

Collegetown

URBAN PLAN & DESIGN GUIDELINES



City of Ithaca Department of Planning and Development

GOODY
CLANCY
ARCHITECTURE
PLANNING
PRESERVATION

W-ZHA
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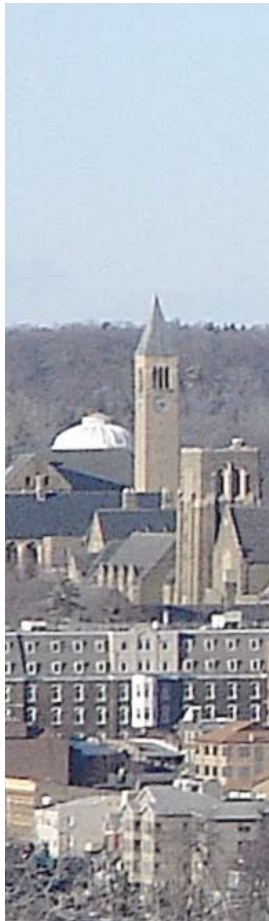


Photo by Ken Vineberg

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4. A Sustainable Transportation System



Central to preserving and improving the prosperity of Collegetown will be the successful management of its transportation systems, which today severely limit walking, biking, and transit opportunities as described earlier in Chapter 2. The current heavy subsidy for driving in the district promotes excessive vehicle trips.

When combined with the resulting disinvestment in alternatives to driving, Collegetown has become the victim of unsustainable transportation policies that rely too much on the private automobile and not enough on more cost-effective, high-capacity – and sustainable – modes.

In addition to a solid set of neighborhood design guidelines and zoning changes, a new set of transportation management programs needs to be put in place to help create the lively and walkable environment current residents seek and future residents and employees will need to break the over-reliance on private vehicles. This section lays out the elements of a “sustainable transportation system” or “STS” for Collegetown.

SUMMARY

Summary of Program

The STS program would include the following steps:

Pursue a “Park Once” Strategy.

Make efficient use of the existing parking supply by including as many spaces as possible in a common pool of shared, publicly available spaces. Parking supply for all Collegetown retail, office, and residential users should be shared, with the exception of residents and employees who are willing to pay a premium for exclusive, assigned spaces. A “Park Once” strategy also includes clear parking signage and is complemented by parking management and pricing policies that encourage maximizing the number of destinations accessed by one parker from one parking space. Improvements to the walking environment are another necessary complement.

Create a Commercial Parking Benefit District.

To create vacancies and turnover of the most convenient “front door” curb parking spaces for merchants’ customers, install multi-space parking meters with parking prices set at rates that create a 15% vacancy rate on each block, and do not institute time limits. Dedicate all resulting meter revenue to public improvements in Collegetown.

Provide Universal Transit Passes.

A universal transit pass program would provide all residents and employees of Collegetown with a fully-subsidized transit pass for unlimited rides on TCAT buses at no cost to the rider. Universal transit pass programs allow annual passes to be purchased at a deeply discounted bulk rate for all members of a specified group, such as all of a firm’s employees, or all of the residents of an apartment complex. Negotiating a similar program for Collegetown with TCAT will benefit both employees and residents, and cost-effectively reduce parking demand. TCAT already receives a subsidy from Cornell for their successful universal transit pass program,

Omnipass, which provides transit services to Cornell employees at no cost to the employee. With Cornell's assistance, this program could be easily expanded and administered for Collegetown.

Require "Parking Cash-Out."

Many employers in Collegetown are likely to wish to provide free parking for their employees as a fringe benefit. Employers should be allowed to do so, provided that they also offer the cash value of the parking subsidy (i.e., \$290 per month) to any employee who does not drive to work. Such "Parking Cash Out" programs provide an equal transportation subsidy to employees who ride transit, carpool, walk, or bicycle to work. A primary benefit of parking cash of such programs is their proven effect on reducing auto congestion and parking demand.

Charge for parking separately from the cost of residential or commercial space.

For all residential units, the full cost of providing parking should be "unbundled" from the cost of the housing itself, by creating a separate parking charge. Currently, it is estimated that the construction cost for underground parking spaces in Collegetown will total approximately \$45,000 per space. This translates to an annualized cost of almost \$290 per space per month. Unbundling this large cost will change parking in Collegetown from a required purchase to an optional amenity, so that residents can freely choose how many spaces they wish to lease. For lower income residents, many of whom have no car or only one car, this will provide substantial savings. Charging separately for parking is also the single most effective strategy to encourage households to own fewer cars. Designated parking spaces should be leased for a rate which covers the full cost to build and operate the space (i.e., \$290 per month), whereas shared parking spaces should be leased to residents at a discount.

As with parking for residential units, the full cost of providing employee spaces should be unbundled from the cost of leasing commercial space, providing employers with a strong financial in-

centive to participate in transportation demand management programs that will reduce employee parking demand. As with residential, designated parking spaces should be leased at a rate which covers the full cost to build and operate the space (i.e., \$290 per month), whereas shared parking spaces should be leased to businesses at a discount. A key strategy to complement unbundling is the use of a parking in-lieu payment.

Implement a “parking in-lieu” payment.

Where zoning requirements for minimum numbers of parking spaces exist, a “Parking In-Lieu” fee or payment has found great success in the U.S. at reducing parking supply for dense mixed-use areas that have lower parking demand or high potential for sharing. The in-lieu value is intended to be set lower than the cost to build parking structures, providing an incentive to reduce supplies. In jurisdictions such as Collegetown that have zoning minimums far in excess of the actual demand (the office requirement of four spaces per 1,000 square foot building area is nearly twice the national observed average in areas with little transit access), the in-lieu amount may be lowered substantially below the construction cost to encourage sharing of existing supplies of parking. While one-time payments are common, a recurring annual payment that is specifically dedicated to promoting and developing shared parking facilities and programs or alternate modal improvements is best for creating a sustainable transportation environment. This strategy must be complemented by zoning flexibility with regard to proximity of accessory parking, sharing of parking, and third-party ownership of required supplies. If there are fears of reducing supplies too much, a lowered minimum may still be enforced for participating developments.

Establish a car sharing program.

Contract with the new local car sharing provider, Ithaca Car Share, to provide one or more car sharing vehicles in Collegetown. Car sharing makes a common fleet of vehicles available to members for rental by the hour or by the day, and can be an important tool to reduce parking demand. Combined with a parking cash-out, user fees can be heavily subsidized.

Institute additional supportive transportation demand management measures.

Provide and actively market additional measures to support alternative transportation, such as a Guaranteed Ride Home program, and a transportation information package for new employees and residents. Many successful programs exist for Cornell faculty and staff that could easily be cost-effectively expanded to Collegetown employees with Cornell's assistance.

Establish a residential parking benefit district.

To prevent unwanted spillover parking into the neighborhoods adjacent to Collegetown, implement a Residential Parking Benefit District for these neighborhoods. Many cities implement residential permit districts (also known as preferential parking districts) by reserving on-street parking spaces for residents only, usually issuing permits for free or a nominal fee. Residential Parking Benefit Districts are similar, but also allow a limited number of commuters to pay to use any surplus on-street parking spaces in the neighborhood. The resulting revenue is returned to the neighborhood to fund public improvements.

Investigate alternative infrastructure improvements.

Provide bicycle parking.

Provide both bicycle racks for short-term parking throughout Collegetown – especially near popular retail destinations – as well as secure, fully-enclosed long-term bicycle parking for residents and employees in all new buildings. All parking should adhere to the latest design standards advocated by the Association of Pedestrian and Bicycle Professionals (www.apbp.org). Cornell may be able to function as an initial provider based on their success with abundant bike parking on their campus immediately across the gorge from Collegetown.

Install improvements to the pedestrian realm.

The high numbers of pedestrians walking in Collegetown today occurs despite many narrow sidewalks with frequent obstructions. The potential to greatly increase walk shares – particu-

larly for non-student residents, employees, and visitors – is high in Collegetown given a program that enhances transit access and the “Park Once” environment.

Improve transit facilities.

Basic improvements that increase the visibility, convenience, and amenity of riding transit can be made in Collegetown, including installation of bus shelters, installation of schedule holders or route kiosks, branding of key routes to remote parking and other key destinations, development of Collegetown-specific transit guides, etc.

When implemented as a package, the measures described above reinforce each other. For example, unbundling the cost of parking from the cost of renting an apartment allows low-income residents to save several hundred dollars a month by giving up a car. Providing a car-sharing service makes it easier for residents to make that choice, since they can have access to a vehicle when they need one. For the car-sharing provider, unbundling parking costs increases the financial viability of their operation, since residents have a powerful financial incentive to reduce their vehicle ownership.

Understanding the Imbalance of Modal Priorities

Central to understanding the need for the proposed Sustainable Transportation System is understanding the role that parking plays in the development and daily life of Collegetown or, for that matter, any semi-urban district in America. Parking has a unique roll in American life that has largely been overlooked by planners, developers, and drivers alike. Unlike any other form of transportation, the cost of parking is disassociated from its mode of transportation: the car. All modes have vehicles and terminals to access those vehicles: airplanes have expensive airports shared by multiple airlines with multiple flights that pay high user fees passed on to travelers; ships have enormous ports with vast longshore resources, each serving entire regions, with terminal and shipping costs a part of passenger tickets and bills of lading; and trains operate between stations, each with valuable land connections serving multiple purposes – of which a large part of the cost is passed on to the rider. However, the automobile must have a terminal at each and every destination, but 99% of all terminal arrivals are free to the driver in America. The user rarely pays the real cost to park. Even in Collegetown, where drivers must usually pay to park, the fees that are charged do not begin to cover the real cost of providing the terminal space for automobiles. The most expensive parking garage in Collegetown – which charges \$225 per month – has an estimated actual cost of \$330 per month (see Chapter 2). As a result, drivers parking there receive a subsidy to drive and park their car of over \$100 per month. If land value is factored in, an undeveloped surface parking space in Collegetown is estimated to have a value of at least \$420 per month, but the average surface parking charge is only \$50 per month – a subsidy of \$370 per month to anyone who wants to drive. This economic reality has been a way of life for Americans since the automobile began to proliferate as a means of transportation. Federal subsidies, local land use regulations, and development costs have largely hidden the cost of parking from the user, forcing it to be absorbed in many other aspects of our economy, such as housing and insurance costs, taxes, and the cost of goods and services. One source placed the annual national subsidy for parking infrastructure in America at over \$300B in 2002 dollars¹. In 2002, the budget

for national defense was \$349B. The hidden cost of motor vehicle transportation has recently become very clear as spiking gas prices have increased many other costs in our daily lives.

In the past several years, many communities have begun to rationalize the subsidy that is given to driving through the hidden cost of parking. Communities such as Pasadena California, Boulder Colorado, Austin Texas, and Arlington County Virginia have recognized that their transit, walking, and biking infrastructure was receiving far less subsidy if any at all. These communities, along with many large and small businesses throughout America, also began to recognize that the cost of building superior transit, walking, and biking facilities was much cheaper than building more parking, especially in places like Collegetown that have high land values and high construction costs. Often driven by the accountants as their private partners², these communities quickly recognized that the massive amount of money directed at parking could instead be directed at broader community improvements that simultaneously reduced the demand for parking. Today, these communities have extensive and attractive multi-modal transportation systems that are financed almost entirely by the cost savings of not building parking structures.

Collegetown stands to learn a great amount from the experiences of these communities and businesses. By recognizing the growing modal inequity that is propagated by huge parking subsidies, Collegetown can redirect this enormous parking cost into community improvements that can achieve the goals of the Collegetown Vision Statement while preserving a vital mixed-use neighborhood for years to come.

