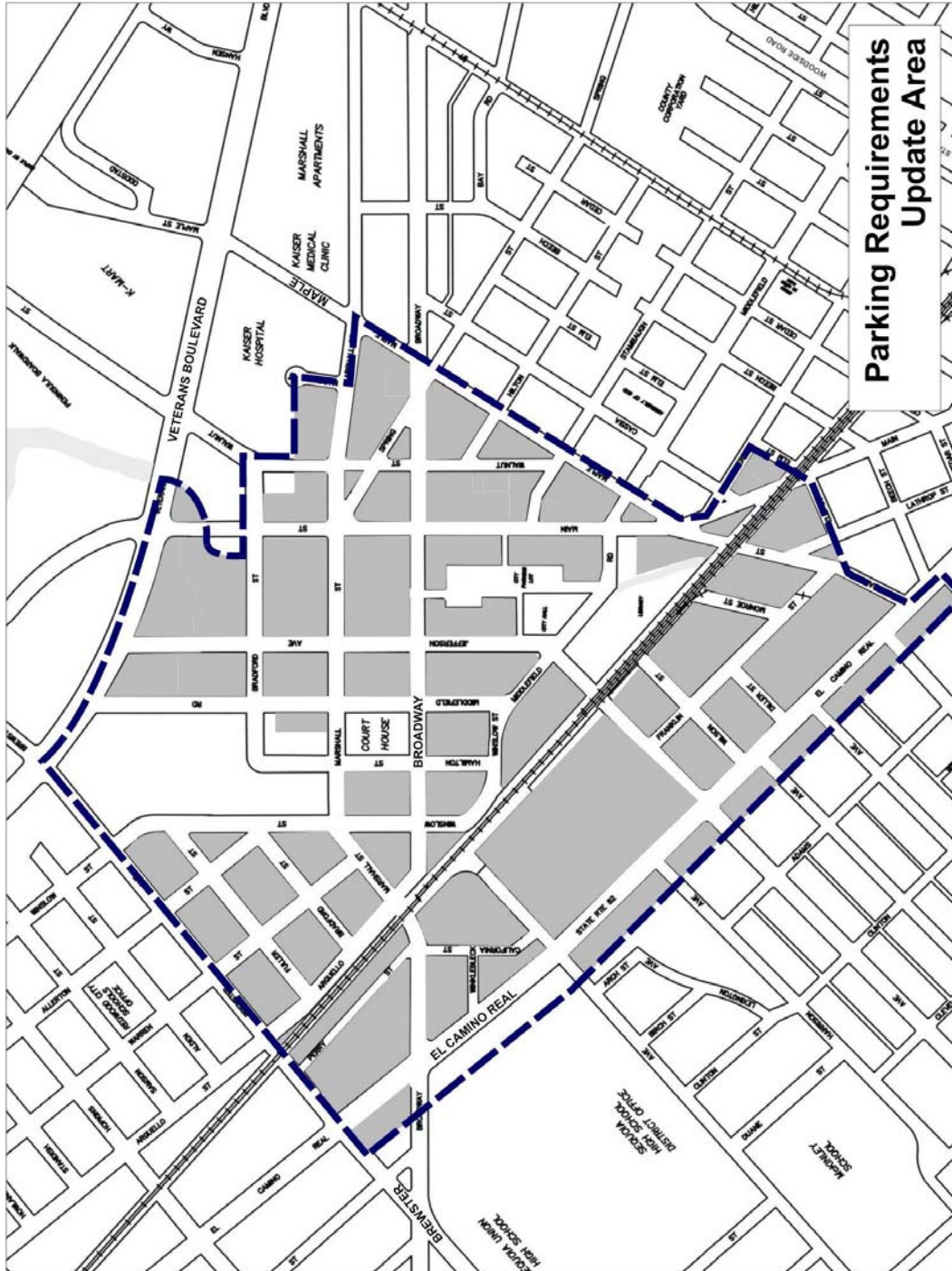
# CONCLUSION

By tailoring new parking requirements to the unique nature of Downtown Redwood City's land use patterns, there is a great opportunity to add to the dynamism of Downtown while still maintaining an adequate level of parking. The parking requirements recommended here represent an attempt to strike balance between too much parking and not enough; between accommodating motorists without encouraging more driving; and between business-friendliness and a comfortable public realm.

