The I System: A Campus and Community Bus System for the University of Illinois at Champaign-Urbana

JOSEPH A. MORIARTY, ROBERT PATTON, AND WILLIAM VOLK

The planning and results of an innovative mobility and transportation program for the University of Illinois at Urbana-Champaign, called the "I System," are summarized. The I System integrates a new system of circulating campus bus routes with the existing regular routes of the local transit district. Both the campus and community routes are operated by the Champaign-Urbana Mass Transit District (CUMTD). The I System is jointly funded by a mandatory student transportation fee, the University of Illinois Parking Division, and State of Illinois transit operating assistance. The primary component of the I System is that a valid student identification card becomes an unlimited access bus pass for both the system of new campus routes and the regular community-wide bus routes. This integrated system helps to combat congestion and parking problems by intercepting off-campus trips at the point of origin and providing access to dispersed university activity centers, in turn reducing the need for an automobile both for commuter trips to campus and intracampus trips. The results of the I System have been impressive; ridership for the CUMTD has approximately doubled to 5.4 million passenger trips per year. Because of the success of the I System and complementary Transportation System Management measures, demand for campus parking has been reduced by 1,000 spaces. Consequently, $5 million worth of new parking garage construction has been postponed. The I System is effective because of the unique partnership that was forged between the students, the university administration, and the CUMTD, which maximized the use of existing transportation resources.

The results of the recently implemented campus-community I System demonstrate that transit can play a pivotal role in improving campus mobility in a cost-effective manner. The I System is effective because of the partnership between the university and the local transit district, which maximizes the use of existing transportation resources. Ridership for the entire CUMTD system, campus routes, and community-wide routes has approximately doubled to over 5.4 million unlinked passengers per year. The CUMTD operating cost recovery ratio has increased to 33 percent. Because of the success of the I System and complementary transportation systems management (TSM) measures, the university has reduced the demand for parking by over 1,000 spaces, postponing the need to construct $5 million worth of new parking.

The establishment of a comprehensive campus-community bus system took over 5 years with three student-wide referendums, a major change in transportation parking policy, and the active financial participation of the university administration. For students, faculty, and staff members, the new I System provides a cost-effective transportation alternative for commuting to campus and provides access to an increasingly expanding and disjointed campus.

THE COMMUNITY AND CAMPUS CONTEXT

The Champaign-Urbana Mass Transit District (CUMTD) is a special-purpose district providing transit services to the cities of Champaign and Urbana, Illinois, and to the U of I. The CUMTD has an active fleet of 50 buses, operating 10 weekday and Saturday routes, and 5 evening and Sunday routes. The annual operating budget is approximately $6 million. The CUMTD was created by a popular community referendum in 1971 following the termination of the privately owned bus service.

Champaign and Urbana are twin cities that are located approximately 100 mi south of Chicago in east-central Illinois. The urbanized area encompasses approximately 35 mi². The U of I main campus area is located midway between Champaign and Urbana (see Figure 1). The major trip generators are the university, downtown Champaign, downtown Urbana, Market Place Mall, County Fair Shopping Center, and Sunnycrest Mall.

The Champaign-Urbana urbanized area has a population of approximately 100,000 and on a per capita basis is the 11th densest urban area in the country, following San Francisco, California (1). The U of I campus is approximately 700 acres in area, with 180 major buildings. The campus area accommodates the Uni-
versity's 36,000 students and over 10,000 faculty and staff members. The U of I is the single largest employer in the urbanized area. Of the 36,000 students enrolled at the university, only 10,000 live in university residence halls. Of the remaining 26,000 students who live off-campus, the majority reside within a 1-mi radius of the campus (2). In terms of employment, economic activity, and population, the U of I campus serves as the de facto central business district of the urbanized area.

The CUMTD has taken advantage of this centralized activity and has oriented 9 of its 10 routes to the campus. The CUMTD system can be characterized as a modified timed-pulse system operating 7 days per week on 30-min headways during the base, and more frequently during the peak periods. From radiating points throughout the service district, the terminal points in downtown Champaign and Urbana function as major transfer centers for routes that converge at the campus via the densely populated student residential areas (see Figure 2).

Before the fall of 1989, average weekday ridership was approximately 10,000 unlinked passengers per day. Between 1984 and 1989, annual ridership has been in the general range of 3 million unlinked passengers per year (3) (see Figure 3).