The following program suggestions are derived from a review of best parking and transportation demand management practices conducted in communities throughout the United States.

¹ Mark Delucchi, University of California at Davis, 1997.

² For example, see Boulder's Central Area General Improvement District, where downtown parking construction decisions are managed by business members who directed investment in alternative modes of transportation when presented with the true cost of building new parking.

The following program suggestions are derived from a review of best parking and transportation demand management practices conducted in communities throughout the United States.

STS Program Elements

The detailed parking management and transportation demand management measures for the proposed sustainable system follow. These elements are designed to meet several goals:

- Provide shoppers, employees and residents with sufficient parking, in a manner that is convenient and cost-effective;
- Provide additional transportation choices, including transit, carpool, bicycle and pedestrian facilities and services;
- Advance the broader goals of the Collegetown vision statement by creating a neighborhood that is genuinely oriented towards transit, walking, and bicycling.

The STS program emerges from an understanding that parking and transportation policies have powerful effects not merely on parking demand, but on development feasibility, housing affordability, the amount of traffic produced by new developments, the quality of its urban design, and many other fundamental aspects that make Collegetown a place.

element 1 pursue a “Park Once” strategy

Goals

Make efficient use of the parking supply by including as many spaces as possible in a common pool of shared, publicly available spaces. Share existing parking resources efficiently as a flexible pool, rather than as many small, inefficient private parking areas. Complement with clear signing and pedestrian-oriented strategies.

Fundamentals

The creation of a “Park Once” environment is fundamental to Collegetown’s goal of creating a walkable district. The typical pattern of individual buildings, each with its own parking supply, requires two vehicular movements and a parking space to be dedicated for each visit to a shop, office, or residence. To accomplish three errands in this type of environment requires six movements in three parking spaces for three tasks. With virtually all parking held in private hands, spaces are not efficiently shared between users, and each building’s private parking is typically

sized to handle a worst-case parking load.¹ Most significantly, when new buildings are required to provide such worst-case parking ratios, the result is often pedestrian-hostile buildings that hover above parking decks.

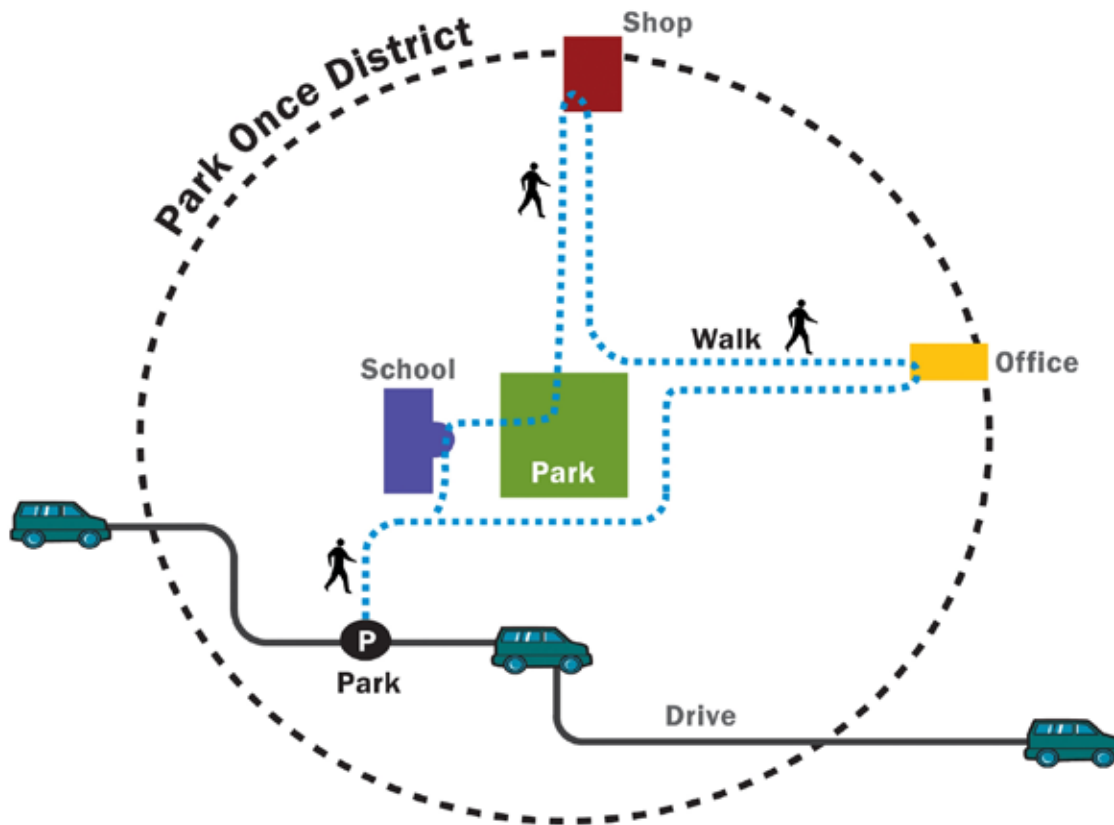
When the practice of building individual private lots or garages for each building is adopted, the result is also a lack of welcome for customers: at each parking lot, the visitor is informed that his vehicle will be towed if he or she visits any place

¹ Most minimum zoning requirements for parking supplies assume a conservative margin above the estimates produced by sources such as *Parking Generation*, Third Edition, published by the Institute of Transportation Engineers. For instance, in Ithaca the standard of 4 spaces per 1,000 square feet of office space is used, while ITE’s average rate for offices is 2.5 spaces. This manual provides parking occupancy data observed at various individual land uses throughout the United States, and is the most commonly used reference for parking studies. It should be noted, however, that the parking occupancy rates in *Parking Generation* were measured at stand-alone, single-use suburban sites with little or no transit and ample free parking. Using these rates without any adjustment would be likely to overstate the parking demand in a pedestrian-friendly and mixed-use place like Collegetown.

besides the adjacent building. When this occurs, nearby shopping malls gain a distinct advantage over a district with fragmented parking. Mall owners understand that they should not divide their mall’s parking supply into small fiefdoms: they operate their supply as a single pool for all of the shops, so that customers are welcomed wherever they park.

The compactness and mixed-use nature of Collegetown lends itself to this kind of “Park Once” strategy. Operating the downtown parking supply as a single shared pool results in significant savings in daily vehicle trips and required parking spaces, for three reasons:

Fig. 4-1 “Park Once” District



Based on an original illustration by Walter Kulash.

Park once

Those arriving by car can easily follow a “park once” pattern: they park their car just once and complete multiple daily tasks on foot before returning to their car (see Fig. 4-1).

Shared parking among uses with differing peak times.

Spaces can be efficiently shared between uses with differing peak hours, peak days, and peak seasons of parking demand (such as office, restaurant, retail, and the performing arts center).

Shared parking to spread peak loads.

The parking supply can be sized to meet average parking loads (instead of the worst-case parking ratios needed for isolated buildings), since the common supply allows shops and offices with above-average demand to be balanced by shops and offices that have below-average demand or are temporarily vacant.

To implement a “Park Once” strategy, parking in Collegetown must be managed as a public utility, just like streets and sewers, with public parking provided in strategically-placed lots and garages. In the future, development should be prohibited (or strongly discouraged) from building private parking: in cases where certain tenants, such as new offices, require a guarantee

of a certain number of spaces at particular hours (e.g., Monday through Friday, 9 a.m. to 5 p.m.), they should be provided with the opportunity to lease those spaces in a public lot or garage, with the exclusive right to use them during the hours required. As described above, such arrangements leave the parking available during evening and weekend hours for other users (e.g., patrons of restaurants), resulting in an efficient sharing of the parking supply and lower costs for all.

Implementation of simple signing improvements helps motorists easily find shared parking facilities when they chose not to seek on-street parking. Current signing for and visibility of the Dryden Road garage, for example, is very poor, and the pedestrian experience entering and exiting it is threatening. This highly valuable asset should be made significantly more inviting and secure for all users.

Overall, the benefits of fully implementing a “Park Once” strategy for the entire district include:

- A more welcoming environment for customers and visitors (fewer “Thou Shalt Not Park Here” signs scattered about).
- The need for fewer, strategically placed lots and garages, resulting in better urban design and greater development opportunities.

- Construction of larger, more space-efficient (and therefore more cost-effective) lots and garages.

Finally, and perhaps most importantly, by transforming motorists into pedestrians, who walk instead of drive to different nearby destinations, a “Park Once” strategy is an immediate generator of pedestrian life, creating crowds of people who animate public life on the streets and generate the patrons of street friendly retail businesses.

Program Details

Make efficient use of the parking supply by including as many spaces as possible in a common pool of shared, publicly available spaces. This “Park Once” strategy should be implemented through the following policies:

1. Incentives to encourage participation by existing parking facility owners and operators need to be in place. These can take the following forms:
 - a. Increased regulatory flexibility to encourage sharing, including elimination of distance requirements for accessory parking, elimination of any stipulation on shared parking, elimination of any code-based requirements that discourage public access, etc.

- b. Pooled liability protection whereby multiple parking facility owners can purchase a replacement joint policy to allow public access for lower rates than existing policies.
- c. Creation of a parking authority or other public-private entity that manages the shared off-street (and on-street) parking supply. This entity can offer greater economies of scale than individual parking operators can afford, greatly reducing labor, security, insurance, maintenance, and other related costs, while also allowing greater purchasing power. When combined with revenues from a parking benefit district (see Element 2 below), this entity has the ability to afford regular maintenance, improve parking amenities (lighting, signing, driver services), and offer guaranteed lease rates to private operators in return for the ability to operate those lots in the shared pool.
2. The parking supply for the retail, office, and residential users in Collegetown should be shared among all users, with the following exception: residents and employees who are willing to pay a premium rate for exclusive, assigned spaces should be allowed to do so. (Residents of market rate units are most likely to take advantage of this option.) To implement this policy, parking leases can be struc-

tured in the following manner:

- a. Under the *standard lease rate*, the parking permit holder is guaranteed that a parking space will be available within the shared pool of spaces for him or her to use, but no particular space is marked with his or her name.
- b. Under the *premium* rate for assigned spaces, the parking permit holder has a particular space designated (with signs and markings) for his or her use. For example, an assigned residential space may be marked “Reserved for Unit #101”, while assigned employee spaces may be marked reserved for an individual permit holder (“Reserved for Permit #81”). Two types of premium spaces should be made available. The most expensive option is a space that is reserved 24 hours per day, seven days a week for the permit holder’s exclusive use. The less expensive alternative is reserved for the permit holder’s exclusive use only during the hours when the space is typically needed. For example, a typical retail tenant may wish to choose a space that is reserved for his or her firm’s use only when the business is open – say, from 9 a.m. to 5 p.m. on Monday through Friday, in the case of a realtor’s office. (With this latter alternative, the retail tenant saves money by

having the space assigned for their use only part-time, and the space becomes available for other users – such as restaurant patrons – on evenings and weekends). In general, tenants should be encouraged to lease assigned spaces only for the hours and days of the week when they most require exclusive use.