If adopted, these new requirements should ensure that as Downtown grows, so does its parking supply. They should also help Downtown retain and enhance the features that make it attractive: Its walkability, its streetlife, and its diversity of things to do in a conveniently small area.



# APPENDIX 1 DOWNTOWN PARKING REQUIREMENTS AREA



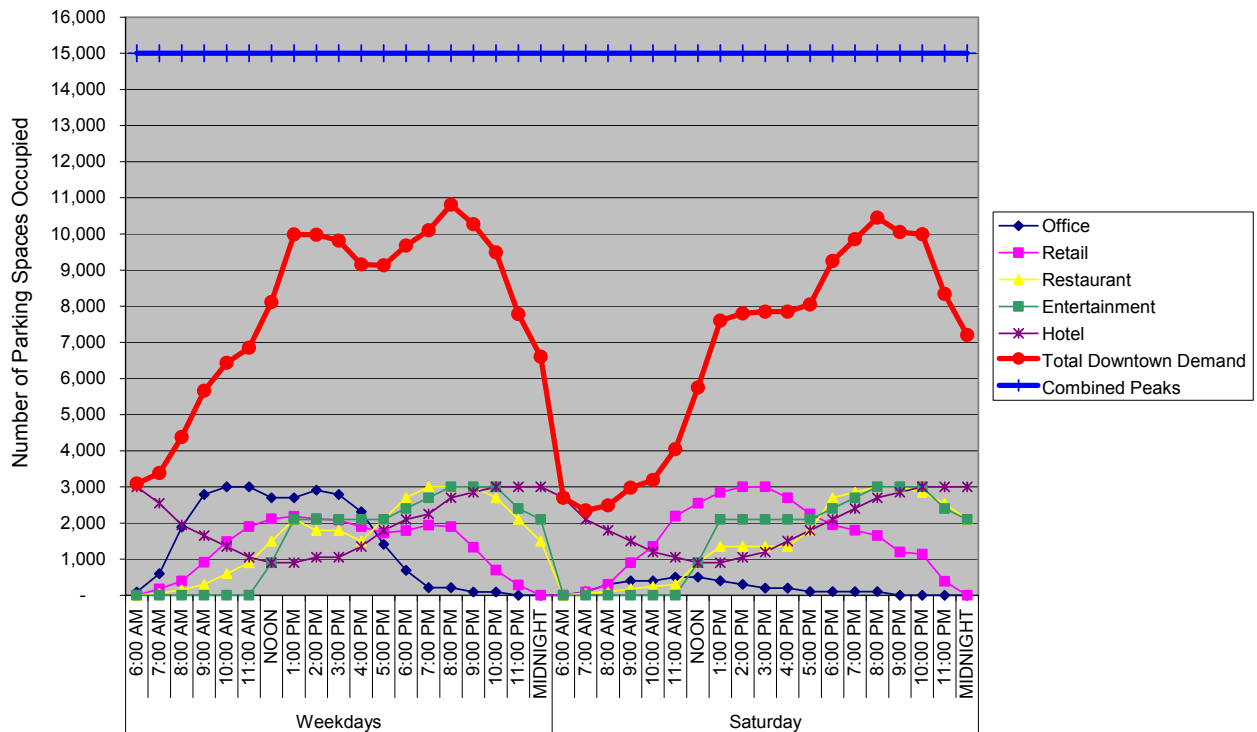


# APPENDIX 2 ANOTHER SHARED PARKING EXAMPLE

Shared parking applies at the district level, too. To illustrate this, we will devise another hypothetical downtown. This downtown has 1 million square feet of office space, 545,500 square feet of retail space, 150,000 square feet of restaurants, theaters with a total of 10,000 seats, and hotels with a total of 3,000 rooms. This means that at their peak, each of these land use categories needs 3,000 parking spaces.