The role of the university as a major centralized point of origin and destination for work and school trips was confirmed by a system-wide evaluation survey conducted in the spring of 1989. Results indicated a total of 34 percent of all surveyed weekday transit trip purposes were oriented to the University of Illinois campus, with 19 percent of these trips taken for university work purposes and 15 percent for university school purposes (4, p. 6). Table 1 presents a summary of service and user characteristics of the CUMTD regular route system.

The CUMTD was, and continues to be, successful at providing transit to and from the campus, but until recently had only limited success providing intracampus transportation. The most notable exception was the Orchard Downs route, which provided service to married student housing and undergraduate dormitories on the southern periphery of campus. Service modifications and fare adjustments had only marginal impact on increasing ridership. The management staff felt that 3 million passengers per year was the plateau of ridership for traditional transit trips for the district.

CAMPUS MOBILITY PROBLEMS

Until recently, the U of I campus was compact and self-contained, making walking and bicycling the mode of choice for intracampus travel. However, recent development patterns have changed the compact structure of the campus. This has played a significant role in contributing to the mobility problem on campus. New development, including academic buildings and residential units, has occurred in a dispersed and uncoordinated manner. The majority of these diffuse activity centers are located on the southern perimeter of campus up to 1 mi distant from the central campus area.
Because of these dispersed land use patterns, students, faculty, and staff grew more dependent on the private automobile to access these activity centers. The combination of high population density around the central campus area and the growing student dependence on the private automobile has created unique automobile congestion problems that are usually associated with larger urbanized areas. Intersections adjacent to the university are characterized by failing levels of service with severe vehicular, bicycle, and pedestrian conflicts. This is especially evident at class interchange times, as well as during the traditional peak traffic periods. Over half of Champaign-Urbana area, critical accident intersections are located on or near the U of I campus (5).

These campus congestion problems were exacerbated by the low cost of parking on campus that encouraged many students to drive to class and other university activities. For students that registered their cars with the university, there were a limited number of parking meters on campus for as low as 25 cents per hour. Student attitudes that were formed in suburban and rural areas also contributed to the congestion problem. It is possible that many believed they had a right to drive and expected that a place to park would be naturally provided.

Another factor that contributed to campus congestion was the university policy of providing reserved low-cost parking for faculty and staff on campus as close to the work destination as possible. At $78 per year, the U of I had one of the lowest parking rates in the Big Ten, a rate unchanged for over 10 years. These reserved parking spaces were allocated on a seniority basis. However, as the university has developed over the last 20 years, the supply of these reserved parking spaces had not kept pace with the demand.

In 1989, 650 new faculty and staff members were placed on a waiting list for reserved parking spaces. According to the Division of Parking, new faculty or staff members could wait up to 3 years to secure a reserved parking space (6). Consequently, for the interim, new faculty and staff members who wished to drive to campus were forced to park in remote stadium parking lots that were up to 1 mi away from the central campus. In order to provide access to these remote...
TABLE 1  SUMMARY OF SERVICE CHARACTERISTICS BEFORE THE I SYSTEM

Demographics*  
- Population in service area: 94,245  
- Population density: 3,903 persons per square mile  
- Average distance to service: 95% of residents in district are within 1/4 mile of a bus stop

Service Characteristics**  
- Number of routes: 10 Weekday/Saturday, 5 Evening/Sunday  
- Average headways: 30 minutes more frequent during peak periods

Revenue and Subsidy**  
- Fares: $0.50 per trip  
- Passenger Revenue per Revenue Vehicle Hour: $9.00  
- Operating cost recovery ratio: 25%

<table>
<thead>
<tr>
<th>Funding</th>
<th>Capital</th>
<th>Operating</th>
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</thead>
<tbody>
<tr>
<td>Federal</td>
<td>80%</td>
<td>17%</td>
</tr>
<tr>
<td>State</td>
<td>20%</td>
<td>40%</td>
</tr>
<tr>
<td>Local</td>
<td>0%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Ridership**  
- Average passengers per weekday: 10,000  
- Average Annual passengers: 2.7 million unlinked passenger trips

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<tr>
<th>Trip purpose:***</th>
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</thead>
<tbody>
<tr>
<td>- Work Trip to U of I:</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>- School Trip to U of I:</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>- Total U of I:</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>- Other Work Trip:</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>- Shopping:</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>- Parkland College:</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>- Social/Recreational:</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>- High School Trip:</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>- Junior High School Trip:</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>- Other:</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>- No response:</td>
<td>6%</td>
<td></td>
</tr>
</tbody>
</table>


lots, the university operated its own remote-parking shuttle bus system. This remote shuttle system was underutilized because of low service frequencies and long trip time.

