February 20, 2006
To: Laurel Impett - Shute, Mihaly and Weinberger LLP
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RE: Technical Memorandum on Parking in the Downtown San Diego Community Plan

I. Introduction

The Community Plan for downtown San Diego, as it is currently proposed, envisions a much-denser area in terms of both jobs and housing. By 2030, the residential population is projected to grow to 90,000, and the employment population to approximately 165,000. The Plan purports to advocate for a greater use of mass transit and other forms of alternative transportation. While the Plan recognizes that parking is a critical component of both transportation and land use, the provision of parking is, by definition, a way to accommodate the automobile, and the presence of parking often depresses transit ridership and other non-automobile uses. When parking is available, people drive.

Parking is one of the most contentious aspects of land development, and suggesting that an area needs less parking is generally a good way to start an argument. The San Diego plan is no exception. Much of the concern about San Diego's proposal stems from the Downtown Community Final Environmental Impact Report (FEIR), which was conducted by Wilson & Company. The FEIR estimates that there is currently a 944-space "parking deficit" in downtown San Diego, and that if the downtown is built out to the specifications imagined in the Community Plan this shortfall will balloon to 36,633 parking spaces. The FEIR calls this shortfall "significant and unmitigable." A number of community members have cited the EIR in arguing that the minimum parking requirements in downtown San Diego should be higher.

I believe this concern is misplaced. While I will not say that a future parking shortfall in downtown San Diego is impossible—simply because long-term projections based on uncertain future circumstances are notoriously unreliable—I will say with certainty that the 36,633 figure should not be taken seriously. The FEIR arrives at this number by confusing demand with occupancy, relying on flawed baseline assumptions, and assuming that the price of parking can be ignored. I want to emphasize that last point. We do not project the demand for gasoline or housing (or anything else) without considering its price, and if anyone wrote a report projecting a massive shortfall in housing or gasoline without mentioning prices we would justifiably refuse to take the report seriously. Yet the EIR presents us with a parking shortfall scenario that has no price component. The word "price", in fact, never appears in the 13 pages of the Draft EIR that are dedicated to parking.[1]

Even if a shortfall in parking does develop, it is most certainly mitigable. As with shortages of most goods, mitigation can be achieved by increasing the price. No one likes to pay for parking, but paid parking is in every way a better policy than raising the minimum parking requirements, which is essentially a government mandate to endlessly increase parking's supply. Minimum parking requirements are one of the most entrenched, and one of the most disastrous, innovations of modern urban planning. They badly distort the markets for transportation and land use, warp urban form, sap the vitality of downtowns, and lead to increased traffic congestion and air pollution. They are a solution worse than the problem they try to solve, and reducing or eliminating minimum parking requirements is a step in the right direction.

In the remainder of this memo I will first critique the FEIR's calculation of the so-called parking shortfall. As part of this discussion I will demonstrate that the assumptions and methods used to derive minimum parking requirements are often shoddy and ill conceived.

In Section III I offer a brief comparison of San Diego's parking supply with the parking supply in other downtowns. Section IV then provides some additional detail about the harm done by minimum parking requirements, and discusses how downtown San Diego might use the market to better manage its parking supply. Letting the market provide parking will improve economic efficiency *and* environmental quality, and it will allow San Diego's urban planners to turn their attention to other problems that truly require their attention.

The opinions expressed in this memo are my own, and should not be ascribed to UCLA's Department of Urban Planning.

II. The Alleged Parking Shortfall

The 36,633 parking space shortfall is reported in the FEIR. The FEIR does not, unfortunately, devote much attention to describing how this number was derived. However, in an earlier, draft version of the EIR, the Transportation, Circulation and Access section devotes 13 pages to parking, and explains in some detail the methods used to calculate the future parking shortage. Most of my analysis is based on this latter document, which I will refer to as the EIR. When I discuss the final document I will refer to it as the FEIR.[2] The EIR arrives at its conclusion of a 36,633 parking space shortfall in a fairly straightforward way. The parking section of the report begins by stating that (p.151):

> Most sources and examples of parking demand ratios focus on zoning requirements which are typically not indicative of true parking demands. Zoning codes tend to reflect various policies and strategies aimed at either limiting the expanse of downtown parking to promote use of alternative transportation modes, or creating parking minimums to ensure parking options and the economic vitality of downtowns.