The chart below, based on mixed-use parking standards developed by the Urban Land Institute, demonstrates the efficiencies of shared parking in our hypothetical downtown. The thin lines at the bottom show the parking needs of different uses throughout the day and week. Note that each use peaks at 3,000 spaces—but at different times. The thick red line in the middle of the chart represents the total number of parking spaces occupied at each time slot. The straight thick blue line at the top represents the peak number of stalls ever needed by each use, combined. In a suburban setting, the blue line at the top would be the number of stalls necessary, due to a lack of shared parking, walkability, and density. However, due the shared parking efficiencies of a downtown, *the actual number of spaces occupied at any given time (red) never comes close to the theoretical need (blue).*

The “Shared Parking” Efficiencies of Downtowns



If parking is shared, a maximum of 10,808 parking spaces are needed at any one given time in our hypothetical downtown. If parking is not shared, due to a suburban setting or “Keep Out” signs, then the number of parking spaces needed is 15,000. This represents a difference of 4,192 spaces or \$83,840,000.

# APPENDIX 3

## THE MEAGER EMPIRICAL BASE OF MINIMUM PARKING REQUIREMENTS

The problems with parking requirements have only begun to surface in recent years. Donald Shoup has written extensively on the subject. The following excerpt from his paper *The Trouble With Minimum Parking Requirements* explains how the current situation came to be.

Practicing planners use simple empirical methods to set minimum parking requirements. In one of the few attempts to explain how parking requirements are set, Robert Weant and Herbert Levinson (1990, 35, 37) say:

Most local governments, through their zoning ordinances, have a parking supply policy that requires land uses to provide sufficient off-street parking space to allow easy, convenient access to activities while maintaining free traffic flow. The objective is to provide enough parking space to accommodate recurrent peak parking demands... For the purpose of zoning ordinance applications, parking demand is defined as the accumulation of vehicles parked at a given time as the result of activity at a given site.

In effect, planners count the cars parked at existing land uses, identify the highest number counted as peak demand (without consideration of price), and then require developers to supply at least that many parking spaces (without consideration of cost). Planning for parking is planning without prices.

The only source of data that systematically relates parking demand to land use is *Parking Generation*, published by the Institute of Transportation Engineers (ITE). The ITE (1987) reports the "parking generation rate" for 64 different land uses, from airports to warehouses. The parking generation rate for each land use is defined as the average peak parking demand observed in case studies:

a vast majority of the data... is derived from suburban developments with little or no significant transit ridership .... The ideal site for obtaining reliable parking generation data would ... contain ample, convenient parking facilities for the exclusive use of the traffic generated by the site .... The objective of the survey is to count the number of vehicles parked at the time of peak parking demand (ITE 1987, vii, xv; emphasis added).

Half the reported parking generation rates are based on four or fewer case studies, and 22 are based on a single case study. The case studies do not refer to parking prices, but most parking must be free because the 1990 Nationwide Personal Transportation Survey found that parking is free for 99 percent of all automobile trips in the United States (Shoup 1995). The ITE parking generation rates therefore measure the peak demand for free parking observed in a few case studies conducted in suburban locations with little or no public transit.

Planners often set minimum parking requirements higher than the ITE parking generation rates. For example, a survey of 33 cities in nine southeastern states found that parking requirements averaged 3.7 spaces per 1,000 square feet of office space, or 32 percent higher than the ITE parking generation rate of 2.79 spaces per 1,000 square feet (Polanis and Price 1991, 32). Similarly, a survey of 117 cities in California found that parking requirements averaged 3.8 spaces per 1,000 square feet of office space, or 36 percent higher than the ITE parking generation rate (Shoup 1995, 18).