3. As future properties are developed, their parking supplies should also become part of the Park Once district. This may be accomplished either by creating additional new joint or remote public parking facilities as part of development agreements for each site or through conditions of approval that require that the privately-owned parking supply be made available for public use.
4. As the area becomes fully developed and demand for parking increases, instituting valet parking services (particularly for restaurant patrons, if a strong restaurant trade developed) should be considered, since this will allow the most effective use of out of the way parking spaces and can increase the effective parking supply by allowing for parking of additional vehicles in parking aisles and in tandem parking arrangements.

element 2 create a commercial parking benefit district

Goals

To (1) efficiently manage demand for parking while accommodating customer, employee and resident parking needs, and (2) put customers first: create vacancies and turnover of the most convenient “front door” curbside parking spaces to ensure availability for customers and visitors.

Fundamentals

Many downtown districts suffer from a common problem. The most visible and most convenient parking spaces are frequently entirely full, while simultaneously, parking spaces just behind or just under a building – or a block away – sit largely vacant. The result is often a perceived parking shortage, even when a district as a whole has hundreds of vacant parking spaces available. In many downtowns, employees occupy the best spaces, even when time limits are instituted to try to reserve these spots for customers. As one downtown merchant describes the situation in his town, “Parking is a problem for businesses because employees park on Main St. and side

streets and prevent customers from parking...We need parking management and enforcement strategies to prevent employees from doing the ‘two-hour shuffle’ downtown.”

Always available, convenient, on-street customer parking is of primary importance for Collegetown retail to succeed. To create vacancies and rapid turnover in the best, most convenient, front door parking spaces, it is crucial to have price incentives to persuade some drivers – especially employees – to park in the less convenient spaces (in underground garages or in available on-street parking a block or two away): higher prices for the best spots and cheap or free prices for the less convenient, currently underused spaces.

Motorists can be thought of as falling into two primary categories: bargain hunters and convenience seekers. Convenience seekers are more willing to pay for an available front door spot. Many shoppers and diners are convenience seekers: they are typically less sensitive to parking charges because they stay for relatively short periods of time, meaning that they will accumulate less of a fee than

an employee or other all-day visitor. By contrast, many long-stay parkers, such as employees, find it more worthwhile to walk a block to save on eight hours worth of parking fees. With proper pricing, the bargain hunters will choose currently underutilized lots, leaving the prime spots free for those convenience seekers who are willing to spend a bit more. For Collegetown merchants, it will be important to make prime spots available for these people: those who are willing to pay a small fee to park are also those who are willing to spend money in stores and restaurants.

What are the alternatives to charging for parking?

The primary alternative that cities can use to create vacancies in prime parking spaces is to set time limits and give tickets to violators. Time limits, however, bring several disadvantages: enforcement of time limits is labor-intensive and difficult, and downtown employees, who quickly become familiar with enforcement patterns, often become adept at the “two hour shuffle”, moving their cars regularly or swapping spaces with a coworker several times during the workday. Even

with strictly enforced time limits, if there is no price incentive to persuade employees to seek out less convenient, bargain-priced spots, employees will probably still park in prime spaces.

For customers, strict enforcement can bring “ticket anxiety,” the fear of getting a ticket if one lingers a minute too long (for example, in order to have dessert after lunch). As Dan Zack, Downtown Development Manager for Redwood City, CA, puts it, “Even if a visitor is quick enough to avoid a ticket, they don’t want to spend the evening watching the clock and moving their car around. If a customer is having a good time in a restaurant, and they are happy to pay the market price for their parking spot, do we want them to wrap up their evening early because their time limit wasn’t long enough? Do we want them to skip dessert or that last cappuccino in order to avoid a ticket?”

A recent Redwood City staff report summarizes the results found in downtown Burlingame, California:

In a recent “intercept” survey, shoppers in downtown Burlingame were asked which factor made their parking experience less pleasant recently... The number one response was “difficulty in finding a space” followed by “chance of getting a ticket.” “Need to carry change” was third, and the factor that least concerned the respondents was “cost of parking.” It is interesting to note that Burlingame has the most expensive on-street parking on the [San Francisco] Peninsula (\$.75 per hour) and yet cost was the least troubling factor for most people.

This is not an isolated result. Repeatedly, surveys of downtown shoppers have shown that the availability of parking, rather than price, is of prime importance.

What is the right price for on-street parking?

If prices are used to create vacancies and turnover in the prime parking spots, then what is the right price? An ideal occupancy rate (on each and every block) is approximately 85% at even

the busiest hour, a rate which leaves about one out of every seven spaces available². This provides enough vacancies that visitors can easily find a spot near their destination when they first arrive. For each block and each parking lot in Collegetown, the right price is the price that will achieve this goal. This means that pricing should not be uniform: the most desirable spaces need higher prices, while less convenient spots are cheap or may even be free. Prices should also vary by time of day and day of week: for example, higher at noon and lower at midnight.

Ideally, parking occupancy for each block of on-street spaces and each garage should be monitored carefully, and prices adjusted regularly to keep enough spaces available. In short, prices should be set at market rate, according to demand, so that just enough spaces are always available. Professor Donald Shoup of UCLA advocates setting prices for parking according to the “Goldilocks Principle”:

² This rate is a widely-accepted industry standard that provides a high level of convenience for parkers and largely eliminates the circling for parking which contributes to increased driver frustration, traffic congestion and collisions.

The price is too high if many spaces are vacant, and too low if no spaces are vacant. Children learn that porridge shouldn't be too hot or too cold, and that beds shouldn't be too soft or too firm. Likewise, the price of curb parking shouldn't be too high or too low. When about 15 percent of curb spaces are vacant, the price is just right. What alternative price could be better?³

If this principle is followed, then there need be no fear that pricing parking will drive customers away. After all, when the front-door parking spots at the curb are entirely full, under-pricing parking cannot create more curb parking spaces for customers, because it cannot create more spaces. And, if the initial parking meter rate on a block is accidentally set too high, so that there are too many vacancies, then a policy goal of achieving an 85% occupancy rate will result in lowering the parking rate until the parking is once again well used (including making parking free, if need be).

³ Shoup, D. (2005) *The High Cost of Free Parking*. Chicago: Planners Press.

Do not institute time limits

Once a policy of market rate pricing is adopted, with the goal of achieving an 85% occupancy rate on each block, even at the busiest hours, then time limits need not be instituted. With no time limits, much of the worry and “ticket anxiety” for downtown customers disappears. In Redwood City, where this policy was recently adopted, Dan Zack describes the thinking behind the City’s decision in this way:

Market-rate prices are the only known way to consistently create available parking spaces in popular areas. If we institute market-rate prices, and adequate spaces are made available, then what purpose do time limits serve? None, other than to inconvenience customers. If there is a space or two available on all blocks, then who cares how long each individual car is there? The reality is that it doesn't matter.

Program Details

The recommendations for pricing parking, not instituting time limits, and the creation of a commercial parking benefit district, are discussed in greater detail below.

Initial meter rates and hours of operations for paid parking in the Commercial Parking Benefit District

To create vacancies and turnover of the most convenient “front door” curb parking spaces, install multi-space parking meters in all time-limited areas of Collegetown. Set parking prices at rates that create a 15% vacancy rate on each block, and do not institute time limits. (Note that in some areas, rates that provide the first hour or 90 minutes free of charge may be sufficient to create a 15% vacancy rate.) Dedicate all resulting surplus meter revenue to public improvements for Collegetown.

Ideal hourly parking rates vary according to the time of day. The first 20 minutes may be free but every additional hour is priced according to the best value at that period of time in the day. Morning hours are generally cheaper, lunch hours demand a higher fee, afternoon hours reduce in price, and evening hours – especially on weekends – are likely to demand the highest rates. This rate structure makes parking free or cheap

for short-stay visitors (such as retail customers), makes all day parking much more expensive, and creates availability during high demand dining and entertainment hours. Employees and residents are discouraged from parking at the meter spaces that are intended for customers, and are encouraged to purchase a monthly permit. Because of the variable rates, monthly permits (intended for residents and employees) are less expensive than parking all day at the meters. However, any monthly fee would ideally cover the actual full cost of providing parking.

The following rates are illustrative of the principles described above. A more detailed assessment of current revenues and utilization is necessary to finalize rates.

For prime, front door, curb spaces:

	10am-12pm	12pm-2pm	2pm-6pm	6pm-12am	12am-10am
Mon – Sat	\$1/hr	\$2/hr	\$1/hr	\$2/hr	\$0
Sunday	\$.50	\$1/hr	\$.50	\$1/hr	\$0

For Dryden Road Garage Spaces:

	10am-12pm	12pm-2pm	2pm-6pm	6pm-12am	12am-10am
Mon – Sat	\$.75/hr	\$1.50/hr	\$.75/hr	\$1.50/hr	\$0
Sunday	\$.25	\$.75/hr	\$.25	\$.75/hr	\$0

Curb Parking On Edges of District:

	10am-12pm	12pm-2pm	2pm-6pm	6pm-12am	12am-10am
Mon – Sat	\$.75/hr	\$1.50/hr	\$.75/hr	\$1.50/hr	\$0
Sunday	\$.25	\$.75/hr	\$.25	\$.75/hr	\$0

Monthly permit rates

Monthly permits should be sold for garage spaces and some more remote portions of the district.

- Assigned garage space, 24 hours per day: \$250 per month
- Standard monthly garage permit, 24 hours per day: \$200 per month
- Assigned garage space, eight hours per day: \$90 per month
- Standard monthly garage permit, eight hours per day: \$60 per month
- Monthly on-street permit or hang-tags, 24 hours per day (remote locations): \$60 per month

As discussed earlier, a standard monthly permit guarantees that the resident or employee holding the permit will be able to find a space somewhere within a parking garage, but does not mark a particular space as exclusively reserved for the permit holder's vehicle.

Adjust meter rates and hours of operation

After an initial trial period, occupancy rates for each block and each parking facility should be reviewed and then adjusted down or up to achieve the 85% occupancy goal, as described earlier. To ensure that this happens on a regular schedule, promptly, and with clear assurance to policymak-

ers, citizens and other stakeholders – especially retail tenants – that the goal of parking prices is to achieve the desired vacancy rate, the following procedure for adjusting parking meter rates and hours is recommended:

1. **Set Policy:** By ordinance, City Council should establish that the primary goal in setting parking meter rates and hours for each block and each lot is to achieve an 85% occupancy rate. Additionally, the ordinance should both require and authorize City staff to raise or lower parking prices to meet this goal, without requiring further action by the Board of Public Works or Common Council. A Transportation Manager should be hired and charged with the responsibility of running the district, including monitoring occupancy rates and adjusting rates.
2. **Monitor occupancy:** Modern, wirelessly-networked multi-space parking meters (as described below) are capable of instantly transmitting current information on the number of spaces in use on each block where the meters are installed, giving the Transportation Manager the ability to constantly monitor parking usage in the system. Reports can also be generated to track occupancy by the hour over the course of a day, weeks, or months.
3. **Adjust rates:** Armed with good information on recent parking occupancy rates, the Transpor-

tation Manager should adjust the rates (and hours of operation) up or down on each block, to achieve the policy goal (an 85% occupancy rate) set by the Council. Typically, rates should be adjusted quarterly (four times per year), but in the case of major changes, such as the opening of a new building or a major new use, it may be advisable to adjust rates in response. In later years, it is likely that the initial free period for parking will need to be phased out, in order to maintain sufficient vacancies (and to make more money).

Recommended payment system and metering technology

There are several meter technologies and payment systems that Collegetown could use. Best approaches include:

- Multi-space meters (not single-space meters) that:
 - Can control 10-20 parking spaces, resulting in just one or two meters per block face.
 - Accept multiple forms of payment (coins, credit cards) and allow the user to extend time from any other meter, or by cell



phone, to provide ease of use.