Therefore, the mobility problem on the U of I campus consists of two interrelated components. The first is the problem associated with getting to and from campus, and the second is that once on campus, there is a general lack of accessibility to dispersed campus activity centers, especially for those without reserved parking privileges. As the university has grown, these factors have combined to create increasing conflict between vehicles and pedestrians, leading to a general deterioration in the transportation environment on campus for students, faculty, and staff members.

CAMPUS EXPANSION PROGRAM

During the mid-1980s, the university planned to implement a 10-year $250 million campus expansion and building program. The development program called for over 20 new buildings on campus. Eight new buildings are currently being built or have been recently completed. The campus would have three distinct campus quadrangles: north, central, and south. Because the university is essentially landlocked in the north and central areas of campus, most of the proposed buildings would be erected on existing surface parking lots. Consequently, the majority of parking on the north and central areas of campus would have to be replaced with expensive parking garages, or displaced to remote stadium parking lots on the extreme southern edge of campus well over 1 mi from the central campus. Three proposed parking garages that would help relieve the parking problem were slated to be built after the completion of the new academic building.

The U of I Parking Division has estimated that through the combination of new demand, loss of additional parking, and shortages from previous years, 1,391 spaces would be required by 1996 to meet reserved parking demand for faculty and staff.
members. These estimates did not address the growing parking demand generated by graduate teaching assistants, research assistants, and other students on campus (6).

SERVICE CONCEPT

In April 1985, the Board of Trustees of the CUMTD adopted as one of its goals to "increase the District's share of local transportation in established areas and pursue new opportunities for public transportation." An ongoing objective was to "establish programs to more effectively increase ridership to and from the University of Illinois campus." Both the Board and management staff felt that the CUMTD could play a pivotal role in providing a cost-effective solution to the growing campus parking, traffic, and mobility problem.

Preliminary research was conducted to investigate how other university communities dealt with similar mobility problems. A survey of Big Ten universities and other major universities that provided campus bus service was conducted (see Table 2). The results of the survey indicated highest ridership among the universities that did not charge a fare but recovered the cost of providing the service through a mandatory student transportation fee, or through the university general fund. The most noteworthy examples included the University of Minnesota, University of Michigan, University of Iowa, University of Georgia, and University of Massachusetts (7).

A service concept emerged from this research that included the following components:

- A comprehensive service that would integrate the existing community-wide service with new circulating intracampus routes.
- Unlimited access to a free service. A student, faculty, or staff member ID would become an unlimited bus pass for the new campus routes and the regular 10-route community system.
- Short high-frequency campus routes, especially before and after the class interchange.
- Service to remote parking lots.
- Extended late night service.
- A low-cost mandatory transportation fee would be assessed for all students, faculty, and staff to fund this system.

Because over 70 percent of students lived off campus, it was felt that a system that would integrate the regular CUMTD community routes with a new system of campus routes would comprehensively respond to the dual transportation needs of the university community. An integrated campus and community system would intercept campus-directed trips at the point of origin, thus avoiding a potential automobile commute altogether. In addition, high-frequency circulating intracampus routes would reduce the need to depend on a car to access dispersed university activity centers and provide increased

<table>
<thead>
<tr>
<th>School</th>
<th>Fleet Size</th>
<th>Type of Service</th>
<th>Funding</th>
<th>Fares</th>
<th>Recovery of Operating Costs</th>
<th>Ridership FY 1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Minnesota</td>
<td>31</td>
<td>Campus/Community</td>
<td>University General Funds</td>
<td>Free On-Campus 75¢ Off-Campus</td>
<td>88% University 12¢ Farebox</td>
<td>4,169,274</td>
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<tr>
<td>University of Michigan</td>
<td>35</td>
<td>Campus Only</td>
<td>University General Funds</td>
<td>Free Fare</td>
<td>100% University Funded</td>
<td>3,600,000</td>
</tr>
<tr>
<td>Ohio State University</td>
<td>13</td>
<td>Campus Only</td>
<td>University General Funds</td>
<td>Free Fare</td>
<td>100% University Funded</td>
<td>3,500,000</td>
</tr>
<tr>
<td>University of Iowa</td>
<td>17</td>
<td>Campus Only</td>
<td>Mandatory Student Transportation Fee Other</td>
<td>Free Fare</td>
<td>58¢ Transportation Fee 15% Parking Revenue 27¢ Other</td>
<td>3,350,000</td>
</tr>
<tr>
<td>Indiana University</td>
<td>17</td>
<td>Campus Only</td>
<td>Fares and Passes</td>
<td>40¢ Fare</td>
<td>98¢ Farebox 2¢ Other</td>
<td>2,242,967</td>
</tr>
<tr>
<td>University of Georgia</td>
<td>29</td>
<td>Campus Only</td>
<td>Mandatory Student Transportation Fee</td>
<td>Free Fare</td>
<td>100% Transportation Fee</td>
<td>12,500,000</td>
</tr>
<tr>
<td>University of Massachusetts</td>
<td>36</td>
<td>Campus/Community</td>
<td>University General Funds</td>
<td>Free Fare</td>
<td>35% State 25% Federal 25% Parking Fees Other</td>
<td>3,600,000</td>
</tr>
</tbody>
</table>