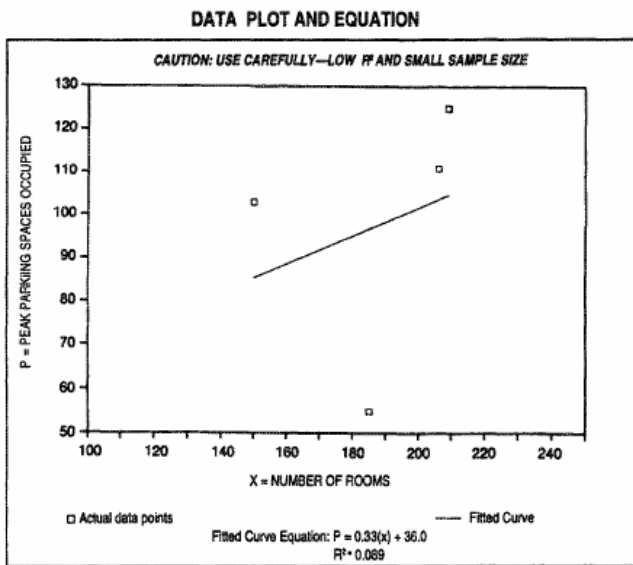
The generous parking capacity required by planners often goes unused. Studying office buildings in ten California cities, Richard Willson (1995) found that the peak parking demand averaged only 56 percent of capacity. Gruen Associates (1986) found that peak parking demand at nine suburban office parks near Philadelphia and San Francisco averaged only 47 percent of capacity, and that no office park had a peak parking demand greater than 60 percent of capacity. The Urban Land Institute (1982, 12) found that the recommended parking requirements for shopping centers provide a surplus of parking spaces for all but nineteen hours a year, and leave at least half of all spaces vacant for more than 40 percent of the time a shopping center is open for business.

Given the way planners predict parking demand, unused parking spaces are unsurprising. For example, an office building may first serve as a corporate headquarters with 300-square-foot offices for executives, and then be used by a telemarketing firm with 30-square-foot cubicles for telephone sales personnel. Fitting more employees into a building by reducing the office space

per person can greatly increase parking demand. Surveying 57 suburban employment centers in the United States, Robert Cervero (1988, 26) found that building occupancies ranged from 0.5 to 6.0 persons per 1,000 square feet, with a standard deviation almost as large as the mean. Given this 12-fold range of possible building occupancy, how can urban planners predict the number of parking spaces any office building will need throughout its economic life?

**PARKING GENERATION RATES**

Average Rate	Range of Rates	Standard Deviation	Number of Studies	Average Number of Rooms
0.52	0.29-0.68	*	4	188



[The chart to the left] shows a typical page from *Parking Generation* (ITE 1987, 44). It reports all the case studies of peak parking demand observed at non-convention hotels. Given the variation in observed peak parking demand (ranging from 0.29 to 0.68 parking spaces per room), what is an urban planner to say when asked to set the minimum parking requirement

for a hotel? The average peak parking demand is 0.52 spaces per room. To be safe, why not require 0.68 spaces per room, the highest demand observed? Maybe 0.75 spaces per room will appear less arbitrary. One space per room also looks plausible. In a recent survey, the Planning Advisory Service (1991, 16) reports eight cities' parking requirements for hotels: two cities require 0.75 spaces per room, two require 0.9 spaces per room, and four require one space per room. In setting minimum parking requirements, planners seem to play it safe.

To help planners set parking requirements, the Planning Advisory Service (1964, 1971, 1991) has published three national surveys of parking requirements in zoning ordinances. These surveys tell planners only what other cities have required, not what they ought to require. According to the second survey (PAS 1971, 1):

The implicit assumption is that other areas must know what they are doing (the ordinances were adopted, after all) and so it is a relatively safe bet to adopt a parking standard "dosed to the average." This may simply result in a repetition of someone else's mistakes. Nevertheless, the planner who needs to present a numerical standard by the next planning commission meeting can't answer the original question by saying, "I don't really know."