- Are solar powered and centrally networked with wireless technology, to reduce operations costs and improve parking management and pricing decisions.
- A “pay-by-space” payment system which allows motorists to park, pay, and go (not pay-and-display, which requires a customer to return to his or her vehicle to display a receipt and can contribute to litter problems)



lection costs, such as purchase and operation of the meters, enforcement and the administration of the district.) If downtown parking revenues seem to disappear into the General Fund, where they may appear to produce no direct benefit for Collegetown, there will be little support for installing parking meters, or for raising rates when needed to maintain decent vacancy rates. When Collegetown merchants and residents can clearly see that the monies collected are being spent for the benefit of their district, on projects that they have helped to choose, they become willing to support market rate pricing – and if experience from other cities is any guide, many will become active advocates for the concept.⁴

To ensure such continuing support for a Parking Benefit District, and for continuing to charge fair market rates for parking, it is crucial to give local stakeholders a strong voice in setting policies for the district, deciding how downtown parking revenues should be spent, and overseeing the operation of district to ensure that the monies collected from their customers are spent wisely.

Establish Commercial Parking Benefit District: Dedicate parking revenues to public improvements and services that benefit the Collegetown Area.

Net revenues from paid parking in the Commercial Parking Benefit District should fund public improvements that benefit Collegetown. (“Net revenues” means total parking revenues from the area, less existing base costs, such as revenue col-

Potential uses of meter revenue from Parking Benefit District

Potential uses for Parking Benefit District revenues include:

- Landscaping and streetscape greening
- Increased frequency of trash collection
- Street cleaning, power-washing of sidewalks, and graffiti removal
- Parking, transit, pedestrian, and bicycle infrastructure and amenities
- Additional police patrols or “Collegetown Ambassadors” to provide additional security
- Additional parking enforcement
- Marketing and promotion of Collegetown merchants
- Purchase and installation costs of meters (e.g., through revenue bonds or a “build-operate-transfer” financing agreement with a vendor)
- Additional programs and projects as recommended by Collegetown stakeholders and approved by City Council

Organizational Structure For the Parking Benefit District

A number of different organizational structures can be used to establish a Parking Benefit District in Collegetown. The district can be a quasi-public entity, similar to a Business Improvement District. Alternatively, the district can be established as simply a financial entity (somewhat like

⁴ Parking Benefit Districts are currently in place in Pasadena, Boulder, San Diego, Austin, Seattle, and Aspen.

an assessment district), which would require by ordinance that meter revenues raised within the district be spent to benefit the district. In this latter case, establishing the district would serve primarily to reassure Collegetown stakeholders that the revenues will remain within the district. Under this arrangement, the district would be managed and housed within an existing City agency such as the Department or Public Works.

Regardless of the ultimate organizational structure implemented, a focused effort, with well-trained staff, will be needed to refine and implement the recommendations made within this document and to then manage the ongoing operation of the system. The most important actions include:

- **Establishing the Commercial Parking Benefit District, and managing it thereafter.** This includes responsibility for installing and operating the parking meter system, selling monthly permits, monitoring parking occupancy and proposing rate adjustments, overseeing collection and expenditure of parking revenues, and in general, operating the Collegetown parking system in a customer-friendly way.
- **Establishing and managing the “Park Once” strategy for the district,** working to ensure that both new and existing parking is managed

and operated as a common pool. This would encompass everyday operations, such as keeping parking areas clean, properly signed and well lit. It would also mean the administration of lease-back programs for private parking supplies that are managed by the district.

- **Establishing and managing alternative transportation programs for the district,** to ensure that the district invests in the most cost-effective mix of parking, transit, bicycle and pedestrian improvements, including those recommended in Element 10 below.
- **Explain and assist in enforcing the transportation demand management requirements** (such as “unbundling” parking costs from office leases and residential rents) as recommended in Elements 3 through 7 of this plan.

Alternatively, some of the responsibilities listed above could be managed by the property manager or building manager for each new development. However, if responsibilities are divided, it is essential that the different pieces of the parking and transportation program (especially the setting of parking prices) continue to be operated as a single coherent system.

Additional recommendations for implementing a commercial Parking Benefit District

The City should pursue the following additional strategies when implementing the Commercial Parking Benefit District:

- Conduct community outreach & education prior to launch of new pricing.
- Install user-friendly signage to explain meter operation, rates, and hours/days of operation.
- Use “Mobility Ambassadors” to assist with meters during first few weeks of implementation & during peak visitor demand periods.
- Create mechanisms (such as regular advisory meetings, surveys, etc.) for soliciting ongoing input from Collegetown businesses, visitors, and other key stakeholders and for resolving customer service issues and stakeholder concerns.

element 3 provide universal transit passes

Goal

Increase transit ridership and provide incentives to reduce vehicle ownership by providing free transit passes to all Collegetown residents and employees.

Fundamentals

In recent years, growing numbers of transit agencies have teamed with universities, employers, operators of multi-family residential complexes and even with entire residential neighborhoods to provide universal transit passes. Universal transit pass programs, such as the Ecopass program created by Santa Clara County's Valley Transportation Authority, allow annual passes to be purchased at a deeply discounted bulk rate for all members of a specified group, such as all of a firm's employees, or all of the residents of an apartment complex. Negotiating with TCAT a similar program for Collegetown will benefit both employees and residents while cost-effectively reducing parking demand.

TCAT already has years of experience with a universal transit pass program. Cornell's existing Omnipass has been highly successful at reducing parking demand at Cornell for over 15 years. However, the program is limited to faculty and staff. As Collegetown seeks to take advantage of the benefits of this program, the high proportion of Cornell students among Collegetown residents may necessitate expanding the Omnipass to the student body. Cornell should be encouraged to evaluate how this could occur, especially since the exclusion of students from Omnipass essentially preserves higher parking demand among students – and that parking demand directly affects land values, aesthetics, and development potential in Collegetown. The notable cost savings benefit that Cornell has experienced for years with Omnipass by not having to build hundreds of extra faculty and staff parking spaces should be shared by Collegetown with an expansion of the program to students.

A typical example of an ideal universal transit pass is the Eco-Pass program in downtown Boulder, which provides free transit on Denver's

Regional Transportation District (RTD) light rail and buses to more than 7,500 employees, employed by 700 different businesses in downtown Boulder. To fund this program, Boulder's downtown parking benefit district pays a flat fee for each employee who is enrolled in the program, regardless of whether the employee actually rides transit. Because every single employee in the downtown is enrolled in the program, the Regional Transportation District in turn provides the transit passes at a deep bulk discount.

A review of existing universal transit pass programs found that the annual per employee fees are between 1% and 17% of the retail price for an equivalent annual transit pass.⁵ The principle of employee or residential transit passes is similar to that of group insurance plans – transit agencies can offer deep bulk discounts when selling passes to a large group with universal enrollment on the basis that not all those offered the pass will actually use them regularly.

5 INSERT REFERENCE

Residential Transit Pass Programs

Universal Transit Pass programs have also been successfully created for a wide range of residential developments. In Santa Clara County, CA and Portland, OR property managers can bulk-purchase transit passes for their residents at deeply discounted rates. An affordable housing provider in San Jose, First Community Housing, provides all tenants of their developments (10 complexes in all) with a VTA Ecopass, giving them unlim-

ited rides on VTA bus and light rail lines in Santa Clara County. First Community Housing pays \$30 per year for each pass issued, and is required to purchase a pass for every resident. Residents receive their Ecopasses for free, saving each resident the \$700 per year cost of an annual bus pass. In a survey of First Community Housing residents, 22% of the survey respondents indicated that having an Ecopass has allowed them to

reduce the number of cars in their household, resulting in less traffic, lower parking demand and reduced parking costs. Jeff Oberdorfer, Executive Director of First Community Housing, reports that, “Saving the construction cost of two parking spaces pays for our entire Eco Pass program.”⁶ Universal transit passes are usually extremely effective means to reduce the number of car trips in an area, as shown in Table 4-1.

Table 4-1 Effects of Universal Transit Pass Introduction

Location	Drive to work		Transit to work	
	Before	After	Before	After
Municipalities				
Santa Clara (VTA)	76%	60%	11%	27%
Bellevue, Washington	81%	57%	13%	18%
Ann Arbor, Michigan	N/A	(4%)	20%	25%
Downtown Boulder, Colorado	56%	36%	15%	34%
Universities				
UCLA (faculty and staff)	46%	42%	8%	13%
Univ. of Washington, Seattle	33%	24%	21%	36%
Univ. of British Columbia	68%	57%	26%	38%
Univ. of Wisconsin, Milwaukee	54%	41%	12%	26%
Colorado Univ. Boulder (students)	43%	33%	4%	7%

⁶ First Community Housing Residential Ecopass Program, Jeff Oberdorfer, accessed at www.firsthousing.org/pdfs/EcoPass2.pdf on August 27, 2006.

Benefits from a universal transit pass program

Universal transit passes provide multiple benefits, as discussed below.

For transit riders

- Free access to transit
- Rewards existing riders, attracts new ones
- For employees who drive, making existing transit free can effectively create convenient park-and-ride shuttles to any existing under-used remote parking areas

For transit operators

- Provides a stable source of income
- Increases transit ridership, helping to meet agency ridership goals
- Can help improve cost recovery, reduce agency subsidy, and/or fund service improvements

For downtown districts

- Reduces traffic congestion and increases transit ridership
- Reduces existing parking demand: Santa Clara County’s (CA) ECO Pass program resulted in a 19% reduction in parking demand
- Reduces future growth in parking demand: University of Washington’s U-Pass program helped avoid construction of 3,600 new spaces, saving \$100 million (since 1983, the

university population increased by 8,000 but actually reduced the number of parking spaces)

For developers

- Universal transit pass programs can benefit developers if implemented concurrently with reduced parking requirements, which consequently lower construction costs
- Providing free cost transit passes for large developments provides an amenity that can help attract renters or home buyers as part of lifestyle marketing campaign appealing to those seeking a “downtown lifestyle”

For employees/employers

- Reduces demand for parking on-site
- Provides a tax-advantaged transportation benefit that can help recruit and retain employees

Free transit passes are often an extremely effective means to reduce the number of car trips in an area. By removing any cost barrier to using transit, including the need to search for spare change for each trip, people become much more likely to take transit to work or for non-work trips.

A cost-effective transportation investment

Many cities and institutions have found that trying to provide additional parking spaces costs much more than reducing parking demand by simply providing everyone with a free transit pass. For example, a study of UCLA’s universal transit pass program found that a new parking space costs more than three times as much as a free transit pass (\$223/month versus \$71/month).⁷

Program Details

Purchase of a universal transit pass program for all downtown employees and existing residents should be managed by the Parking Benefit District’s Transportation Manager (as described in Element 2).

Funding sources

The transit pass program should be paid for through some combination of the following sources:

- Parking revenues.
- A portion of commercial lease revenues, rents (for rental units) or a portion of condominium association dues (for the market-rate con-

dominium units) can be used, if funding is needed in addition to that provided by parking revenues.

- Grants from environmental, public health, traffic mitigation sources (grants usually funds pilot projects).

Implementation priorities

In implementing a universal transit pass program, Collegetown’s program should emphasize:

- Universal coverage for all residents, which allows lower per rider costs and a deeper discount to be offered.
- Automatic opt-in, which lowers sign-up barriers and encourages greater participation and ridership gains.
- Plan for targeted transit service improvements to further encourage usage of the universal transit pass and/or to respond to increased ridership after the program is launched.