[1] The FEIR does once, in passing on page 5.2-43, acknowledge that "cost" might play a role in the demand for parking, but the thought is never pursued.
[2] The FEIR is available at http://www.ccdc.com/planupdate/pdf/Volume1A_FEIR_1-06rev.pdf. The Transportation section of the EIR is available at http://www.ccdc.com/planupdate/pdf/2.2.pdf.

Parts of that statement are true. Zoning codes *are* often designed to ensure parking minimums. And zoning codes are rarely indicative of true parking demand—in fact they are often wildly divorced from it, as I will discuss below. Few zoning codes, however, limit parking in order to promote alternative transportation uses. Boston would be one example (in 1975 the U.S. Environmental Protection Agency placed a cap on the number of parking spaces in downtown Boston) and some aspects of the zoning codes in Manhattan and San Francisco, which cap parking in certain areas to enhance street life and/or preserve historic areas, would count as well. But these and a few others are the exceptions rather than the rule.

Most zoning codes are designed to ensure a plentiful supply of parking, which helps explain why parking is free for over 99 percent of the vehicle trips in the United States.[3] In fact, many local governments, when they write parking ordinances, employ precisely the same methodology as the EIR's authors: they look at an existing municipal zoning code, or at the book *Parking Generation*, published by the Institute of Transportation Engineers (ITE).

After some minor tweaking, they take the parking ratios from the book or zoning code and apply them to their own city.[4] I quote the EIR again (p. 151):

> For the purposes of this assessment, baseline parking demand ratios typically associated with high auto use suburban locations were identified from sources such as the Urban Land Institute, the Institute of Traffic Engineers, and the City of San Diego municipal code. These baseline parking ratios were then adjusted to reflect local downtown San Diego conditions relating to the utilization of transit and non-motorized modes and the mixed-use development patterns.

The EIR uses this method to create a total estimated future demand for parking in downtown San Diego, and then subtracts this number from the projected number of parking spaces. The resulting number is the projected parking shortfall. The important point to be drawn from this is that *if the baseline demand ratios are not accurate, then neither is the projection of a parking shortfall*. And the baseline assumptions are *not* accurate. ITE's *Parking Generation* is a flawed document, and most municipal parking requirements are also based on faulty logic, which is not surprising given that most minimum parking requirements are remarkably similar to, and often explicitly built on, *Parking Generation.*[5]

The EIR acknowledges one significant weakness of its baseline ratios: they are constructed from observations made at suburban locations where parking is plentiful, transit is absent, and opportunities for walking are few. In such places the demand for parking is bound to be higher, because there is no alternative to driving. The EIR attempts to rectify this problem by taking the ITE or San Diego rates and adjusting them downward.[6] Simply making this adjustment, however, does not adequately address the problems with the EIR's baseline ratios.

Parking Occupancy Vs. Parking Demand

To begin, neither the ITE nor the San Diego Municipal Code present "baseline demand ratios." In fact, they are not demand ratios at all. They are *occupancy* ratios. The EIR consistently blurs the distinction between parking occupancy, peak parking occupancy, and parking demand. Parking *demand* is the relationship between the price of parking and the number of parked cars at a given location. Neither the ITE's *Parking Generation* nor the EIR address parking demand, because neither discuss parking's price. The ITE implicitly assumes that the price of parking is free, because the vast majority of its observations come from places where parking *is* free. Thus the ITE reports peak parking *occupancy*, which an economist would define as the "peak quantity of parking demanded at zero price," and which is, essentially, a count of the highest number of cars ever observed in a building's parking lot. When that occupancy is divided into the floor area of the building, the result is an occupancy ratio, not a demand ratio.

Because the EIR never mentions price, we cannot know with certainty what its assumptions about the price of parking are. It seems safe to conclude, however, that the EIR assumes that the price of parking will be constant. Thus the EIR is also projecting not demand but quantity demanded at a given price, or occupancy. Counting cars is not the same as calculating demand.[7]

Nevertheless, when the EIR discusses its baseline ratios, it calls them "peak parking demand" rather than "peak parking occupancy." More curiously still, after adjusting its baselines for mixed-use and transit, it reports its final estimates as "parking demand." This is incorrect on two counts. The first, as just mentioned, is that without a price component we cannot have a demand ratio. The second is that the word "peak" has mysteriously disappeared. For example, in Table 7.3 (shown below), which analyzes hotel parking, the EIR begins with a baseline drawn from the ITE, of 0.8 spaces per room. This is referred to as "peak parking demand," even though it is peak

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[3] See Shoup (2005).