# APPENDIX 4

## FURTHER ANALYSIS OF RESIDENTIAL PARKING REQUIREMENTS

There is much research being conducted on the effect of parking requirements on housing affordability and the ways to lower residential parking requirements.

In the report *Housing Shortage / Parking Surplus* by the Transportation and Land Use Coalition, the high cost of excessive parking requirements is described:

Excess parking comes at a very high cost: First, the cost of the land combined with paving or construction of the parking typically exceeds \$20,000 per space, increasing rents and residential prices. Second, by increasing the land needed for each housing unit, excess parking often reduces the number of potential housing units per acre. In other words, parking squeezes out housing. Third, the parking costs and lower number of units reduce the financial feasibility of new housing construction and increase the subsidy required for affordable housing. Finally, the land used to comply with high parking requirements often reduces the potential for amenities, such as parks or ground-floor retail that can improve the neighborhood.

A benefit of providing less residential parking is that it allows better urban design and architecture. Having less parking means that the parking can be tucked out of the way, having less of an impact. With high parking requirements, the results can often be unattractive, such as “dingbat” buildings (a building on stilts over a parking lot). In *Rethinking Residential Parking: Myths and Facts* the Non-Profit Housing Association of Northern California put it this way:

Anyone who has been in an older Bay Area neighborhood has probably noticed attractive apartments buildings like the courtyard style housing that was prevalent in California and wondered, “Why don’t they build stuff like that anymore?” A main answer is that those developments were not required to build certain amounts of parking. Many of the unattractive, sixties-style apartments that neighborhoods feel are so out of character are the result of mandating parking requirements. Having to “fit in the parking” drives the design process housing developments and eliminates opportunities to incorporate open space. And since an additional space can increase the costs, high minimum parking requirements reduce the money that can be spent on quality materials and architects.

Another factor to consider when developing residential parking requirements is that different types of units generate different parking needs. The report *Housing Shortage / Parking Surplus* by the Transportation and Land Use Coalition makes this point forcefully:

Silicon Valley cities, like most United States jurisdictions, routinely prescribe a minimum number of parking spaces for each new housing development. Unfortunately, these parking requirements often take a “one-size-fits-all” approach, even though vehicle ownership varies dramatically for different types of households. Renters, low-income households, seniors, and those living in dense neighborhoods near transit tend to own fewer cars. In fact, over one of every three households in Silicon Valley own a single vehicle or none at all.

In *Rethinking Residential Parking: Myths and Facts* the Non-Profit Housing Association of Northern California pointed out that the **income** of residents has an impact on how many vehicles they own, and therefore how many parking space they need:

In 17 studies on vehicle ownership, income was found to be a significant driver of vehicle ownership. This pattern holds throughout the Bay Area. In the 1990 census, households earning between \$20,000 and \$25,000 owned on average only 1.30 vehicles, 26 percent below the region wide average of 1.76 cars. And 28 percent of households earning between \$10,000 and \$15,000 did not own a vehicle at all. By comparison, 10 percent of households region wide lived without a car. Additionally, most affordable housing is built near transit service, which reduces the need for a first or second car in many households. In the Bay Area, minimum parking requirements do not recognize this fact and reduce their parking requirements for affordable housing. Outside of the Bay Area, cities such as Los Angeles, Santa Monica and San Diego have provided reductions in their development regulations for affordable housing.

In *Housing Shortage / Parking Surplus*, the Transportation and Land Use Coalition also described the correlation between **income** and vehicle ownership:

Even controlling for other factors such as density and transit accessibility, lower-income households have lower vehicle ownership rates. The vast majority of car-free households earn less than \$25,000 per year. Rather than owning a car, which can cost more than \$7,000 a year to own and operate, some low-income residents get around by other means. A survey by the Santa Clara Valley Transportation Authority (VTA) found that 59% of VTA bus riders make less than \$35,000 per year, qualifying them for very low- or low-income housing, depending on family size.