Notes:

(1) Night Service Funded by Residence hall fee.
(2) Other includes: 12.5% State, 7.5% UMTA, and 7% University General Fund.
(3) Other includes: 2% Advertising.
(4) Other includes: 9.6% Student Fees and 4.8% University Funds.

Survey conducted by the Planning Department of the Champaign-Urban Mass Transit District, 1985 - 1986.
mobility for students without access to an automobile. For automobile commuters who are forced to park in remote parking lots, a high-frequency circulating bus route would provide a low-cost alternative to access the central campus area from the remote lots.

Another important component that favored the CUMTD as the logical campus transportation provider was that the CUMTD had access to state of Illinois transit operating assistance. Because of this state transit operating assistance, the CUMTD could reduce the total cost of providing the service to the campus community. As the established transit provider in the community, the CUMTD also had the necessary equipment, maintenance facilities, labor, training capability, and overall management resources to easily expand service. The existing CUMTD services and infrastructure offered economies of scales that the university could not replicate in a cost-effective manner. Furthermore, a campus bus service concept was also included in the new campus development plan as a potential strategy to reduce automobile congestion and to preserve green spaces on campus.

At the time when the campus-community bus service concept was being formed, the CUMTD was invited to participate on a university-sponsored Campus Parking and Transportation Committee. This committee was established to address the mobility problems on campus. Contrary to the recommendations of the CUMTD, the Campus Parking and Transportation Committee focused on parking as the answer for the campus transportation problem. The CUMTD felt that a parking-only solution would ignore the mobility needs of the students, clearly the largest campus population segment contributing to and affected by the deteriorating transportation conditions on campus. In addition, the CUMTD felt that a parking-only solution would create more vehicular congestion rather than reducing it. The CUMTD also approached the chancellor and other university administration officials. The university administration was interested in the campus-community bus service concept, but was unwilling to mandate a student transportation fee to help fund the system. However, the university administration would collect a transportation fee if the students voted for it.

STUDENT REFERENDA

Because students were largely ignored by the Campus Parking and Transportation Committee, but represented the largest
group that would benefit from a campus-community bus service, the CUMTD directly approached the Student Government Association to place this concept on a campus-wide student referendum in December 1987.

Working with a committee of student representatives, the campus-community transportation system plan evolved into the following components:

- Quad circulator, 3- to 5-min service frequency (new route);
- East-west circulator, 15- to 30-min frequency (new route);
- Extended late-night service (until 2:00 a.m. on weekends); and
- Unlimited access to existing CUMTD 10-route network.

A valid student ID would become a bus pass for the new campus routes, as well as for the regular community system, and a $15 per semester mandatory fee would be assessed on all students to fund the cost of the system over 3 years.

However, this referendum failed by 500 votes with over 9,000 votes cast. The primary opposition to the plan revolved around the $15 nonrefundable mandatory fee and the 3-year trial period. Even though the referendum was defeated, there were some significant positive repercussions: record voter turnout, campus-wide focus on the deteriorating aspect of mobility on campus, and heightened awareness on the part of the university administration that this concept was worth pursuing as a cost-effective means to help solve the transportation problem on campus.

After a change in the university administration, the campus-community bus service plan was resurrected for another student-wide referendum in April 1989. At the same time, major building components of the campus expansion program were being initiated. The university administration was beginning to realize the costs associated with replacing reserved surface lots with parking garages in the central campus area. Three 500-space parking structures were planned to replace the surface parking lots taken for the campus expansion program. The cost of constructing parking garages was estimated at $11,000 per space.