[4] Surveys of parking requirements performed by the Planning Advisory Service show a remarkable similarity between ITE standards and local parking requirements. For example, across local governments in the United States the median parking requirement for a fast food restaurant is 10 spaces per 1,000 square feet, which is almost identical to the ITE's recommendation of 9.95 spaces per 1,000 square feet. The similarity is probably the result not only of communities using the ITE books, but also of communities copying each other's zoning (Shoup 2003, 2005).

[5] See Shoup (2003, 2005).

[6] In this memo I will not comment on the merits of these adjustments. Although the EIR cites its sources for making these adjustments, it provides little other information. But even if we assume that the adjustments are sound (and I suspect they are not) they are adjustments to flawed baselines, so the final numbers are still devoid of merit.

[7] I can use an example to make this clearer. Say I begin selling gasoline for a dollar a gallon. Customers swamp my service station but I do not raise the price, and so I run out gas in 25 minutes. This experiment tells me nothing about the *demand* for gasoline. Rather it tells me that the *quantity demanded* of gasoline at $1 per gallon is unsustainably high. To learn about the demand for gasoline, I would have had to consistently raise the price as more customers poured in, until my customer stream was more or less in equilibrium with my supply of gas.

parking occupancy. The word "peak" is used because the ITE makes its observations at the busiest time of day.[8] The EIR then makes adjustments for alternative forms of transportation and arrives at a figure of 0.5, which it calls "parking demand." But making an adjustment for transit and mixed use is *not* the same as making an adjustment for the time of day. Thus what it reports is *not* "parking demand" or even "parking occupancy" but "adjusted peak parking occupancy."

An example might make this clearer. Suppose we observe a suburban hotel on its busiest day at its busiest hour, as the ITE does. We make our observation at perhaps 2 or 3 PM, when new guests are arriving, late checkouts are leaving, continuing guests are coming and going, and vendors are making deliveries. We will see far more parking spaces in use than we would see at any other time. We can then step back and imagine that in a downtown setting a quarter or a fifth of all those car trips might have been made by walking or transit. But we would still be basing our observation on the busiest time of day, meaning that any extrapolation of our results would still be biased upward. It makes little sense to take the *peak* occupancy of parking and interpret it as the *average* parking occupancy for a land use. And it makes still less sense to take the *peak* occupancy and use it as the basis for a *minimum* parking requirement.

Conceptual and Methodological Problems with Occupancy Ratios

The assumption behind the occupancy ratios reported in the EIR is that size and land use, rather than other factors, are the primary determinants of parking occupancy. So for example it reports that downtown office spaces generate a parking occupancy of 2.1 spaces per 1,000 square feet of space (Table 7.1) or that residential units generate a demand for 1.35 parking spaces per unit (Table 7.4). On the surface this might seem a reasonable conclusion. Certainly some land uses will draw more traffic than others, and of course the size of a building probably has some correlation to the amount of driving to and from it.

But how much do size and land use really matter? Consider an office building. It may be used by upper management of a large firm, and consist primarily of 300-square foot executive suites. The building holds relatively few people, and as such requires relatively little parking. But now let's say the company vacates the building, and a telemarketing firm moves in. Instead of large suites, the telemarketing firm crams in scores of cubicles, maximizing every inch of available space. The same building now has many more people, and probably generates a much higher peak parking occupancy. Yet for those drastically different conditions the EIR has only one parking occupancy rate: 2.1 spaces per 1,000 square feet.[9]