Because of this, many cities lower their parking requirements for low income housings. For example, the City of Seattle's parking requirement for low-income units with two or less bedrooms was recently reduced to one parking space for every three units (0.33 spaces per unit). In the Center City neighborhoods that ring downtown Seattle the requirement for units with three or more bedrooms was reduced by half, to one space for every two units (0.5 spaces per unit).

In addition to proximity to transit and income of the residents, the **age** of the residents also plays a role in parking demand according to *Rethinking Residential Parking*:

Seniors own significantly fewer vehicles and thus generate lower demand for parking. In the Bay Area, households with all members aged 62 and above own 31 percent fewer cars than households with no seniors. Nationwide, renting households with all members aged 65 or older own an average of 0.6 vehicles versus a national average household rate of 1.9 vehicles for households with no seniors

In *Housing Shortage / Parking Surplus*, the Transportation and Land Use Coalition also described the correlation between **age** and vehicle ownership:

In the Bay Area, the vehicle ownership rates of seniors are about 30% lower than the general public. ...the difference is even more marked with seniors aged 75 and over, who own just half as many vehicles as the average household.

The Transportation and Land Use Coalition also described the vehicle ownership rates for **renters** and residents of dense, transit-oriented development:

**Renters own fewer vehicles.** According to 1990 census data, the most recent for which a breakdown is available, 41% of rental households in Santa Clara County own one vehicle and 9% own no vehicle at all – more than double the proportions for owner occupiers.

**Residents of dense, transit-oriented development own fewer vehicles.** Residents in light rail corridors use transit as their predominant commute mode more than five times as often as residents countywide. In turn, they are less likely to own a vehicle. A recent study of the factors influencing vehicle ownership in the Bay Area, Los Angeles and Chicago found that transit service and density, along with income and household size, explained virtually all the variation in vehicle ownership between different neighborhoods in each region. ...the densest, most transit accessible areas (show) the lowest vehicle ownership rates. ...apartment dwellers also own fewer vehicles than those in detached homes – regardless of income.

In *Housing Shortage / Parking Surplus*, the Transportation and Land Use Coalition described how good location, good design, and specialized unit types can create remarkably low parking demand by describing the development “Alma Place” in Palo Alto as an example:

Alma Place, an affordable (project) near Palo Alto’s downtown developed by the non-profit Palo Alto Housing Corporation, **has only 0.5 spaces per residential unit.** The project, begun in 1996, sits on a half-acre parcel originally zoned at 15 units per acre. As built, Alma Place offers 250 units per acre, unprecedented in downtown Palo Alto.

Alma Place offers 106 single-room units and a manager’s unit. The apartments provide 260 square feet of living space that includes a bathroom, sink, small refrigerator, noise-insulated bay windows, and nine-foot ceilings. The units must meet strict affordability requirements, with rents offered according to income ranging from \$330 to \$490.

A year 2000 survey showed that 81% of the parking was utilized in peak periods. City of Palo Alto staffs acknowledge that the building “certainly isn’t underparked,” and it has received little complaint from tenants or surrounding residents. If Palo Alto’s standard parking requirement were applied to Alma Place, 70% of its parking would have been unused (or, more likely, it would have contained less housing).

# APPENDIX 5 BLENDED COMMERCIAL LAND USE CATEGORY FORMULA

The approach that was taken to develop a recommendation for the commercial category was complicated, but logical. First, we started with the Urban Land Institute’s shared parking formula, which shows how much of a particular use’s peak parking need is used throughout the day. This formula is illustrated below:

**Urban Land Institute’s Shared Parking Formula for Commercial Uses  
(The Amount of Peak Parking Need Occupied Throughout the Day and Week)**