⁷ Jeffrey Brown, et. al. “Fare-Free Public Transit at Universities: An Evaluation.” *Journal of Planning and Education Research*, 2003: Vol 28, No. 1, pp 69-82.

element 4 require parking cash out

Goal

Subsidize all employee commute modes equally and create incentives for commuters to carpool, take transit, and bike or walk to work.

Fundamentals

Many employers in Collegetown may wish to provide free or reduced price parking for their employees as a fringe benefit. Under a parking cash out requirement, employers will be able to do this *on the condition that they offer the cash value of the parking subsidy to any employee who does not drive to work.*

Employees who opt to cash out their parking subsidies would not be eligible to receive free parking from the employer and would be responsible for their parking charges on any days when they do drive to work.

Benefits of Parking Cash Out

The benefits of parking cash out are numerous, and include:

- Provides an equal transportation subsidy to employees who ride transit, carpool, vanpool, walk or bicycle to work. The benefit is particularly valuable to low-income employees, who are less likely to drive to work alone.
- Provides a low-cost fringe benefit that can help individual businesses recruit and retain employees.
- Employers report that parking cash-out requirements are simple to administer and enforce, typically requiring just one to two minutes per employee per month to administer.

In addition to these benefits, the primary benefit of parking cash-out programs is their proven effect on reducing auto congestion and parking demand. Table 4-2 illustrates the effect of parking cash-out at seven different employers located in and around Los Angeles. It should be noted that most of the case study employers are located in areas that do not have good access to transit service, so that a large part of the reduced parking demand that occurred with these parking cash-out programs resulted when former solo drivers began carpooling.

Table 4-2 Effects of parking cash-out on parking demand

Location	Scope of Study	Parking Fee in \$/Month (2006 \$)	Decrease in Parking Demand
Group A: Areas with little public transportation			
Century City, CA ¹	3500 employees at 100+ firms	\$107	15%
Cornell University, NY ²	9000 faculty and staff	\$45	26%
Warner Center, CA ¹	1 large employer (850 employees)	\$49	30%
Bellevue, WA ³	1 medium-size firm (430 empl)	\$72	39%
Costa Mesa, CA ⁴	State Farm Insurance employees	\$49	22%
Average		\$64	26%
Group B: Areas with fair public transportation			
Los Angeles Civic Center ¹	10,000+ employees, several firms	\$166	36%
Mid-Wilshire Blvd, LA ¹	1 mid-sized firm	\$119	38%
Washington DC suburbs ⁵	5500 employees at 3 worksites	\$90	26%
Downtown Los Angeles ⁶	5000 employees at 118 firms	\$167	25%
Average		\$135	31%
Group C: Areas with good public transportation			
University of Washington ⁷	50,000 faculty, staff and students	\$24	24%
Downtown Ottawa ¹	3500+ government staff	\$95	18%
Average		\$59	21%
Overall Average		\$89	27%

Sources:

- ¹ Willson, Richard W. and Donald C. Shoup. "Parking Subsidies and Travel Choices: Assessing the Evidence." *Transportation*, 1990, Vol. 17b, 141-157 (p145).
- ² Cornell University Office of Transportation Services. "Summary of Transportation Demand Management Program." Unpublished, 1992.
- ³ United States Department of Transportation. "Proceedings of the Commuter Parking Symposium," USDOT Report No. DOT-T-91-14, 1990.
- ⁴ Employers Manage Transportation. State Farm Insurance Company and Surface Transportation Policy Project, 1994.
- ⁵ Miller, Gerald K. "The Impacts of Parking Prices on Commuter Travel," Metropolitan Washington Council of Governments, 1991.
- ⁶ Shoup, Donald and Richard W. Wilson. "Employer-paid Parking: The Problem and Proposed Solutions," *Transportation Quarterly*, 1992, Vol. 46, No. 2, pp169-192 (p189).
- ⁷ Williams, Michael E. and Kathleen L Petrait. "U-PASS: A Model Transportation Management Program That Works," *Transportation Research Record*, 1994, No.1404, p73-81.

Program Details

The cash value of the parking subsidy should be offered in one of two forms:

- A cash subsidy for carpoolers, walkers, bicyclists and transit commuters equal to the value of the parking subsidy given to those who drive alone. For example, if employees who drive alone are given a free assigned space, reserved for them 24 hours per day (a \$290 per month permit price, at the recommended rates), then an employee who does not drive would receive up to \$290 per month in cash.
- Under federal law, for transit and vanpool commuters, up to \$105 per month of the subsidy may be given tax-free (for both employer and employee) as a subsidy for transit pass purchases and vanpool expenses.⁸
- The cash subsidy for carpoolers, walkers, bicyclists and transit commuters can be equal to the Federal tax-free limit of \$105, and participating employers would pay a portion of their \$185 remaining cost savings from not constructing parking (\$290 minus \$105) to the Parking Benefit District.

As described in Element 5 below, this program recommends that the cost of leasing employee parking be separated from the cost of leasing commercial space. This means that the parking cash-out requirement will have relatively little cost for employers: when employees respond to the cash offer by giving up their parking permit, the employer will be able to recover the cost by leasing fewer employee parking spaces.⁹

⁸ Under the federal “Commuter Choice” law. More info at the Federal Transit Administrations’ Commuter Choice website http://www.fta.dot.gov/initiatives_tech_assistance/customer_service/2172_ENG_HTML.htm.

⁹ Of course, an employer can also choose to let employees pay for their own parking: in this case, the employer will not have to provide a parking cash-out program, since there will be no parking subsidies to cash out.

element 5 require “unbundled” parking costs

Goal

To (1) increase housing affordability and housing choice, and (2) reveal the true cost of parking to employers and their employees.

Fundamentals

Parking costs are generally subsumed into the sale or rental price of housing for the sake of simplicity, and because that is the more traditional practice in real estate. But although the cost of parking is often hidden in this way, parking is never free. The expected cost for each space in a Collegetown underground parking garage is \$45,000 per space. Given land values in the area, surface spaces will be at least as valuable (which accounts for the decision to create underground parking).

Looking at parking as a tool to achieve the Collegetown Vision Statement’s goals for more affordable housing and less traffic requires some changes to status quo practices, since providing anything for free or at highly subsidized rates

encourages use and means that more parking spaces have to be provided to achieve the same rate of availability.

For both below-market rental units and market-rate condominiums, the full cost of parking should be unbundled from the cost of the housing itself, by creating a separate parking charge. This provides a financial reward to households who decide to dispense with one of their cars and helps attract that niche market of households who wish to live in a walkable, transit-oriented neighborhood where it is possible to live well with only one car (or even no car) per household. Unbundling parking costs changes parking from a required purchase to an optional amenity, so that households can freely choose how many spaces they wish to lease. Among households with below average vehicle ownership rates (e.g., low income people, singles and single parents, seniors on fixed incomes, and college students), allowing this choice can provide a substantial financial benefit. For example, more than 24% of Ithaca’s households do not have a car, while in Collegetown, 38% of households have no car. Un-

bundling parking costs means that these households no longer have to pay for parking spaces that they may not be able to use or afford.

It is important to note that construction costs for residential parking spaces can substantially increase the sale/rental price of housing. This is because the space needs of residential parking spaces can restrict how many housing units can be built within allowable zoning and building envelope. For example, a study of Oakland’s 1961 decision to require one parking space per apartment (where none had been required before) found that construction cost increased 18% per unit, units per acre decreased by 30% and land values fell 33%.¹⁰

As a result, bundled residential parking can significantly increase “per-unit housing costs” for individual renters or buyers. Two studies of San Francisco housing found that units with off-street

¹⁰ Bertha, Brian. “Appendix A” in *The Low-Rise Speculative Apartment* by Wallace Smith UC Berkeley Center for Real Estate and Urban Economics, Institute of Urban and Regional Development, 1964.

parking bundled with the unit sell for 11% to 12% more than comparable units without included parking.¹¹ One study of San Francisco housing found the increased affordability of units without off-street parking on-site can increase their absorption rate and make home ownership a reality for more people.¹² In that study, units without off-street parking:

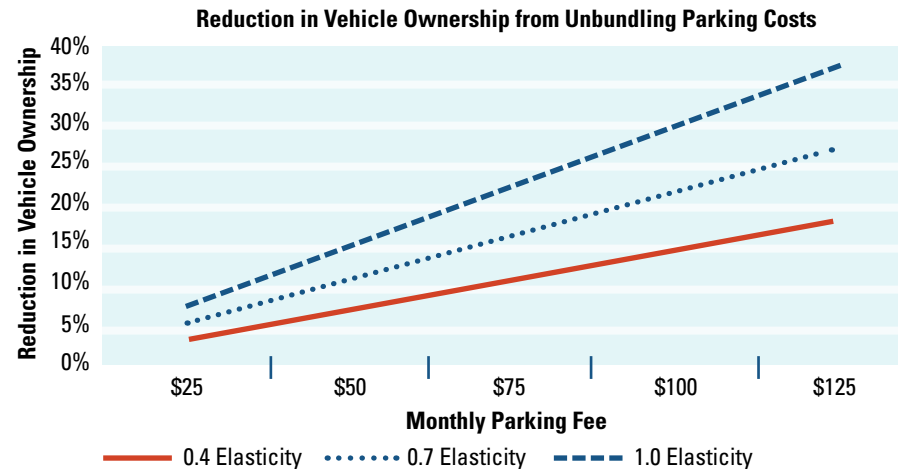
- Sold on average 41 days faster than comparable units with off-street parking
- Allowed 20% more San Francisco households to afford a condominium (compared to units with bundled off-street parking)
- Allowed 24 more San Francisco households to afford a single-family house (compared to units with bundled off-street parking)

Charging separately for parking is also the single most effective strategy to encourage households to own fewer cars, and rely more on walking, cycling and transit. According to one study, unbundling residential parking can significantly

¹¹ Wenyu Jia and Martin Wachs. "Parking Requirements and Housing Affordability: A Case Study of San Francisco." University of California Transportation Center Paper No. 380, 1998 and Amy Herman, "Study Findings Regarding Condominium Parking Ratios," Sedway Group, 2001.

¹² Ibid.

Fig. 4-2 Reduced Vehicle Ownership with Unbundled Residential Parking



Source: Litman, Todd. "Parking Requirement Impacts on Housing Affordability." Victoria Transport Policy Institute, 2004.

reduce household vehicle ownership and parking demand.¹³ These effects are presented in Fig. 4-2.

Program Details

Instituting a parking unbundling program is a simple matter of requiring that any approved parking within Collegetown have its own lease or

¹³ Litman, Todd. "Parking Requirement Impacts on Housing Affordability." Victoria Transport Policy Institute, 2004.

deed that is rented or purchased separate from the cost of housing.

For rental units, unbundling parking costs is straightforward: the fees charged for the parking spaces will cover the full cost of providing the parking spaces. As described earlier, the proposed fees would be \$290 per month (the full cost to build a space) for an assigned space that is reserved 24 hours per day for the resident, with a discount for a permit for spaces that are shared

during the day with retail customers.¹⁴ Then, rents for the housing can be reduced up to an amount equal to the amount of parking revenue collected.

In the case of for-sale condominium units, the title to the property should give the owner the right to lease at least one parking space (and these owners will have first priority for leasing parking spaces in a garage). However, as with renters, owners would not be required to lease

any parking spaces and could rent as many or as few as they choose. The resulting parking revenue should be used to reduce the amount of the condominium owners' association dues that the owners would otherwise have to pay.