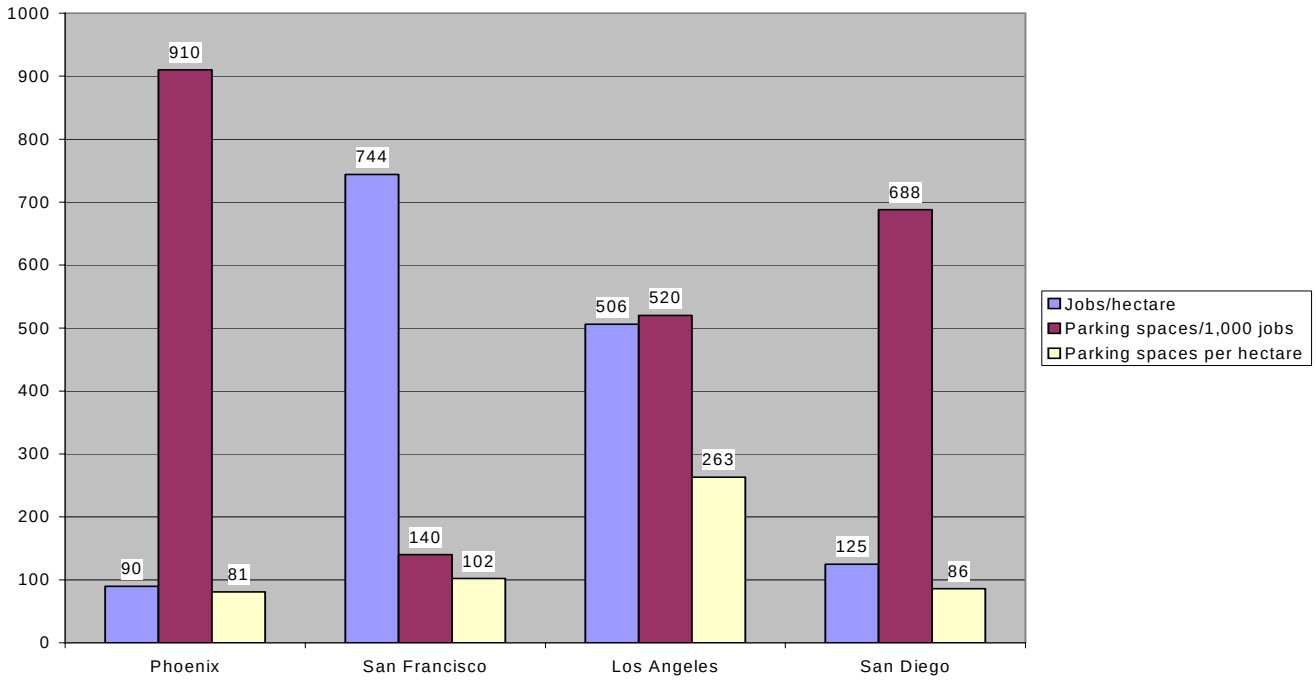
The lesson here is that parking demand is created by *people*, not by land uses. Moreover, people respond to prices, so while the peak parking occupancy of these two office buildings might be different when we initially observe them, adjusting the price of parking could make the occupancies the same. If the price of parking were increased when the telemarketing firm moved in, the parking occupancy might stay the same, because people who didn't want to pay might choose instead to walk, carpool or ride transit to work. Places like Manhattan and downtown Boston demonstrate this point. An office building in Manhattan has far more people (and square footage) than a typical office building in a suburb, but it might well create less demand for parking, because the parking is extremely expensive. It is the price, not the building, which creates and regulates the demand.

The ITE's *Parking Generation* manual provides more evidence that land use or building size have little relation to parking occupancy. For most land uses, *Parking Generation* provides a regression equation that quantifies the relationship between the land use and the parking occupancy. Almost without exception, these relationships are extraordinarily weak. For example, in the 2004 *Parking Generation* the results reported for a fast food restaurant suggest that every 1,000 square feet of floor area requires about ten parking spaces. But an examination of the regression results shows that this is not the case at all. The ITE does not report the coefficient of determination, or R^2, for the equation, but based on the information given it is possible to reconstruct the regression and generate the R^2, which turns out to be 0.11. An R^2 of 0.11 suggests that about 11 percent of the change in parking demand is based on increases in the floor area of the land use. Factors *other* than square footage, in other words, account for almost *90 percent* of the observed changes in parking occupancy.[10]

[8] As the introduction to the second edition of *Parking Generation* says, "the purpose of the survey is to count the number of vehicles at the time of peak parking demand" (1987: viii-xv.) See also Shoup, (2003:4). Since the ITE ratios are the standard for most parking requirements, this belies the EIR's statement that "Typically, parking minimums are set at a level lower than market demand" (p. 161). The exact opposite is true.

[9] See Shoup (2005). Both Cervero (1988) and Gruen Associates (1986) have found that the occupancy rates in office buildings vary tremendously. Cervero found a range of between 0.5 and 6 persons per 1,000 square feet, while Gruen Associates found occupancies ranging from 1.6 to17 people per 1,000 square feet. Kadesh and Pierson (1994) reported similar findings. Given such ranges, it would be virtually impossible to accurately predict the parking demand generated by an office building over the course of its usable life.