	Time	Office	Retail	Restaurant	Entertainment
<b>Weekdays</b>	6:00	3%	0%	0%	0%
	7:00	20%	6%	2%	0%
	8:00	63%	13%	5%	0%
	9:00	93%	31%	10%	0%
	10:00	100%	49%	20%	0%
	11:00	100%	63%	30%	0%
	12:00	90%	71%	50%	30%
	13:00	90%	73%	70%	70%
	14:00	97%	71%	60%	70%
	15:00	93%	69%	60%	70%
	16:00	77%	63%	50%	70%
	17:00	47%	57%	70%	70%
	18:00	23%	60%	90%	80%
	19:00	7%	65%	100%	90%
<b>Saturday</b>	6:00	0%	0%	0%	0%
	7:00	3%	3%	2%	0%
	8:00	10%	10%	3%	0%
	9:00	13%	30%	6%	0%
	10:00	13%	45%	8%	0%
	11:00	17%	73%	10%	0%
	12:00	17%	85%	30%	30%
	13:00	13%	95%	45%	70%
	14:00	10%	100%	45%	70%
	15:00	7%	100%	45%	70%
16:00	7%	90%	45%	70%	
17:00	3%	75%	60%	70%	
18:00	3%	65%	90%	80%	
19:00	3%	60%	95%	90%	
20:00	3%	55%	100%	100%	
21:00	0%	40%	100%	100%	
22:00	0%	38%	95%	100%	
23:00	0%	13%	85%	80%	
0:00	0%	0%	70%	70%	

The ULI’s standard parking ratios were then applied to this formula. These are standard suburban parking ratios which do not take into account transit, walkability, or other factors, but they are a good starting point. They are:

Land Use	Standard Parking Ratios
Office	3 spaces per 1,000 square feet
Retail	5.5 spaces per 1,000 square feet
Restaurant	20 spaces per 1,000 square feet
Entertainment	0.3 spaces per seat

Finally, the maximum amount of potential new Downtown development that is conceivable for Downtown was added in. The amount of office, retail, and restaurant uses were provided by Freedman, Tung, and Bottomley based on their economic analyses for the Downtown Precise Plan. These numbers don’t represent the amount that is necessarily likely or desirable, but the maximum amount that the Downtown market area could feasibly support and that the Precise



Plan (as currently proposed) would allow under a full build-out scenario. The entertainment number was created by staff, and is intended to represent all entertainment uses that may be created during the life of the parking plan. This number is probably very high, but due to the entertainment peak coinciding closely with the restaurant peak, it is a conservative approach to use a high number for entertainment because it inflates the number of spaces needed. **These figures are intended to represent new development AFTER the completion of “On Broadway,” thereby excluding both “On Broadway” and current land uses.** The numbers used in the calculation were:

Land Use	Amount of New Development Possible Based on Market Analysis
Office	600,000 square feet
Retail	40,000 square feet
Restaurant	74,000 square feet
Entertainment	1,000 seats

The amount of each use was multiplied by the ULI parking ratios to come up with a peak parking demand, and then the peak parking demand was applied to the ULI shared parking rates for each hour of the day to determine how many spaces would be needed for each hour. The total number of spaces needed for each hour was then divided by the total square footage of development to come up with a figure for the number of spaces needed per 1,000 square feet for each hour of the day (far right column). For entertainment uses, the “On Broadway” project was used to calculate the approximate number of square feet per seat (85,000 square feet for 4,200 seats).

Based on this calculation, the maximum amount of parking needed would be 4.85 spaces per 1,000 square feet for commercial uses. This is based on the standard ULI ratios, which do not take into account transit, mixed-use, walkability, or density. That means that the actual need is lower. This also assumes that all parking is either city-operated or private lots that are open to the public.