An important fact that the university had to consider was state legislation mandating that the Parking Division be a self-supported unit on campus, which means the costs of oper-

![FIGURE 5 #22 Illini Route.](image)
ating, maintaining, and building parking were to be borne entirely by fees collected from university parkers. The previous fee structure only covered the operation and maintenance of the existing surface lot system. No surplus parking revenue was generated to help fund new parking garage construction.

Consequently, by 1996 reserved parking rates on campus would have to be significantly increased to $250 annually to cover the costs of building these new garages (6). Clearly, the university was looking for a more cost-effective solution to the parking and transportation problem on campus. After further consideration, the university agreed to be an active participant in the comprehensive CUMTD campus-community transportation plan.

Through the Parking Division, the university agreed to provide $180,000 of the $880,000 needed to operate the system, so that the mandatory student fee could be lowered to only $10 per semester. The university also intended to implement a range of complementary TSM strategies to help provide incentives to reduce the demand for faculty and staff reserve parking (8). The TSM strategies included the following:

1. Reduced-rate mass transit district bus pass for $30 per year for faculty and staff members, an 80 percent reduction of the regular price of $150 per year. The university agreed to a $120 subsidy for an annual bus pass for faculty and staff parkers willing to forfeit all parking, rental, and waiting list privileges.
2. Carpool and ride share permits for $30 per year. Each carpool must consist of at least three full-time faculty or staff members. Only a primary renter is issued a parking space; all other members of the carpool forfeit parking, rental, and waiting list privileges.
3. Remote parking lot with shuttle service for $30 per year. University-provided shuttle service to remote lots that are on the southern periphery of campus.
4. Increase all reserved space parking to $102 annually effective July 1, 1989, to $126 by July 1990 with escalating annual increases after 1990.

With the active financial support of the university administration, the campus-community bus service concept was again put to a student vote. The critical changes since the first referendum were a reduced $10 per semester mandatory fee and a 1-year trial period.

The April 1989 campus-community bus service referendum

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**FIGURE 6**  #23 Shuttle Route.
was successful with 3,102 students voting for the campus-community bus service out of 4,800 votes cast.

RESULTS

The new campus-community bus service, the I System, was implemented in August 1989 and included the following components:

- #21 Quad Route, weekdays 7:30 a.m. through 5:30 p.m., 5-min service (Figure 4);
- #22 Illini Route (Figure 5);
  - Weekday 7:00 a.m. through 2:00 a.m., 15-min service;
  - Saturday 12 noon through 6:00 p.m., 30 min service;
  - Saturday evening 6:00 p.m. through midnight, 15-min service;
- #23 Shuttle, weekdays 7:30 a.m. through 5:45 p.m., 5-min service, university-operated (Figure 6).

The I System has been an overwhelming success. Student rides taken during the first semester totaled 1.8 million. Of these, 800,000 were taken on the new campus network and 1 million were taken on the city system. Between August and December of 1989, the #21 Quad Route averaged 120 passengers per revenue-hour, whereas the #22 Illini route averaged 52 passengers per revenue-hour.

Since the implementation of the I System, the CUMTD has increased its productivity and its value to the community. A comparison of fiscal year 1989 to 1990 demonstrates the positive impact the new campus service has had on CUMTD system-wide efficiency and effectiveness. For fiscal year 1990, ridership has approximately doubled over the same period for previous year, from 2,796,120 rides in 1989 to 5,449,317 in 1990. In addition, operating revenues increased by 54 percent, whereas operating expenses increased only by 21 percent. Passenger revenue per revenue-vehicle-hour has increased over 40 percent to $12.10 per revenue-vehicle-hour. Likewise, unlinked passenger trips per revenue-vehicle-hour have increased to over 40 trips per hour, an increase of approximately 64 percent over 1989 (3). Table 3 presents a comparative summary of the impacts of the new I System on significant operating statistics for fiscal years to date of 1989 and 1990.

Because of the success of the I System and supportive TSM measures, the university has postponed plans for the construction of three 500-space parking structures at a cost of over $5 million. For less than 5 percent of the cost of constructing these parking garages, the university has subsidized 623 full-time faculty and staff members' annual bus passes. Over 500 participants have enrolled in the university-sponsored low-cost carpool, ride share program, and remote parking program. These programs, combined with the bus subsidy program, have reduced the demand for parking by over 1,000 spaces (8). By supporting these complementary programs, the university avoided the costly annual amortization, operating, and maintenance costs associated with the construction of new parking garages.