[10] See Shoup (2003, 2005). Essentially, the R^2 is the percentage of the variance in the dependent variable that can be attributed to the variance in the independent variable. An R^2 of zero would mean there is no correlation at all. But an R^2 of zero is quite rare, because random chance often produces some correlation.



Because most municipal parking requirements are based, directly or indirectly, on the ITE's manuals, the parking requirements suffer from the same flawed assumptions. San Diego's parking code, like the ITE manual, assumes that square footage is the primary determinant of parking occupancy for many land uses.[11] It is also worth noting that the ITE's studies are usually constructed from few observations, which renders many of the regressions worthless—the small sample sizes compromise statistical significance. Yet this does not stop the ITE, or the EIR, from reporting parking ratios with high levels of precision. Just as the ITE reports that a fast-food restaurant generates a need for 9.95 parking spaces per 1,000 square feet, the EIR reports that residential apartments in downtown San Diego will generate a need for 1.35 parking spaces per unit. This level of specificity is unjustified. Travel behavior is an immensely complex subject, and the idea that we can estimate the future need for parking spaces to the second decimal point—that we scientifically understand the need for parking down to *one-one hundredth* of a parking space—is ludicrous. This is a textbook example of false precision: the use of irrelevant decimal places to impart an air of authority and credibility. A projection of 1.35 parking spaces per dwelling unit is precise, but we should not confuse precision with accuracy.[12]

[11] To give just one example, the EIR uses the San Diego code to report a "retail parking demand ratio" of 2.3 spaces per 1,000 square feet. But careful studies of retail parking suggest that the relationship between retail parking and floor space is almost entirely spurious. In 2002, for example, Parsons Transportation Group studied the parking occupancy at hourly intervals at 17 Home Depot Stores on a Saturday, the busiest day of the week. The study found no correlation between the size of the store and occupancy in the store's parking lot. Rather the determining factor was, unsurprisingly, sales—stores that sold more had busier parking lots. Sales, in turn, are determined by a whole range of factors external to the store itself: the density and socioeconomic composition of the surrounding area, the presence of competing stores, etc. Parsons also found that both ITE recommendations and local parking requirements consistently overstated the peak occupancy at Home Depot Stores. See Parsons (2002) and Shoup (2005).

[12] Let's put this point another way: if a planning student at UCLA were to turn in a statistics project that had a tiny sample size, made no effort to control for other factors, and had miniscule determination coefficients, his results would be considered invalid and his project would not be accepted. Many practicing planners, unfortunately, have either never received or have long since forgotten their statistics training, so even the most conscientious do not understand that the low R^2 indicates that the floor area is not a reliable predictor of parking occupancy. The ITE has made this problem worse with its 2004 edition of *Parking Generation.* Where previous editions had included the warning "Caution—Use Carefully—Low R^2 and Small Sample Size," the 2004 edition simply reports its results for credulous planners to use.

Summary

"Without mandatory mechanisms to ensure the provision of parking facilities commensurate with demand," the EIR concludes, "the potential for parking shortages would exist." Specifically, the EIR projects that a shortfall of 36,333 spaces is likely if the Community Plan is enacted in its current form. This figure is precise but inaccurate. In fact, it is almost certainly wrong. The EIR has taken flawed baselines occupancy ratios and, after minor adjustments, presented them as valid demand ratios. At no point does it discuss the price of parking. Although the EIR assumes that many other aspects of downtown San Diego will change—such as its population and its built environment—it tacitly assumes that the price of parking will remain the same. Given these assumptions, it is not surprising that the EIR's authors believe a parking shortfall will occur. If we applied the same assumptions to grocery stores and restaurants, we could easily conclude that downtown San Diego will soon run out of food. But we do not apply these assumptions to food, and we do not worry that the local government needs to mandate the presence of restaurants and grocery stores downtown. We do not codify silly assumptions and force developers to abide by "minimum restaurant requirements." When it comes to food we assume that the market will mediate the relationship between supply and demand. There is no good reason not to take the same approach with parking.