It is critical that residents and tenants are made aware that rents, sale prices and lease fees are reduced because parking is charged for separately. Rather than paying "extra" for parking, the cost is simply separated out allowing residents and businesses to choose how much they wish to purchase. No tenant, resident, employer or employee should be required to lease any minimum amount of parking.

¹⁴ When residential spaces are shared with daytime users, other users – such as lunchtime restaurant customers – are allowed to use the residential spaces during the day when residents have driven to work; if a resident chooses not to drive somewhere during the day, there is no penalty, and that space is simply not available for sharing on that day.

element 6 offer parking in-lieu fees

Goal

Create a financial incentive for new developments to participate directly in the STS at initial conceptual design while creating a revenue stream to support the STS's elements.

Fundamentals

Parking in-lieu fees have been in place in dozens of communities throughout America for years. By making a payment to the municipality, new developments can waive their minimum parking requirements. The fee is usually utilized for transportation improvements, particularly shared public parking facilities. An in-lieu fee has a number of advantages, as summarized by Donald Shoup¹⁵

- 1) Enables developers on constrained sites to build less parking.
- 2) Encourages development of shared parking facilities financed by in-lieu fees. A public parking facility shared by many users requires fewer total spaces than multiple individual

developments due to the inherent overlap of peak demand times.

- 3) Shared public parking facilities financed by in-lieu fees can be placed strategically to serve many while reducing the potential impact to pedestrian and bicycle movements. This also frees up development parcels to create appropriate urban streetscapes without curb cuts and garage entrances.
- 4) Eliminates the need for zoning variances, fairly leveling the playing field for all developers and allowing planning boards to focus on design features as opposed to parking quantities.
- 5) Allows for historic preservation by enabling redevelopment of buildings without adding new parking.

In-lieu fees can be an effective method for cost-effectively providing parking in remote locations out of the control of individual land owners. By using fees to subsidize remote parking at locations with cheaper construction or leasing costs, communities can facilitate development financing while establishing a means to encourage

appropriate development standards for participating developers. When fees are set appropriately, more efficient and better quality designs can be enabled while appropriate parking is provided off-site.

In more progressive communities, the success of in-lieu fees has evolved into the lowering of parking minimum requirements. Dozens of communities in the United States have completely removed minimum residential and commercial parking requirements in downtown districts, including Eugene, OR; Fort Myers, FL; Fort Pierce, FL; Los Angeles, CA; Milwaukee, WI; Olympia, WA; Portland, OR; San Diego, CA; Seattle, WA; Spokane, WA; and Stuart, FL.

Program Details

The majority of communities in America that employ in-lieu fees have a consistent standard for all new projects. However, the motivation for specifying a rate varies considerably. In many communities with excessive parking supplies, the fee is low to reduce the growth of parking.

¹⁵ "In Lieu of Required Parking," Donald Shoup.

Other communities have a moderate rate that is designed specifically to contribute to a shared parking facility. Several communities have arbitrarily high fees to permit yet discourage the practice. In Collegetown, the primary goals of an in-lieu fee is to: 1) remove the cost and design complexity of building parking in Collegetown, while also 2) enabling the development of cheaper remote parking or alternative transportation systems through payments to the STS. Therefore, it is important to give a cost savings to developers while having a fee high enough to support a robust STS. Based on estimated garage construction prices of at least \$30,000 per spaces, it is estimated that an average fee of \$15,000 per space be implemented – annualized as a payment to the Parking Benefit District of approximately \$1,400 per year for 35 years (the industry-standard lifespan of a parking structure). This value is sufficient to cover the cost of building and maintaining a public surface or above-grade parking space in a remote location plus a contribution to STS elements.

The specific fee for a particular project may vary in direct proportion to the number of required spaces. Smaller projects that only require a few spaces may not see much incentive to reduce parking at \$15,000 per space. A fee of only \$7,500 may be appropriate. Larger projects with

dozens of spaces are likely to have more substantial financing that is prepared to build expensive underground parking spaces that cost over \$45,000. Such projects may see great benefit paying as much as \$30,000 per space to avoid the complexity of structured parking. Therefore, the final in-lieu payment would be best expressed as a rate that increases with the number of total spaces required for a project (That is, \$2,000 plus \$500 for each additional space. A project requiring 5 spaces could build zero for a fee of \$15,000 annualized, or \$3,000 per space. A project requiring 50 spaces could build zero for a fee of \$712,500 annualized, or \$14,250 per space. One hundred spaces would be \$2,675,000 annualized, or \$26,750 per space removed.)

If the City prefers to retain some quantity of on-site parking, the amount that can be removed from a project through in-lieu payments may have a limit – typically expressed as a revised parking minimum. For instance, required parking of 4.0 spaces per 1,000 square feet of building can be reduced through in-lieu payments to a limit of 1.5 spaces per 1,000. While this approach may satisfy a public policy concern, it has notable drawbacks. It is likely that such a policy would not have the desired effect of reducing curb cut impacts on the Collegetown streetscape. It also may continue to discourage historic preservation

or development of infill sites that simply don't have room for providing parking cost-effectively. Therefore, it is highly recommended that in-lieu payments are allowed to entirely remove the burden of providing on-site parking at most locations in Collegetown.

Remote parking

An important part of the success of the in-lieu fee program will be developing a remote parking program to replace supplies not constructed on-site. While it may be desirable in the long term to utilize fee revenue to construct a new Collegetown parking facility, the STS can take advantage of the significantly lower cost of remote parking and retain fee revenue for other infrastructure enhancements, such as those identified in Element 10 below. The City already possesses likely remote parking facilities in its downtown that are quickly accessible to Collegetown on frequent TCAT service. It has been estimated that at least 400 municipal garage spaces are vacant during peak demand downtown, allowing Collegetown to assign some student parking remotely. Cornell University also may be able to further leverage STS programs by allowing portions of the remote parking – especially for student housing – to occur on existing underutilized campus parking facilities that are served by direct TCAT connections.

element 7 establish a car sharing program

Goal

To (1) enable Collegetown commuters to carpool, take transit, bike, or walk to work by ensuring that a shared car will be available for work trips when needed, and (2) enable Collegetown residents to reduce the number of private vehicles they own by ensuring that a shared car will be available for household trips when needed.

Fundamentals

Car sharing operators, such as Ithaca Car Share, Flexcar and ZipCar, use telephone and Internet-based reservation systems, which allow their members a hassle-free way to rent cars by the hour with members receiving a single bill at the end of the month for all their usage. The shared cars are located at convenient neighborhood “pods”. Flexcar and ZipCar is a national, for-profit company. Ithaca Car Share is an Ithaca-based nonprofit organization.

Car sharing has proven successful in reducing both household vehicle ownership and the per-

centage of employees who drive alone because of the need to have a car for errands during the workday. As a result, car sharing can be an important tool to reduce parking demand.

For residents, car sharing reduces the need to own a vehicle, particularly a second or third car. Recent surveys have shown that more than half of car-share users have sold at least one vehicle since joining the program in the San Francisco Bay Area.¹⁶ For employees, car sharing allows them to take transit to work, since they will have a vehicle available for errands during the day.

With the vision of building improved mixed-use housing developments in Collegetown and the implementation of the other strategies recommended in this plan (such as requiring that parking costs be unbundled from housing costs and that employers offer the option to employees to cash-out parking at work), car sharing will become much more viable than in conventional

suburban locations. If parking costs remain bundled into housing costs, or employee parking remains free with no cash-out program, then the prospects for a successful car sharing program will be considerably diminished.

Several cities, including the City of Berkeley and Philadelphia, PA have helped establish a car sharing program in their communities and reduced their own fleet costs by contracting out some portion of their vehicle fleet to a car sharing provider. In this arrangement, the City serves as an “anchor subscriber,” which increases the financial feasibility of the location for the car sharing operator and allows more vehicles to be made available to the public, especially during evening and weekends when usage by city employees is low. The City should explore this model of contracting out part of its existing vehicle fleet.

Implementation of a universal transit pass (free transit pass for Collegetown residents and employees) will also increase demand for car sharing among residents and employees (who begin taking transit but occasionally need a car). This

¹⁶ April 2002 survey by Nelson\Nygaard Consulting Associates for City CarShare.

plan therefore recommends that the City begin negotiations with an existing car sharing operator sooner rather than later, in order to be able to establish a car sharing program concurrent with the opening of any new buildings constructed in Collegetown after adoption of the plan and implementing ordinances.

Program Details

Collegetown should establish a car sharing service in Collegetown by working with Ithaca Car Share to locate at least one shared vehicle “pod” in the district. To establish a car sharing service in Collegetown, the City should negotiate a contract with Ithaca Car Share and consider the following strategies as part of the STS:

- 1) Offer convenient and visible parking spaces in Collegetown to the car sharing provider for the car sharing vehicles, at no charge. A pod can be based in the Dryden Road garage.
- 2) Partially or fully subsidize operation costs.
- 2) Partially or fully subsidize operation costs.
- 3) Replace some existing city-owned fleet vehicles with car sharing cars, and locate an additional car sharing pod at City Hall.
- 4) Require future developers throughout Ithaca who don't pay an in-lieu fee to pay into a car share start-up fund.
- 5) Coordinate with Cornell University to serve as an “anchor tenant” for an Ithaca Car Share pod. University utilization of shared cars is very high.
- 6) Provide other incentives as appropriate, such as:
 - a. Offering convenient and visible spaces in other public facilities to car sharing providers for locating car sharing “pods”, including downtown garages and the Collegetown fire station.
 - b. Requiring developers of large projects to offer car sharing operators the right of first refusal for a limited number of parking spaces in their developments.
 - c. Offering Collegetown residents and employees discounted annual car sharing memberships.

element 8 invest in transportation demand management programs

Goal

Invest in the most cost-effective mix of transportation modes for access to Collegetown, including both parking and transportation demand management strategies.

Fundamentals

The cost to construct underground parking garages in Collegetown can be expected to be approximately \$45,000 per space gained, resulting in a total cost to build, operate and maintain new spaces of approximately \$290 per month per space, every month for the expected 35 year lifetime of the typical garage. These dismal economics for parking garages lead to a simple principle: it can often be cheaper to reduce parking demand than to construct new parking. Therefore, Collegetown should invest in the most cost-effective mix of transportation modes for access, including both parking and transportation demand management strategies.

By investing in the following package of demand-reduction strategies, Collegetown can expect to cost-effectively reduce parking demand (and the resulting traffic loads). The Parking Benefit District should invest a portion of parking revenues (and other fees, grants, and/or transportation funds, when available) to establish a full menu of transportation programs for the benefit of all residents and employers. If necessary, a portion of the residential and commercial lease income and/or common area maintenance fees could also be used to provide funding. The transportation demand management programs should include:

- Carpool & Vanpool Incentives. Provide ride-sharing services, such as a carpool and vanpool incentives, customized ride-matching services, a transportation information package for new employees and residents, a Guaranteed Ride Home program (offering a limited number of emergency taxi rides home per employee), and an active marketing program to advertise the services to employees and residents. To achieve greatest cost efficien-

cies, this program should be coordinated with Cornell.

- Guaranteed Rides Home. A major reason why employees are reluctant to try new ways of commuting is the worry that they might be stranded at work. For instance, they might have to stay at work beyond transit service hours or their carpool partner must leave early for an emergency. GRH programs address these fears by offering emergency taxi rides home to employees when they are unable to return home using their standard arrangement. It provides a level of certainty that allows people to comfortably try alternative ways of getting to and from work.¹⁷
- Transportation Resource Center. A storefront office that provides personalized information on transit routes and schedules, carpool and vanpool programs, bicycle routes and facilities and other transportation options could be es-

¹⁷ A study determined that 15 to 25% of program enrollees would otherwise drive to work if the GRH program did not exist (Emergency Ride Home: A Survey of Current Programs and Issues, Ian L. Todreas, ERG Inc, 2002.)

established either on city level or specifically for Collegetown and the surrounding neighborhoods. The Center would take responsibility for administering and actively marketing all demand management programs. Parking operations and administration could be housed here as well. Cornell may have a key roll in opening this center and should be encouraged to partner with the City to identify the best location and program for the Center.

