

Approach to Transportation Planning for a Higher Education System

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Concern for energy conservation in relation to campus development led to the need to develop transportation plans for each campus in the University of Wisconsin (UW) System. The major elements of the planning process used by UW System Administration and 13 university transportation planning committees in the development of the plans are described in detail. Land use studies and student housing models were developed for each campus in coordination with local and regional plans. A survey of student and employee transportation characteristics and special utilization studies were conducted, and modal characteristics were analyzed. Modal projections were made to determine transportation needs. Each university in the system submitted a transportation plan report containing planning process documentation and recommendations for Board of Regents approval. Along with transportation plan implementation, each university campus is to initiate a transportation system management program to develop and market low-capital-cost measures intended to reduce reliance on the single-occupant vehicle and to monitor and evaluate transportation systems as they affect the university.

At the University of Wisconsin (UW), campus development plans were prepared in the 1970s by private consultants and university and UW System staff for each of the 13 campuses. Each campus plan had a transportation element that dealt with physical facilities for circulation and parking. Today planning has taken a new direction. Members of the Board of Regents and legislators currently express a desire for short-term 6-year campus plans that will effect energy resource conservation and efficient use of transportation resources. Planning today requires consideration of alternative solutions to transportation problems in the development of operating and capital budgets.

In 1980 the UW System became deeply involved in all-mode transportation planning for three major reasons:

1. The local communities and regional governing bodies were relying on university participation in transportation planning because most of them do not have the resources to conduct detailed campus studies and are unable to implement the recommendations that result from such studies.
2. Students and faculty were increasingly concerned about the prevailing status quo and unsuccessful attempts to improve campus access for automobiles, buses, bicycles, and pedestrians.
3. Campus and Board of Regents requests for such improvements were consistently turned down by state reviewing bodies, which apparently failed to accept the seriousness of the problems.

The period from 1965 to 1975 was an era of rapid growth for the UW System as it was for most institutions of higher education. Enrollments mushroomed from 40,000 to 120,000, and academic facilities had to be developed to meet the needs of this burgeoning population. Campus access was justifiably a secondary concern. Building sites were secured by acquiring residential city blocks, and existing parking lots frequently became the most convenient building sites. City streets of former neighborhoods remained in place to provide much needed parking for automobiles. During this period, commuting by bicycle was relatively insignificant, concerns for pedestrian convenience and safety were largely ignored, and few people rode buses to campus because municipal transit routes were generally oriented to downtown business districts. Driving an automobile was popular.

The 32,008 parking spaces that existed in the UW System in 1975 increased by only 374 (less than 1 percent) by 1982. Available land for parking had become one of the state's most urgent needs during this period of rapid development.

It was a common belief in the early 1970s that high fuel costs and the energy shortage would alleviate system transportation problems. This has not been the experience in Wisconsin.

As background for state transportation planning and budgeting, the Wisconsin Department of Transportation (DOT) developed travel demand forecasts for the purpose of estimating future transportation needs:

Item	Actual	Projected	
	(1981)	1990	2000
Automobile fleet	2,496,700	2,756,100	3,345,100
Fuel efficiency (miles/gal)	15.8	22.0	31.9
Miles of travel (billion)	33,750	40,960	51,574
Fuel consumed (billion gal)	2,284	2,211	2,207

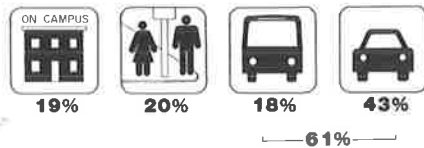
These forecasts show that for the years 1990 and 2000 there will be a greater number of cars on the road and more vehicle miles of travel, that automobiles of the future will be more fuel efficient, and that, combined with the increase in vehicle miles of travel, the demand for fuel will remain fairly constant.

At the 13 universities that constitute the UW System, there were 149,350 students enrolled during 1982. Of that enrollment, 34,750 (23 percent) were students living in university housing and 114,600 (77 percent) were commuting students. The commuting students and 29,360 employees (faculty and staff) living off-campus made up the 143,960 commuters who traveled daily from their residences to the campus. The transportation planning focused primarily on the needs of the commuting off-campus population because 109,400 (76 percent) of the commuters lived more than 1 mile from campus and relied on some form of vehicular transportation to the campus.

As an example of the importance of transportation to the universities, the 1981 enrollment at UW-Eau Claire was 10,963; 3,554 students lived in university housing, 2,000 lived off-campus but within 1 mile of campus, and 5,409 lived more than 1 mile from the campus. Almost half of the students at UW-Eau Claire commuted daily to campus from beyond a reasonable walking distance. Overall, between 50 and 80 percent of the populations of the 13 UW System campuses live beyond walking or bicycling distance of the campuses.

During the late 1970s a campus development plan was completed for each university that dealt with the transportation elements of pedestrian and vehicle circulation on a broad scale and parking needs in detail. In addition, the consulting firm of Howard Needles Tammen and Bergendoff (HNTB) was engaged to define and justify university parking needs and to lay out financial management strategies.