**Estimated Commercial Parking Generation  
For Potential New Downtown Redwood City Development  
Based on the Urban Land Institute's Shared Parking Formula**

	Office	Retail	Restaurant	Entertainment			
	4	5	20	0.29			
Peak Demand Rate	Per 1,000sf	Per 1,000sf	Per 1,000sf	Per Seat			
Size at build-out	600,000	40,000	74,000	1,000			
Peak Demand (spaces)	2,400	200	1,480	290	Total Downtown Demand	Office/ Retail/ Restaurant/ Cinema Combined Demand Per 1,000sf	
Weekdays	6:00	72	-	-	-	72	0.10
	7:00	480	12	30	-	521	0.71
	8:00	1,512	26	74	-	1,612	2.20
	9:00	2,232	61	148	-	2,441	3.32
	10:00	2,400	99	296	-	2,795	3.81
	11:00	2,400	127	444	-	2,971	4.05
	12:00	2,160	141	740	87	3,128	4.26
	13:00	2,160	145	1,036	203	3,544	4.83
	14:00	2,328	141	888	203	3,560	4.85
	15:00	2,232	138	888	203	3,461	4.71
	16:00	1,848	127	740	203	2,918	3.97
	17:00	1,128	115	1,036	203	2,482	3.38
	18:00	552	119	1,332	232	2,235	3.04
	19:00	168	129	1,480	261	2,038	2.78
	20:00	168	127	1,480	290	2,065	2.81
	21:00	72	89	1,480	290	1,931	2.63
22:00	72	47	1,332	290	1,741	2.37	
23:00	-	19	1,036	232	1,287	1.75	
0:00	-	-	740	203	943	1.28	
Saturday	6:00	-	-	-	-	-	0.00
	7:00	80	6	30	-	116	0.16
	8:00	240	20	44	-	304	0.41
	9:00	320	60	89	-	469	0.64
	10:00	320	90	118	-	528	0.72
	11:00	400	146	148	-	694	0.95
	12:00	400	170	444	87	1,101	1.50
	13:00	320	190	666	203	1,379	1.88
	14:00	240	200	666	203	1,309	1.78
	15:00	160	200	666	203	1,229	1.67
	16:00	160	180	666	203	1,209	1.65
	17:00	80	150	888	203	1,321	1.80
	18:00	80	130	1,332	232	1,774	2.42
	19:00	80	120	1,406	261	1,867	2.54
	20:00	80	110	1,480	290	1,960	2.67
	21:00	-	80	1,480	290	1,850	2.52
22:00	-	76	1,406	290	1,772	2.41	
23:00	-	26	1,258	232	1,516	2.06	
0:00	-	-	1,036	203	1,239	1.69	

The hypothetical shared parking requirements for several other sources were calculated. These calculations were based on their requirements for office, retail, restaurant, and entertainment uses, multiplying them by the Precise Plan build-out numbers described above, totaling the number of spaces, and then dividing by the total square footage. A sample calculation is below:

**Downtown Mountain View Combined Commercial Parking Need  
Based on Their Current Parking Requirements and the  
Urban Land Institute's Shared Parking Formula**

Use	Size	Individual Requirement		Total Number of spaces Required
Office	600,000	3	1,000 sf	1,800
Retail	40,000	3.33	1,000 sf	133
Restaurant	74,000	3.33	1,000 sf	246
Entertainment	1,000	20,238	0.40 seat	400
	734,238			2,580

**Average Requirement Per 1,000 Square Feet 3.51**

Here is how other requirements looked when manipulated this way:

ULI Shared Parking Handbook	4.85
"Parking" by Weant and Levinson	5.21
ITE Average Parking Generation Rate	3.73
Belleview, WA	1.86
Walnut Creek	5.37
Cathedral City	3.19
Current Redwood City Zoning	5.95

Only the ULI number takes shared parking into account, and none take transit, mixed use, density, and walkability into account. And yet, they are all lower than we might expect them to be. Using the ULI shared parking number as a base for our formula, staff feels that 3 spaces per 1,000 is a very reasonable requirement for shared parking. This would give approximately 38% reduction for density, mixed-use, walkability, and transit, which is very sound. And this number is still very much in line with Cathedral City and Mountain View, for example, and is even close to the ITE average parking generation rate. This should certainly be "just enough" parking for future commercial uses in Downtown Redwood City.

# APPENDIX 6

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