As described in Chapter 2, Ithaca residents already have lower drive alone rates than the national average, with 48% commuting to work by transit, carpooling, bicycling, or walking. With a focused effort, and genuine financial incentives, the share can be increased further.

To some extent, parking demand at Collegetown will depend on how new development is marketed and presented to the public. A marketing message that stresses the availability of transit, the transportation demand management programs, the “unbundling” of parking costs from housing costs, the mix of uses within walking distance of each other, good bicycle amenities, and the availability of car-sharing is likely to attract households who want the choice to own just one vehicle – or in some cases none at all.

element 9 create a residential parking benefit district

Goal

Prevent “spillover” parking in downtown adjacent neighborhoods.

Fundamentals

In order to prevent spillover parking in residential neighborhoods, many cities implement *residential permit districts* (also known as preferential parking districts) by issuing a certain number of parking permits to residents, usually for free or a nominal fee. These permits allow the residents to park within the district while all others are prohibited from parking there for more than a few hours, if at all. At least 132 cities and counties in the US and Canada have residential parking permit districts.¹⁸

Residential parking permit districts are typically implemented in residential districts near large traffic generators such as central business

districts, educational, medical, and recreational facilities but have several limitations.

Most notably, conventional residential permit districts often issue an unlimited number of permits to residents without regard to the actual number of curb parking spaces available in the district. This leads to a situation in which on-street parking is seriously congested, and the permit functions solely as a “hunting license” - simply giving residents the right to hunt for a parking space with no guarantee that they will actually find one. (An example of this is Boston’s Beacon Hill neighborhood, where the City’s Department of Transportation has issued residents 3,933 permits for the 983 available curb spaces in Beacon Hill’s residential parking permit district, a 4-to-1 ratio.)¹⁹ Ithaca’s existing system limits permits per household, but does not constrain the total number of permits according to the available on-street capacity.

An opposite problem occurs with conventional residential permit districts in situations where there actually are surplus parking spaces (especially during the day, when many residents are away), but the permit district prevents any commuters from parking in these spaces even if demand is high and many motorists would be willing to pay to park in one of the surplus spaces. Ithaca has some designated zones where employees can park, but they are not allowed in resident zones.

In both cases, conventional residential parking permit districts prevent curb parking spaces from being efficiently used (promoting overuse in the former example and underuse in the latter).

To avoid these problems, Ithaca should implement a Residential Parking Benefit Districts in the residential areas adjacent to Collegetown at the same time that parking meters are implemented for curb parking. This will prevent excessive spillover parking from Collegetown

¹⁸ “Residential Permit Parking: Informational Report.” Institute of Transportation Engineers, 2000, p1.

¹⁹ Shoup, Donald. *The High Cost of Free Parking*. APA Planners Press, 2005, p516.

residents, employees and visitors trying to avoid parking charges, and ensuring that the adjacent residents get the benefit of the Collegetown businesses next door, without the problem of excessive spillover parking.

Benefits of Residential Parking Benefit Districts

Residential Parking Benefit Districts have been described as “a compromise between free curb parking that leads to overcrowding and [conventional residential] permit districts that lead to underuse... [parking] benefit districts are better for both residents and non-residents: residents get public services paid for by non-residents, and non-residents get to park at a fair-market price rather than not at all.”²⁰

Benefits of implementing a Residential Parking Benefit District around Collegetown include the following:

- Excessive parking spillover into adjacent neighborhoods will be prevented.
- The most powerful measures to reduce traffic from new developments – such as unbundling parking costs and implementing parking cash-out programs – can be implemented.

- Scarce curb parking spaces will be used as efficiently as possible.
- Need for additional costly parking garage capacity at Collegetown (and other future developments) will be reduced.
- Residents will be guaranteed to find a parking space at the curb.

Examples of Residential Parking Benefit Districts

Ithaca’s existing residential permit system allows a majority of residents on a given street to request the issuance of \$45 annual permits (two per household) and supporting City enforcement. This program could be expanded into a Residential Parking Benefit District. Several are being implemented in various forms in the following jurisdictions:

- Aspen, CO (non-resident permits: \$5/day)
- Boulder, CO (resident permits \$17/year; non-resident permits \$312/year)
- Santa Cruz, CA (resident permits \$20/year; non-resident permits \$240/year)
- Tucson, AZ (resident permits \$2.50/year; non-resident permits \$200-\$400/year, declining with increased distance from University of Arizona campus)
- West Hollywood, CA (resident permits \$9/year; non-resident permits \$360/year)

- Isla Vista, CA (in progress)
- San Francisco, CA (in progress)

Program Details

At the same time that parking meters are implemented for curb parking in Collegetown, implement a Residential Parking Benefit District in the adjacent residential areas. The Residential Parking Benefit District would be similar to Ithaca’s residential parking permit program, but it would allow a limited number of commuters to pay to use surplus on-street parking spaces in residential areas – provided that there is surplus space available for them during the day, when many residents are typically at work – and return the resulting revenues to the neighborhood to fund public improvements.

Implementation of a Residential Parking Benefit District in Collegetown will differ from the existing parking permit program in four key ways:

- 1) Participation should be mandatory within a 10-minute walk of the College & Dryden intersection to ensure the district works in harmony with the Commercial Parking Benefit District. All existing residents should be issued permits initially. Limit the number of permits issued to future residents to a number

²⁰ Ibid., p435.

that results in a peak hour occupancy of 85% or less, as determined by an initial city survey supplemented by periodic surveys thereafter (at least biannual).

- 2) Rather than entirely prohibit nonresident parking as with many conventional residential parking permit districts, the City should sell permits for any surplus parking capacity to non-resident parkers at fair market rates, up to 90% of available parking supply. Most likely, these permits will be good only during the daytime, when a surplus usually exists because many residents have driven to work.
- 3) Phase in the use of in-vehicle meters for non-resident parkers (who will primarily be Collegetown employees) rather than only offering adhesive permits or rearview hangtags. These in-vehicle meters (see image below), allow user and geographic transferability, multiple pay-



ment methods, variable pricing options, and networking capabilities.

- 4) Finally, the rates for non-residents' parking permits should be set at fair market rates as determined by periodic city surveys, and all net revenues above and beyond the cost of administering the program should be dedicated to pay for public improvements in the neighborhood where the revenue was generated. For example, revenues from the commuters' parking fees could be used to pay for landscaping, tree planting, or sidewalk improvements.

Community participation & local control

Residential parking benefit districts are likely to be needed for all curb parking spaces within a convenient walk of areas with parking charges. Typically, this distance is about a five minute walk, or a quarter-mile (about 1350 feet: see Fig. 4-3). However, residential parking benefit districts should only be implemented if a simple majority (50% +1) of property owners on a block supports formation of the district.

Once implemented, residents, property owners, and business owners in the district should continue to have a voice in advising City Council how they want new parking revenue spent in their neighborhood. This could occur via existing City advisory committees, mail-in surveys, or public workshops and hearings. Another option is to appoint advisory committees in the parking benefit district, tasked with advising the Council on how the surplus revenue should be spent in their neighborhood.

Fig. 4-3 Proposed Residential Parking Benefit District Boundary



element 10 investigate alternative infrastructure improvements

The ultimate goal of the STS will be to improve the built environment in Collegetown by making streetscape and other infrastructure improvements that help make the district become more vibrant at street-level. Central to this change will be reducing dependence on the private automobile. While all of the elements described above work towards that goal by developing incentives to use alternative means of transportation, it will be essential for the district to implement many needed improvements to the walking, biking and transit systems in Collegetown.

Goal

Build a better environment for pedestrians, bicyclists and transit riders in Collegetown.

Program Details

Pedestrians

Walking is the most critical mode of transportation in Collegetown. At some point, everyone traveling by any other mode becomes a pedestrian, whether they get out of a car, dismount

a bike, or step off a bus. The current walking environment in Collegetown is compromised in a number of areas as identified in the existing conditions section. The City in coordination with Collegetown stakeholders and Cornell should develop a prioritized list of pedestrian improvements to be tackled immediately and in the near future. If managed correctly, Parking Benefit District revenues can be used to make payments on an infrastructure bond that covers the cost of a portion of this program.

The following improvements are recommended in order of importance:

1) College & Dryden Crossing Improvements.

This intersection is the centerpiece of Collegetown's pedestrian circulation system and the location with the highest number of conflicts with vehicles.

Short-term: International standard crosswalk markings (zebra bars) should be installed on all four crosswalks in reflective thermoplastic. Recommended signal improvements include installation of LED countdown pedestrian

indications operating concurrently at all times, activation of a leading pedestrian interval (LPI) for each crossing phase, and reduction of total signal cycle length to under one minute.

Long-term: Install curb extensions (aka "bulb-outs") on each corner. Curb extensions move the sidewalk further towards the vehicle travel lane, resulting in increased visibility of pedestrians by motorists, reduced crossing distances, and increased sidewalk waiting area.

2) **College Avenue Sidewalk Widening.** This street is the spine of pedestrian activity in the district.

Short-term: Between Oak and Dryden, all meters, light posts, signposts and trees should be replaced or relocated to the existing curb extensions or other locations to increase the effective width of both sidewalks – replacing meters with pay stations as necessary.

Long-term: Between Oak and Dryden, install a raised "woonerf" street section whereby all curbs are removed, the street elevation is brought up to the sidewalk elevation, all paving materials are the same, and on-street

parking is defined only by bollards. With daily volumes on College Avenue under 4,000 cars per day, this treatment would be highly effective.

- 3) **Oak & College Crossing Improvements.** This critical crossroads between Cornell, Collegetown, and the Schwartz Center for Performing Arts is severely compromised by an excessive dedication of space to underutilized street pavement. There is no need to retain the space-consuming circle, which only serves as a convenience for drivers to turn-around (Evening TCAT buses that utilize the turn-around have sufficient layover time to be easily rerouted at a number of locations along their runs or even extended into downtown, thereby eliminating the need to turn TCAT buses at this location.)

Short-term: Re-route TCAT buses and block-off the southeast portion of the circle to vehicle traffic with bollards and landscaping, installing new international standard crosswalks across Oak and College that reflect the direct desire-lines along College and Oak.

Long-term: Convert the blocked-off area to a raised plaza and convert the Oak crosswalk and the College crosswalk between Collegetown Bagels and Sheldon Court to raised crossings.

- 4) **Dryden Road Garage Entrance.** The primary public off-street parking facility in Collegetown presents a hazard to pedestrians crossing its entrance.

Short-term: Install clear signing and lighting to make the garage entrance clearly visible to pedestrians and motorists.

Long-term: Install sidewalk pavers across garage mouth and along sidewalk to emphasize pedestrian priority over vehicles.

- 5) **Eddy & Dryden Improvements.** At the base of Eddy Gate, this intersection represents a large amount of underutilized roadway and many potential conflicts from a variety of confusing desire-lines.

Short-term: Install bollards to channelize vehicular movements from Williams Street and into Eddy Gate, possibly removing on-street parking from Eddy between Dryden and Williams.