III. Parking Density in San Diego

The EIR and FEIR begin with the assumption that downtown San Diego currently suffers from a 944-space parking shortfall. That shortfall is also calculated using flawed occupancy ratios. Another way to gauge the stock of parking in an area, however, is to calculate the number of parking spaces per job. Jobs are a useful metric because the bulk of a downtown's daytime population is usually employment. The table below shows parking and land area information for the Central Business Districts of four Western cities: Phoenix, Los Angeles, San Francisco, and San Diego, using data published in 1999. The San Diego CBD has 688 parking spaces per thousand jobs—significantly higher than the Los Angeles CBD, which has 520, and dwarfing San Francisco, which has 140 parking spaces per thousand jobs.

Some cautions should be taken when interpreting this figure. The figure is based on data that describes the San Diego CBD as being 570 hectares, having 50,234 parking spaces, and having just under 73,000 jobs.[13] The San Diego CBD is therefore considerably larger than the other three CBDs, which are all approximately 400 hectares. This may skew the results somewhat. I do not use the data reported in the FEIR—which describes downtown San Diego as being about 580 hectares, with about 56,000 parking spaces and 74,500 jobs—for the sake of consistency. The 1999 data was all compiled using the same criteria, and comparing these numbers with each other is therefore more valid. If I *do* plug in the FEIR's numbers, however, the results are even more dramatic: downtown San Diego has 763 parking spaces per 1,000 jobs, which makes it approach Phoenix in its devotion to parking.

Even accepting that these figures are imprecise, and that the additional land area of the San Diego CBD might alter the findings, the comparison is telling. By almost any interpretation, including a fairly wide margin of error, when it comes to parking San Diego more closely resembles Los Angeles than San Francisco. Yet to the extent that the Community Plan envisions a downtown that is vibrant and lively, it should be trying to *emulate* San Francisco, a city renowned for its bustling street life, rather than Los Angeles or Phoenix, whose downtowns still struggle for vitality. The low number of parking spaces per job in San Francisco's CBD help explain the high levels of walking and transit use there, which in turn help account for the CBD's vitality. If San Diego wants a world-class downtown like San Francisco's, less rather than more parking is a policy it should embrace.

IV. Strategies for Downtown Parking Management

Downtowns thrive on density. Although at one point in the middle of the twentieth century urban planners believed that downtowns could only compete with suburban locations by becoming less dense and more accommodating to the automobile, the urban renewal experiments that tested this idea were almost all failures. Parking lots were constructed, minimum parking requirements were enacted, and downtowns continued to decline. The lesson from these policy failures was that while downtowns can survive and compete with their suburbs, they cannot do so on the suburbs' terms. A downtown will never be as car-friendly as a low-density suburb with wide streets and expansive parking lots. The competitive downtown makes its density an asset rather than a weakness.[14]

Parking is an essential component of a downtown, but at a certain point parking offsets, rather than complements, the benefits of density. Density provides downtowns with a vibrant street life and a lively atmosphere that many suburbs lack. Plentiful parking, however, discourages walking, both because parking can create an environment that is unpleasant for pedestrians (who have to dodge cars sliding in and out of garages) and because the provision of parking lowers its price, and a low price for parking makes it easier to drive. For the same reason, plentiful parking is also correlated with lower levels of transit use. Cities with high levels of public transportation ridership tend to devote very little of their downtown land area to parking. New York and London each devote about 18 percent of their Central Business Districts to parking, and Tokyo devotes only 7 percent. Los Angeles, by contrast, devotes almost 81 percent of the land area of its CBD to parking.[15] And because transit trips are usually bookended by pedestrian trips—as people walk to and from their bus or rail stops—a decreased transit share generally results in a decreased walking share as well. Minimum parking requirements do not just remove density's benefits, however. They also increase density's costs. Because parking requirements result in an automatic provision of new parking, they badly unbalance the downtown transportation system. Consistently supplying new parking while not supplying new street space increases the ability to store cars but relatively decreases the capacity to move them. The

[13] The data for the CBDs in the table is derived from Kenworthy and Laube (1999, Chapter 3). Computations and explanations can be found in Manville and Shoup (2005).

[14] See Jacobs (1961); Jakle and Scully (2004); Teaford (1990); and Fogelson (2004).

