

Chapter 4. Other Inventories

University of Michigan

Background

On Tuesday August 8, 2006, a project team member conducted a half-hour phone interview with David Miller, Director of the University of Michigan's Parking and Bus Operations (PBO). The purpose of the interview was to gain detailed insight into existing conditions of the more than 20,000 parking spaces controlled by the University.

Mr. Miller began by describing the University's parking supply. There are three distinct parking supplies:

- The largest is controlled by the University's Parking and Transportation Department (PTD). This approximately 20,000-space supply is reserved largely for the faculty and staff employed at the three main Ann Arbor campuses – North, Central (and Medical), and South.
- A 2,000-space inventory is maintained by the Housing Department for the use of student residents.
- The Athletic Department controls about 1,000 spaces.

Issues

Currently, the primary concern of the PBO is adjusting to the growth of the University's Health Systems operations and staff. It recently constructed a new 530-space parking garage at the Medical Center campus.

There also has been a slight growth in student demand for parking, although this is not presently a concern. This growth is primarily a result of higher vehicle ownership among resident students.

Mr. Miller described parking supplies among the Central Campus as "comfortably tight." Visitor parking can be an issue, especially during campus-based events. When demand exceeds supply, the PBO works with the DDA to accommodate spillover demand. Mr. Miller stated a good working relationship with the DDA has been especially helpful at these times.

TDM

The PBO is constantly looking for ways to reduce parking demand. The M Ride program, initiated in 2004 in coordination with Ann Arbor Transportation Authority (AATA), allows University staff and students to ride any local transit vehicle for free, using University IDs.

There are currently four remote parking lots used by University parkers. Two are located south of Downtown, and are owned by AATA and served by AATA buses. These lots are open to the public and are free of charge. Students make up the majority of University customers at these lots.

The other two locations are controlled by the PBO and served by its buses. These require the purchase of a low-cost parking permit (see Parking Rates, below). One lot is located at the North campus and is heavily used. The other lot, located at the South campus, is somewhat underutilized.

The PBO also maintains an active Vanpool program, with over 70 vehicles and 400 participants. Vans are provided to participants. Driving participants pay no fee, while riding participants pay \$25 per month. This program has seen rapid growth over the last three years, but shows signs of leveling out. Vanpool vehicles require no parking permit, and have access to reserved spaces at PBO facilities.

The PBO brought in a car sharing provider in October of 2006. There are a total of six vehicles located among three University parking facilities outside of Downtown. These vehicles are provided PBO parking spaces at no cost.

The PBO is looking into ways to encourage carpooling. It expects to begin a ride matching service in the near future. At a minimum, carpoolers will be allowed to share a single permit. The possibility of offering free and/or reserved parking is being examined.

Parking Rates

The PBO offers four basic parking rate tiers, based on annual permit purchases. Each permit is color-coded according to cost and location access, as follows:

- Orange - \$65 per year for remote lots;
- Yellow - \$130 per year for lots that are either a long walk to main campus buildings, or are located at remote buildings;
- Blue - \$544 per year for a common pass good at most PBO parking facilities; and
- Gold - \$1,250 per year for spaces that, while not individually reserved, offer availability at all times.

PBO and DDA Coordination

Mr. Miller believes that mutual interests are shared in meeting the growing demand created by the University's Health Systems. There are plans for a new parking facility at Wall Street in Lower Town, an area designated by the City for re-development. The PBO would like to work with the City to address potential conflicting needs here.

The promotion and expansion of AATA Park and Ride lots is another area of mutual interest between the PBO and the City. AATA has recently commissioned a study for Park and Ride expansion. Current AATA Park and Ride lots offer a valuable resource to University customers.

Inventory

The University of Michigan Parking and Transportation Department (PTD) controls roughly 20,000 parking spaces reserved largely for the faculty and staff employed at its three main Ann Arbor campuses – North, Central (and Medical), and South. Spaces are reserved for vehicles with a University parking permit Monday through Saturday. Hours of enforcement during these days vary by location. Beyond these times anyone can park free of charge, except during certain nearby events.

The PTD offers four basic color-coded permits. Permit rates, based on annual purchases, are as follows:

- Orange - \$65 per year for spaces in remote lots;
- Yellow - \$130 per year for spaces in lots that are either a long walk to main campus buildings, or are located on remote campuses;
- Blue - \$544 per year for a common pass valid at most PTD parking facilities; and
- Gold - \$1,250 per year for spaces reserved for medical staff.

Only the first two permit options are available to students.

To analyze conditions among the University of Michigan parking structures located in Downtown, the project team requested and received data from the University for the parking structures identified below, along with their enforcement hours:

- 300 Thayer Street – 6:00 AM to 10:00 PM;
- 508 Thompson Street – 6:00 AM to 6:00 PM;
- 600 Thompson Street – 6:00 AM to 6:00 PM; and
- 500 Church Street – 24 hours.