Another related benefit of the I System has been the decline of student-registered vehicles on campus. According to the Parking Division there has been a 30 percent decrease of student-registered cars on campus from 6,523 in academic year 1988 to 4,558 in 1990 (see Figure 7).

Finally, and most importantly, the students have a comprehensive transportation system that addresses their unique needs. For only $10 per semester, students have unlimited access to the university as well as to the city system, providing them with employment, housing, cultural, shopping, and recreational opportunities that may have been previously denied.

<table>
<thead>
<tr>
<th>TABLE 3 IMPACTS OF THE NEW I SYSTEM ON CUMTD OPERATING STATISTICS, 1989 VERSUS 1990</th>
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<tbody>
<tr>
<td><strong>Fiscal Year</strong></td>
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<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Operating Revenues</td>
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<tr>
<td>Operating Expenses</td>
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<tr>
<td>Operating Cost Recovery Ratio</td>
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<tr>
<td>Passenger Revenue per Revenue Vehicle Hour</td>
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<tr>
<td>Ridership (Unlinked Trips)</td>
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<tr>
<td>Unlinked Passenger Trips per Revenue Vehicle Hour</td>
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</table>

On campus, the I System provides an important link in an increasingly expanding and disjointed campus.

A random survey of students was undertaken during the 1990 spring semester to measure the level of usage and to measure students’ perceptions of the campus community bus service. Over 75 percent of the people surveyed indicated they had used the campus community service at least once during the school year, which, when factored up would represent 25,691 students that have at least tried the system. In general, over 70 percent of the respondents indicated they were satisfied to very satisfied with six of the categories; days on which buses run, hours buses run each day, vehicle comfort and cleanliness, vehicle safety, driver courtesy, and amount of service on campus. Of the three categories that had under a 70 percent satisfaction rate, the how often buses run category still had over a 60 percent satisfaction rating. The only two categories that fell under the 60 percent satisfaction level were buses arriving on time at 58.6 percent and passenger capacity (over-crowding), 43.9 percent (9).

NEW DIRECTIONS

A third student-wide referendum held in March 1990 was successful in making the I System permanent. Of the 3,000 votes cast, 88 percent voted for making the I System permanent with the establishment of a $13 per semester fee. In addition, the university agreed to increase its participation in the I System, providing $230,000 per year over 3 years. In the Fall of 1990, the CUMTD will take over the #23 remote parking shuttle route, previously operated by the university, representing 15,000 hours of extra service.

The university is also committed to continue subsidizing bus passes, promoting low-cost parking for shared-ride users, remote parking with shuttle service and incremental increases in the cost of reserved faculty and staff parking. It has also raised meter rates from 25 to 50 cents per year while maintaining a fee of $30 per year for parking in the remote commuter lot.

CONCLUSION

The successful results of the recently implemented campus-community I System demonstrate that transit can play a new and leading role in improving mobility within an expanding and dispersed campus environment in a cost-effective manner. The establishment of the original concept to a permanent goal of campus-community bus system evolved over the course of 5 years. It took three student referendums, a change in university parking policy, and the active participation of the university for the goal to be realized.

Important insights can be gained from this experience, primarily, that a successful plan must be comprehensive. Traffic patterns and the allocation of parking may be part of the problem as well as part of a solution. A system that responds to the mobility and safety needs of the students, faculty, and staff members needs to be designed. For the students, this is accomplished by a providing unlimited access using a fare high-frequency circulating intracampus service that is integrated with the regular city system. This integrated campus-community system intercepts off-campus students and other users at the point of origin, thus avoiding the attendant problems with automobile commuting to campus, and provides an easy system to access dispersed university activity centers.

In addition, the success of the I System is linked to the complementary and comprehensive TSM measures implemented by the university. These measures have included both incentives and disincentives, such as 80 percent employer-subsidized transit passes, reduced parking rates for shared-ride users and for parkers using remote parking lots, and finally, escalating increases in the cost of central campus reserved parking spaces.

The success of this program has resulted in the university’s postponing the construction of $5 million worth of parking garages on campus. A comprehensive approach that maximizes the use of existing resources, with transit as a centerpiece, is a cost-effective solution to the traffic, transportation, and mobility problems that plague urbanizing universities.

![Figure 7](attachment:image.png)

Source: University of Illinois, Parking Division, Parking Statistics 1990.

FIGURE 7 Student automobile registrations of U of I.
REFERENCES


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