Long-term: Convert the end of Eddy Street north of Dryden into a “woonerf” plaza with bollards demarking on-street parking and the Williams Street moves. Include outdoor restaurant seating on west side of plaza.

- 6) **Buffalo & Eddy Safety Improvements.** As a key pedestrian and vehicular gateway to Collegetown, the current intersection operation is dangerous due to approach grades and sight-lines from eastbound Buffalo. Install 3-way

stop control at this intersection and international standard crosswalks on each leg.

Bicycles

While Cornell sees heavy bicycle usage on campus, bicycling is poorly accommodated across the gorge in Collegetown. This mode of access and circulation is critical to removing vehicle trips, especially by students. However, no bicycle facilities exist. Only a few bicycle racks are present, and none were identified to meet current standards.

The following improvements are recommended in order of importance:

- 1) **Short-Term Bicycle Racks.** Inverted U or post and ring short-term bicycle racks should be installed throughout Collegetown, especially in close proximity to retail and other student destinations. Existing racks – such as those in front of the Schwartz Center – should be discarded. If racks are observed to be regularly occupied, additional rack should be installed.
- 2) **College Avenue Bike Facility.** Shared-lane chevron markings should be installed the entire length of College Avenue to warn drivers to leave room for bicycles.
- 3) **State Street Bike Facility.** A full class 1 bicycle facility should be installed on State Street between downtown Ithaca and Mitchell. An

international standard crosswalk should be installed on State to the east side of Eddy to facilitate bicyclists heading up State to Eddy who could not take the lane when turning left.

- 4) **Eddy Street Bike Facility.** Shared-lane chevrons should be installed the entire length of Eddy Street.
- 5) **Cascadilla Gorge.** A mixed-use path built to AASHTO standards should be installed to connection Eddy Gate with College at Oak, serving bicyclists and pedestrians.

Bicycle Rack Design Standards

The majority of bicycle rack styles available for purchase in the United States do not meet current standards for bicycles. Especially with increased bicycle costs, most traditional bike racks have a high potential to cause expensive repairs, especially to wheel spokes, gears and chains. Traditional racks either put damaging pressure on these critical bicycle components or do not adequately support bicycles, resulting in falls and damage upon impact or during retrieval when components are tangled with the components of an adjacent bicycle. The racks observed in Collegetown violate both of these criteria. The City should immediately implement a modern standard. Suggested design language follows:

The bicycle rack should:

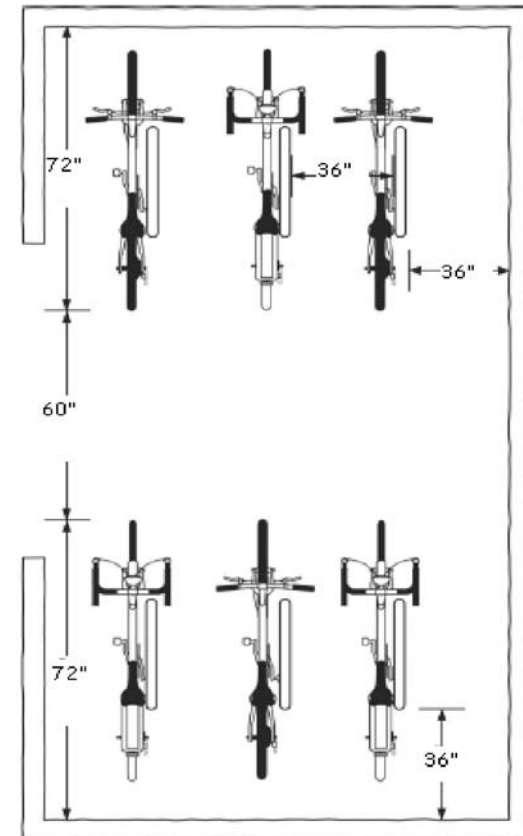
- 1. Have a stable structure and permanent foundation that is securely anchored in the ground.
- 2. Support an upright bicycle by its frame in two places on a horizontal plane.
- 3. Be designed to prevent the front wheel of the bicycle from tipping over.
- 4. Support a variety of bicycle sizes and frame shapes.
- 5. Allow the rider to secure the frame and one or both wheels to the rack.

The bicycle rack should NOT:

- 1. Only support the bicycle at one point.
- 2. Allow the bicycle to fall, which can damage the bike and block pedestrian right-of-way.
- 3. Have sharp edges that can be hazardous to the visually impaired.
- 4. Support the bicycle by one wheel.

Racks should be mounted in a row no closer than 36 inches apart from each other for easy accessibility. In the case of a rack area or bicycle parking lot, 60-inch aisles should separate the racks. To accommodate the average bicycle, at least 72 inches of depth should be allotted to each row of parked bicycles. No fewer than 36 inches should be allowed between each rack and any surrounding wall structure or vehicle parking space (see Fig. 4-4).

Fig. 4-4 Bike Rack Placement Guide



Shared Bicycle Pool

Upon installation of a significant number of bike racks as well as on- and off-street bicycle facilities, Collegetown should implement a bike share program where all participants have free access to a pool of bicycles. Stored at strategic secure locations throughout Collegetown and on Cornell's campus, the bicycles can be signed out with a member ID. This program has been in place for several years at the University of Wisconsin-Milwaukee, the University of North Carolina-Chapel Hill, and Michigan Technological University among others. Washington DC is now launching a similar commercial program open to the general public.

To address theft concerns, RFID chips are imbedded in bicycles to aid with location and identification after a theft is reported. While financing the initial purchase costs and providing continued maintenance can exceed \$1,000 per year per bicycle, this cost is significantly lower than the annual cost to finance and maintain new parking in Collegetown.

Phasing in this program should carefully consider the quality and quantity of key bicycle infrastructure and facilities before broadening

bicycling to inexperienced riders. However, the program should be marketed early as a near-term goal in order to help motivate the necessary infrastructure improvements. Interim pilots can be initiated as bicycle infrastructure is improved, such as weekend-only bike loans.

Bicycle Purchase Loan Program

Several universities in North America are now offering a zero-percent interest loan program for the purchase of a bicycle in order to encourage bicycle commuting. Cornell could offer this program in order to help students get over the initial purchase hurdle of a bicycle, which can often exceed \$1,000. Flexible pay-back terms are preferable. The University of California-Santa Cruz has implemented this program for several years.

Transit

While TCAT runs excellent frequent service through Collegetown, few area residents or employees understand and utilize the system. Several inexpensive improvements can be made to improve the accessibility of transit to new riders:

1) **Install Shelters.** Modern shelters protecting riders from the weather and providing a nighttime light source should be installed at each stop on College Avenue. All shelters post cur-

rent schedule information and system routes on clear information panels.

2) **Create a Collegetown Transit Map.** A simple subset of the TCAT system map can be included on a Collegetown-specific map to be distributed throughout the neighborhood. By targeting the specific routes and destination served from Collegetown, much of the confusion with the current system-wide map can be avoided.

3) **Employ a Next Bus System.** Similar to the vehicle location systems utilized at several U.S. transit agencies, a pilot GPS-based automated vehicle location (AVL) system can be installed on every bus serving a key Collegetown routes (such as Route 10) that provides real-time bus arrival information.

The following implementation schedule suggests the preferred order for implementing most of the elements described above. Possible dates are included to suggest the fastest-possible timeframes given our team's understanding of each element and the implementation steps required for the City of Ithaca.

implementation schedule

Table 4-3 Implementation Schedule

Conclusions

The Sustainable Transportation System plan for Collegetown described herein includes a series of measures by which the City of Ithaca can reduce vehicle travel to and from the site, and promote transit, walking and cycling. The plan capitalizes on the mix of uses, walkability and future transit accessibility of the district, giving existing and future residents and employees more transportation choices.

These strategies will also ensure that the parking system is cost effective, works well, and makes spaces readily available for all users at all times in Collegetown. The recommendations are designed to meet several goals:

- Provide shoppers, employees and residents with sufficient parking, in a manner that is convenient and cost-effective.
- Provide additional transportation choices, including transit, carpool, bicycle and pedestrian facilities and services.
- Advance the broader vision of the Collegetown Vision Statement, by creating a development

<p>Conduct parking utilization study. In order to set up the appropriate pricing structure and enforcement mechanisms for a parking benefit district, a detailed parking utilization study should be conducted for Collegetown and surrounding neighborhoods – typically through the procurement of professional consulting services.</p>	ASAP
<p>Purchase and Install Phase 1 Parking Equipment. Authorize an initial capital project to pay for initial installation of trial pay stations. Install pay stations on selected block faces that were previously free to capture parking revenues (upper Oak, lower College, lower Linden, lower Eddy, etc...) effectively extending the for-charge on-street parking areas (some metered & some pay stations).</p>	Fall '08
<p>Activate Sustainable Transportation District. In parallel with the implementation of new proposed zoning changes – especially as they relate to parking – an on-street parking management program must be in place, TDM measures must be ready to be implemented, and key staff to manage program launch must be identified and trained.</p> <ul style="list-style-type: none"> • Seek Board of Public Works approval to: 1) convert free on-street parking areas to metered parking to be regulated by pay stations, 2) establish revised hourly parking rates and times intended to leave 15% of spaces open, 3) authorize the Superintendent to revise parking rates as necessary to achieve 85% occupancy, and 4) establish monthly parking rate for remote parking at top levels of Cayuga Garage in downtown. • Request City management to decide how to staff, manage and fund the Mobility Coordinator position – in-house, fee consultant, authority, private incentives, etc. • Coordinate staffing/enforcement of expanded parking enforcement areas and hours with the community service officers who enforce parking regulations (Police Department), and build expenses and revenues into the 2009 City budget. • Based on utilization study results, seek Common Council/Board of Public Works approval to allow limited purchase of monthly daytime on-street parking in residential parking districts with surplus capacity for commuter/merchant permits. 	Fall '08

that is genuinely oriented towards transit, walking and bicycling.

The Collegetown vision statement establishes a clear vision for the district. These recommendations have been designed to fulfill that vision, keeping in mind that parking and transportation policies have powerful effects not merely on parking demand, but on development feasibility, housing affordability, the amount of traffic produced, the quality of urban design, and many other areas. At the same time, these measures will provide a practical, implementable parking management plan, for a constrained neighborhood where active parking management is essential.

Take out General Obligation/Revenue Bond. Once a reliable revenue stream from parking and in-lieu fees is established, application for a bond mechanism may be initiated to finance streetscape improvements.	Spring '08
Initial streetscape project. Building upon the plan identified in this report, initial streetscape projects can begin.	Summer '09
Purchase and Install Phase 2 Parking Equipment. Depending on utilization results, all meters should be replaced with pay stations to improve revenues, customer options, and ease of enforcement. Authorize Phase 2 capital project – purchase and install pay stations for full extent of Commercial Parking Benefit District, including replacement of existing meters.	Fall '09
Supplement Collegetown PCO salary or directly hire an Ambassador. Based on revenues, the Parking Benefit District should be able to begin paying salaries or stipends to the Transportation Manager and any Mobility Ambassadors.	Winter '09
Offer off-street lease buy-backs. Based on program success, the Parking Benefit District may begin offering long-term leases, maintenance, and liability protection to private parking facilities.	Spring '10
Lease remote parking. If assistance from Cornell is no longer needed for providing cost-effective remote parking, the Parking Benefit District may begin leasing parking from Cornell or other operators at going rates.	Spring '10
Supplement TCAT budget. As TCAT ridership increases, the STS will have to evaluate purchases of Universal Transit Passes or direct service improvements.	Fall '10