The Thayer Street garage is located within the State Street Sub-Area, while the other three are all located within the South Campus Sub-Area. Each facility offers spaces for holders of Gold and Blue permits, neither of which are available to students. Permits are not restricted to specific facilities.

Utilization

Figure 4-1 provides a summary of capacities and utilization at each of these facilities during the morning and afternoon demand peaks. Each utilization figure represents an average, based on monthly counts conducted during the months of September, October, and November, 2006.

Figure 4-1 Utilization at University Parking Structures

Location	Space Type	Spaces	Utilization		
			Morning Peak	Afternoon Peak	Peak Average
300 Thayer St	Gold	15	35.0%	53.3%	45.2%
	Blue	391	86.2%	96.2%	91.8%
	ADA	14	51.8%	74.3%	64.3%
	All	420	83.2%	94.0%	89.2%
508 Thompson St	Gold	19	65.8%	63.2%	64.7%
	Blue	677	93.2%	95.5%	94.2%
	ADA	18	54.2%	40.7%	48.4%
	All	714	91.5%	93.3%	92.3%
600 Thompson St	Gold	6	66.7%	79.2%	75.9%
	Blue	64	99.6%	98.0%	99.0%
	ADA	7	100.0%	89.3%	95.2%
	All	77	97.1%	95.8%	96.8%
500 Church St	Gold	52	76.4%	91.9%	85.0%
	Blue	462	93.9%	95.3%	94.7%
	ADA	14	48.2%	54.3%	51.6%
	All	528	91.0%	93.9%	92.6%
All	Gold	92	66.8%	79.3%	72.2%
	Blue	1594	92.0%	95.1%	93.3%
	ADA	53	58.0%	55.3%	56.9%
	All	1739	89.6%	93.0%	91.1%

Source: University of Michigan, Office of Parking and Bus Operations, 2006

As shown above, these facilities offer a total of 1,739 spaces. Among these spaces, 53 are reserved for ADA customers. To park in these spaces during enforcement hours, a vehicle must have a valid parking permit, a handicap parking decal offered free of charge by the DTP, as well as the Michigan state handicap placard/license plate. After 5:00 PM, a valid Michigan state handicap placard/license plate is all that is required.

Of the remaining 1,686 spaces, 92 are reserved for vehicles with Gold permits. The University’s Gold permits cost \$1,250 per year and are only available to University-affiliated medical staff. The number of these permits that are offered each year are limited to ensure about 20 percent availability for these spaces at all times.

The remaining 1,594 spaces are available for those holding Blue permits. Blue permits are sold for an annual fee of \$544.

Utilization rates indicated in Figure 4-2 are for the morning and afternoon peak periods (9:00 AM to 11:30 AM and 1:00 PM to 3:30 PM, respectively). As indicated, spaces accessible to Blue permit holders are exceptionally highly utilized. Utilization rates average well over 90 percent at most facilities, and at 600 Thompson, they average nearly 100 percent in both the morning and afternoon peaks.

The price and convenience of these passes make it likely that these passes are much more attractive to University faculty and staff than are DDA facilities. Furthermore, year-long pass commitments mean that, for University pass-holders, DDA spaces are likely only used as a last resort, representing a direct expense above the cost of the pass. The high occupancy rates identified in Figure 4-1, however, indicate that on some days some spillover of pass-holder parking into the DDA system is likely as University structures fill up to capacity.

At look at utilization at facilities in the sub-areas closest to campus (South Campus and State Street) is provided in Figure 4-2.

Figure 4-2 DDA Facility Utilization in State Street and South Campus Sub-Areas

Time	South Campus Facilities	State Street Facilities
9:00 AM	24.85%	38.47%
10:00 AM	71.86%	53.37%
11:00 AM	92.11%	57.96%
AM Average	62.94%	49.93%
1:00 PM	100.00%	88.18%
2:00 PM	97.94%	85.76%
3:00 PM	88.98%	74.82%
PM Average	95.64%	82.92%
Overall Peak Average	79.29%	66.43%

Source: Project Team, Field Surveys, September 2006

During the University's peak hours, off-street facilities controlled by the DDA generally offer much more availability than do University facilities. With the exception of the South Campus garages during the afternoon peak, where utilization is in the mid- to high-nineties at both the University's and DDA's facilities, DDA structures tend to offer far more open spaces during the morning and afternoon peaks.

Student Demand

The above analysis, however, is limited to those eligible for Gold and Blue University passes. For students, who are restricted to passes at more remote parking facilities, DDA facilities, including on-street meters, are about the only parking option available in Downtown. While the University does encourage its students to leave their cars behind when traveling to and around campus, and provides free transit service around Downtown and connections to remote lots, it should be assumed that some of the schools 40,000 students do drive to classes in and around Downtown each day. Visits from parents and prospective students to the central campus are also likely accommodated at a DDA spaces.