[15] These figures are calculated in Manville and Shoup (2005). Many downtown parking spaces are in vertical structures or garages. We make our calculations by assuming that all the spaces have been laid flat, and then divide the resulting land area by the land area of the CBD.

supply of cars rises but the supply of streets remains static, and the result is increased congestion. Congestion, in turn, leads to increases in localized air pollution.[16]

Increased congestion, deadened street life and lower levels of transit use are all costs of minimum parking requirements. In addition, minimum parking requirements have high *opportunity* costs. Parking requirements transfer the terminal costs of driving away from drivers and onto land developers. A cost that should be borne by drivers is thus instead buried in the development process. The money that developers spend on parking—which can be $30,000 per space or more in a large subterranean garage—could be spent more productively elsewhere.[17] If less money were spent on parking, for example, apartments could be more affordable, more aesthetically pleasing, or both. Parking requirements shift money away from housing for people and toward housing for cars. And this is to say nothing of the time, energy and money planners and developers spend arguing over parking requirements—which are unscientific and arbitrary. Taxpayer dollars have many good uses, but paying people to write, review, enforce and adjudicate disputes over minimum parking requirements is not one of them.

Parking Maximums

In recognition of the harm caused by minimum parking requirements, a number of downtowns have adopted parking *maximums*—caps on the amount of parking permitted in the downtown. Boston, as mentioned earlier, has a parking cap. In 1995 the London borough of Kensington/Chelsea turned all its parking minimums into maximums. Manhattan and downtown San Francisco have maximums attached to different land uses, rather than minimums. Parking maximums, when coupled with efficient prices for on-street parking, can reduce congestion and free up land and capital for more productive uses. A cap on parking essentially creates a controlled market in it, and lets supply and demand, rather than government fiat, determine the price of parking.

For many cities, the switch from minimums to maximums seems drastic, and developers sometimes worry that it will be difficult to finance projects if they are not allowed to provide parking. While in some instances this concern has some validity, it is important to distinguish between *projects* that have limited parking and whole *areas* that have limited parking. If a local zoning board attempts to place limits on individual projects, then developers might very well have trouble attracting investors. If an entire area falls under a cap, however, then financers—perhaps after some initial skittishness—will most likely continue to lend. In his Urban Land Institute guide to real estate development, Harvard Professor Richard Peiser says, "lower parking requirements can save money, and lenders will still provide financing if all developers are subject to the same restrictions."[18]

The experiences of Boston, New York, London and San Francisco bear out Peiser's observation. Development has certainly not halted in these cities as a result of their restrictions on parking. Parking is an important consideration in many real estate investment decisions, but it is not the ultimate consideration. The ultimate consideration is profit, and wise investors have understood that there is money to be made in the real estate markets of London, New York and Boston—parking or no parking. There may be some lenders who refuse to lend for a downtown project without parking. But if the project is sound an enterprising lender will take the risk and reap the reward.
Nevertheless, many cities may be uncomfortable about implementing maximums in their downtowns. But every downtown can benefit by reducing or eliminating its minimums. In the absence of minimum parking requirements, developers are not prevented from providing parking, but neither are they forced to provide it. Developers can provide as much parking as they (or their investors), believe is necessary to make a project succeed. Because developers and their investors have a larger financial stake in the project, they probably have a better understanding than planners do about how much parking is needed. The absence of parking requirements also lets the developer provide the parking more dynamically. Minimum parking requirements force the developer to provide parking during a project's permitting process, when the least is known about the demand for parking at a site. For this reason requirements generally err on the side of providing too much. Without minimum requirements developers can provide less parking up front and then make adjustments when they have more and better information.

In conjunction with reducing or eliminating minimum parking requirements, I strongly recommend the following three steps for downtown San Diego:

Charge A Market Price for Curb Parking. The primary justification for off-street parking requirements is that in the absence of off-street spaces, drivers will compete for the scarce curb spaces and hopelessly jam the street. This, again, is the logic of planning without prices. The demand for curb spaces needn't be managed by endlessly increasing the supply of off-street parking. It can also be managed by raising the price of curb parking. Charging market prices for curb parking will reduce congestion, maximize the efficiency of the current parking supply, increase vehicle turnover (thereby moving more customers into and out of downtown) and increase public revenue. I also strongly recommend that the money raised from downtown parking meters be re-invested in the downtown—to clean the sidewalks, plant street trees, bury power lines, etc. Rather than spend money to build inefficient off-street parking, downtown San Diego should use efficient prices for curb parking to reduce congestion, raise money, and provide valuable public services.