Impact on DDA Facilities

The University's permit parking system, with its modest cost for standard passes and annual payment system can be expected to encourage driving among University faculty and staff. Based on the utilization patterns described above, it can be assumed that parking spillover from at-capacity University structures, has a minor impact on DDA facilities. The exemption of students from holding passes at University facilities, however, likely means that DDA spaces absorb the bulk of student, and student-related, parking demand for central campus activities.

Private Parking

The City of Ann Arbor, through the DDA, maintains control over virtually all public parking facilities in Downtown. Alternatively, privately-owned parking facilities within Downtown fall into three basic categories:

- Employee parking;
- Residential parking; and
- Customer/ visitor parking at private and public destinations.

While most of the customer/ visitor spaces are open to the public, their use is restricted to those visiting a specific destination, or set of destinations. For example, on-site accessory parking is provided for, and limited to customers of, certain commercial establishments. These spaces are therefore not treated as part of the "public" parking supply.

A review of utilization patterns among these spaces is useful, however, for completing a comprehensive review of existing parking conditions. More importantly, it is useful in assessing the effectiveness of on-site parking requirements for Downtown land uses, as defined in the City's zoning codes.

Land uses within the DDA boundary are exempt from the parking requirements outlined in the City’s zoning code. Where municipalities have chosen to exempt land uses from parking requirements, but have not limited the amount of parking that can be provided, it is left to developers and/or their clients to determine how much parking is needed to avoid unwanted parking spillover, while at the same time avoiding an equally undesirable glut of empty parking spaces.

Utilization of these on-site spaces provides evidence as to whether developers are building enough, too much, or too little on-site parking to support their own needs, as well as greater local and regional transportation objectives.

Data Collection

Parking locations identified by DDA staff were surveyed directly on two separate occasions. Surveys were conducted on various weekdays, between the hours of 10:00 AM and 5:00 PM. All analysis is based on the average of the two counts for each site. Complete data from the counts are presented in Appendix G.

Findings

For this analysis, two types of privately-owned parking were reviewed: parking reserved for employees and parking reserved for commercial customers (see Figure 4-3). It is assumed that anyone patronizing or working for establishments with on-site parking will use the on-site parking when available.

Figure 4-3 Downtown’s Privately-Owned Parking Facilities

Type	Spaces	Average Utilization	Share of locations at 85 percent utilization or higher
Employer	515	63%	23%
Commercial	1,641	62%	19%
All	3,204	59%	16%

* Includes residential parking and visitor parking at non-commercial locations, such as religious institutions.

Overall, space utilization at these locations is quite low. Weekday utilization averages 59 percent for all parking types. Spaces reserved for employees average 63 percent, while spaces reserved for commercial business customers were, on average 62 percent full. Among all facilities, just 17 percent averaged an occupancy level of 85 percent or higher. Less than 25 percent of employee lots, and less than 20 percent of customer lots, were at least 85 percent occupied.

These figures attest to the fact that current parking exemptions for commercial establishments have not resulted in a broad Downtown parking shortage. They indicate, rather, an oversupply of parking across the area. While low occupancies provide insurance against search traffic and spillover parking along local streets, they also indicate an

inefficient use of valuable Downtown land, and unnecessarily frequent interruptions of the pedestrian network. Most private parking spaces are in small lots that are scattered across the area with each lot representing at least one point of vehicle/pedestrian conflict. In an area where land values are high and the commercial core depends upon foot traffic at least as much as direct vehicle access, an oversupply of this type of parking can be as counterproductive to the local economy as an undersupply.

Conclusion

Not requiring parking for areas of high-density mixed-uses has become a favored strategy for managing parking and transportation demand in areas where pedestrian movement is a transportation priority. Using public funds to construct centralized supplies of parking for both commuters and visitors is likewise a common companion strategy for places where parking requirements have been removed. As such, the City of Ann Arbor and its DDA have already established a parking system that has proven beneficial for downtowns and commercial districts across the world.

Backyard Parking

Downtown Ann Arbor's parking supply includes more than the public parking provided by the DDA and accessory spaces serving on-site land uses. A third, more unique parking activity in and around Downtown is the conversion of private property to parking lots. The most obvious form of this occurs during home games for the University of Michigan football team, roughly seven Saturdays each year. This mostly occurs in the front yards and backyards of homes surrounding the stadium, or near stadium-shuttle access points.

A less recognized and subtler version of this type of parking, however, occurs each weekday in an around Downtown. Owners of property within walking distance of Downtown jobs or campuses, who are willing to sacrifice yard space for income, frequently enter into arrangements with commuters who pay a fee to park on residential property. Fees typically range between \$80 and \$120 per month, depending upon location and amenities (such as paving and security).

Quantifying the inventory and utilization of such parking is challenging. Although technically not illegal, such arrangements are typically made outside of official parking establishments, with monies being exchanged "under the table." The result is that such vehicles are not stored in obvious view and backyard parking providers are guarded about their business. For the purposes of providing an estimate of the level of this parking activity, a survey was conducted using recent aerial imagery along with direct visual observation.

Methodology

An aerial image, recorded on a weekday in 2002, was used to identify vehicles parked in back lots. It is not possible, however, to definitely discern from such an image between a single-family property with commuter vehicles in the backyard, a multi-unit structure with

tenant vehicles in the back lot, or a house converted to, or incorporating, a commercial use with employee or customer vehicles parked in the back. Direct visual observations of each potential location therefore were used to differentiate locations with tenant parking versus commuter parking in back.

In order to ensure that the estimate was conservative, locations whose parking characteristics were in doubt were not included in the count of commuter parking. The chosen methodology should therefore be considered as a conservative method for quantifying the level of commuter parking that occurs on private residential property on a typical weekday.

Counts

Analysis of the aerial image indicates nearly 200 vehicles parked in what site observations identified as private backyards renting space for commuter parking (see Figure 4-4).

Figure 4-4 Commuter Parking in Private Backyards

Proximate Area	Vehicles
Main Street Sub-Area	29
Kerrytown Sub-Area	68
State Street Sub-Area	0
South Campus Sub-Area	86
All	183

Source: Project Team, Field Surveys, September 2006

In addition, capacity at most locations appears sufficient for at least twice as many vehicles. While this indicates that demand for such parking is being sufficiently met, the covert and somewhat illicit nature of these parking arrangements is likely to depress this demand, leaving it as just a partial measurement of unmet parking demand in Downtown. It is worthwhile then to examine the generators of backyard parking demand.

Generators of Backyard Parking Demand

Monthly Payments

The lack of any monthly permits immediately available at any DDA parking facility means that these backyard parking lots offer the only monthly off-site parking option for most Downtown employees. Monthly arrangements offer a number of attractive benefits over hourly parking including:

- Simplified payment and budgeting arrangements;
- Quicker enter/ and exit activity;
- No need to worry about having enough cash at the end of each day; and
- Simplified reimbursement for those whose employers subsidize parking expenses.

Unmet demand for monthly parking options can therefore be seen as a significant generator of demand for backyard spaces.

Other Conveniences

These parking arrangements are likely to offer a number of other conveniences not available at hourly DDA parking facilities. The scattered location of these backyard lots may offer location advantages for some employees working on the fringes of Downtown, or in residential areas surrounding Downtown. Additionally the convenience of having a semi-reserved, or reserved, space is another likely attraction for most parkers. While availability at DDA facilities is plentiful during the morning commuter demand peak, these backyard spaces offer a greater assurance of availability, especially for those employees that regularly access their vehicles during the course of a workday.

Lots versus Garages

These spaces are all located in what are essentially lots, which are generally seen as more preferable to garages, something that is reflected in utilization patterns across the DDA inventory, and was directly indicated in parker surveys.

Perception of Alternative Modes

Many Downtown employees have concerns about using alternative modes instead of driving. This is driven by a combination of factors, including unfamiliarity or negative perception of riding the bus, ability to ride a bicycle, unwillingness to add time to a commute (to use a park & ride lot), and concerns about being restricted to a carpool's departure time. Therefore, if paid parking in a DDA facility is unavailable, many employees will opt to pay at a backyard facility, instead of learning how to commute via a different mode.

Conclusion

Backyard parking generates a number of negative and positive influences on Downtown parking conditions. First and foremost among the negatives is its effect on the ability for the DDA to manage parking conditions. This practice undermines the impact of management tools such as pricing and transit incentives, on travel behavior and patterns. Obviously, such parking takes away potential revenue at each garage. Since such revenue is the primary source of funding for upkeep, maintenance, and expansion of the Parking System, this affects all Downtown stakeholders.

On the other hand, backyard parking is likely freeing-up spaces for paying customers at DDA facilities. This eases the ability to find parking for those customers, reduces wait times for those seeking monthly permits, and reduces the demand to build more parking. It also adds a significant amount of flexible inventory for accommodating special event peaks (game days, Art Fair).

The biggest problem with this parking, however, is that the unregulated nature, and somewhat-illicit appearance, of such activity engenders a sense of disorder within the city's parking and land use regulations. This is coupled by the incentive of private property owners to use their property for parking and receive an immediate income, instead of potentially improving it and allowing it to be used for additional Downtown development.

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