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[16] Public health researchers have found that even in regions where the air is clean, areas with congestion can be intensely polluted, because even clean cars pollute when they are stuck in traffic. Congested areas often have high concentrations of Ultrafine Particulate Matter, a harmful mix of contaminants that can penetrate deep into the lungs. See Schweitzer and Valenzuela (2004); Zhu et al (2002); and Wachs and Dill (1999).

[17] Cost estimates come from the ITE (2004) and from Peiser and Frej (2003). The cost of parking rises as an area gets denser, not only because the parking must be vertical or subterranean but also because land values rise and construction becomes technically more complex in dense areas with many nearby buildings and uses. However, the demand for parking usually decreases as density rises, because walking and transit become more viable in dense areas. What this means, then, is that a parking requirement in an area that is expected to get denser (like downtown San Diego) becomes *increasingly expensive to comply with even as its usefulness falls*. The standard remains the same, but the cost to developers of meeting the standard steadily rises. The parking requirement is therefore a penalty on, and a disincentive to, future development.

[18] Peiser and Frej (2003: 224).

Unbundle Residential Off-Street Parking: Oftentimes the cost of parking is bundled into the cost of rent—i.e., for $1,000 a month a tenant gets both an apartment and a parking space. This is an inefficient way to allot parking spaces, because it makes life difficult for those who own many cars *and* those who do not own a car at all. The person without a car ends up paying for a space she does not use, and as a result pays more for housing than she should have to. She is essentially penalized for not owning an automobile. Alternatively, she may purchase a car, on the logic that if she is paying for a parking space she might as well use it, in which case the parking space leads not to a rent surcharge but to more driving in the downtown. The person with multiple cars, meanwhile, has a hard time living in the apartment because he is allowed only one parking space. He may want to live downtown but will choose instead to move to a suburb where parking is more plentiful. "Unbundling" parking—selling the parking separately from the apartment—solves these problems. If the $1,000 per month rent actually represents an $800 payment for the apartment and a $200 payment for a subterranean parking space, the person who does not own a car could choose not to buy parking and would save almost $2,500 a year on housing. A significant rent penalty is transformed into a powerful reward for not driving. The person with multiple cars, meanwhile could get the extra spaces he needs, provided he is willing to spend the extra money for them. Unbundling therefore creates incentives for walking and transit use, even as it makes downtown living easier for those who need or want to own multiple automobiles. Unbundling places the cost of parking where it belongs—on the driver—but it does not *require* anyone to do anything. In this way unbundling is quite different from minimum parking requirements, which are an exercise in force rather than choice.

IV. Conclusions

Although the FEIR's projected shortfall of 36,633 parking spaces looks both authoritative and alarming, it is neither. Both the assumptions and methods from which the shortfall is derived are flawed. Moreover, if downtown San Diego does face a parking shortfall, it is far from clear that minimum parking requirements are the ideal remedy. A public policy intervention must be evaluated not only on the grounds of whether it solves a problem, but also on whether it will cause new problems. Minimum parking requirements do, in one sense, solve a problem—they provide parking—but they create a host of other, more serious problems. Parking requirements divert resources away from productive uses and send them toward parking. They create incentives to drive and disincentives to walk or use transit, and the result is increased congestion. The increased congestion, in turn, leads to calls for more parking. Parking requirements are a self-fulfilling prophecy: by driving down the cost of parking they create an insatiable demand for more parking, meaning that as a "solution" minimum parking requirements only work if they are implemented continuously.

The flawed logic of minimum parking requirements defies one of the basic lessons of economics. Parking requirements assume that the only way to manage demand is to incessantly increase supply. Even if parking requirements were not based on statistically invalid nonrandom samples—which they are—the simple fact that they ignore the role of price should render them inutile as any basis for public policy.

Environmentally minded people generally agree that we should do more to clean the air, that we should drive less, and that we should boost public transportation. Right-leaning libertarians generally agree that the government should not provide goods and services that the market can provide better. And economically minded people generally agree that there is no such thing as a free lunch: that while people should have choices, they should also shoulder the full costs of the choices they make. Removing minimum parking requirements and turning parking over to the market provides us with a rare opportunity to satisfy the environmentally minded, the economically minded, and the efficiency minded. Market priced parking—both on and off the street—will give the downtown renewed vitality, help fight congestion and pollution, remove distorted incentives and warped prices from the transportation system, and get the government out of a business that it lacks the tools and expertise to regulate. It will do a world of good.

V. References

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