Figure 1. Distribution of 1982 UW System on-campus and off-campus population and commuting modes.



The February 1980 HNTB report on parking needs was adopted by the UW Board of Regents and the State Building Commission; however, the State Legislature and the Board of Regents required additional assurance that all available alternative transportation modes were being used to their fullest. Accordingly, transportation plans with follow-up transportation system management (TSM) actions will be the vehicle for successful community and campus transportation development.

In July 1980 a resolution was passed by the UW Board of Regents stipulating that transportation plans be prepared for each campus in the UW System in response to the following legislative mandate:

The board shall direct the administrative officers of each campus to work with the regional planning commissions and the local authorities of the community in which the campus is located to evaluate the transportation needs of the campus population. The board shall require each campus to develop a transportation plan for the campus to effect energy resource conservation and efficient use of transportation resources. The plan shall include pedestrian walkways, bikeways, bike routes, bicycle storage racks, car and van pools and, to the extent feasible, improved mass transit services. The transportation plans shall detail parking management strategies which provide incentives for the use of mass transit and high occupancy vehicles. The transportation plans shall be implemented by January 1, 1982.

IMPACT OF COMMUTING CAMPUS POPULATION

The importance of the off-campus commuting segment of the 179,000 UW System campus population and the need to respect the various modes of campus access became obvious in the transportation planning process. In the UW System, only 19 percent of the campus population, or 34,750 persons, live in campus residence halls. The UW System-managed housing program is highly successful, although it is dependent on economic conditions and student desires. One-fifth, or 20 percent, of the students and employees live within walking or bicycling distance in neighborhood housing. Many in this group drive because of job requirements or physical handicaps. Of the remaining campus population, 18 percent travel to campus daily by bus and 43 percent by automobile (see Figure 1). That nearly two-thirds of the campus population commute to a university daily is astonishing until it is recalled that campuses were established to provide access for higher education to all citizens of the state. Unique bicycle, transit, and automobile parking problems are addressed in the plan.

PROCEDURE TO PREPARE AND IMPLEMENT UW SYSTEM TRANSPORTATION PLANS

Before actual transportation planning began, a system transportation study task group was appointed that included representatives of UW System Administration, the Division of State Facilities Manage-

ment, and the Wisconsin DOT. This group developed a uniform procedure and reporting format that outlined the tasks and responsibilities of the universities in the system.

Each university in the UW System constituted a university transportation planning committee made up of representatives from the faculty, staff, and student body; the district department of transportation; the regional planning commission; and the city planning office. Mode subcommittees were set up to investigate existing plans and studies and to review and document modal characteristics. Objectives of the plan were identified and potential actions outlined. Program recommendations and implementation strategies were developed along with responsibilities and estimated budgets for recommended actions. Draft transportation plans were submitted for local review and approval and for implementation of actions in 1981 for which funding was in hand. The final task of each university committee was the preparation and submission of a 1982 transportation plan for approval by the UW System Administration and the Board of Regents. Plans approved by the Board of Regents will be submitted to the State Building Commission at the time that requests for the funding of transportation projects are made.

Transportation systems and patterns, including the pedestrian, bicycle, and mass transit modes, streets, and parking (both on-campus and on-street), were documented and mapped. Conflicts and relationships with other transportation systems were identified, and the maps were compared with city and regional plans for the purpose of integrating various systems.

LAND USE

Land use studies were completed to identify major traffic generators in the community, to show the strong relationships among the commercial, institutional, and residential areas that surround the campuses, and to point up their significance to the communities. For example, in the city of Eau Claire, the District Vocational Institute, the Sacred Heart Hospital, and the State Office Building--all of which are major traffic generators--are located contiguous to the UW-Eau Claire campus, which has a population of 10,963, and those combined land use activities create cumulative traffic congestion and parking problems in the area.

Most UW System Universities are located in urban settings, and most are surrounded by residential neighborhoods that provide housing for many students. The universities have a positive economic, social, cultural, and educational impact on the communities in which they are located. By virtue of their activities, they are major traffic generators and have a significant impact on the transportation systems of the surrounding area.

RESIDENCE SURVEYS

Off-campus housing data collected and analyzed in residence surveys are a key factor in the all-mode transportation planning process. Student housing location models were prepared for each university by using registration data plotted either manually on a city map or by a computer-originated dual independent map encoding (DIME) file.

UW-Madison

As a part of the recent transportation planning effort at UW-Madison, it became evident that it was desirable to be able to identify the residence location of each student and each university faculty and

staff member. At an early planning stage, it was perceived that graphic presentations of the geographic residences of the nearly 55,000 UW-Madison faculty, staff, and students would be valuable in terms of studying and planning for a variety of both transportation and housing issues.

Because of the multiple-use potential of maps that display a diversity of information, the mapping project was organized to involve several interested university offices, the City of Madison Planning Department, and the Dane County Regional Planning Commission. It was decided at the outset that the project would be developed by the UW-Madison Cartographic Laboratory, which was experienced in undertaking the generation of a cartographic data base and, subsequently, the generation of computer plots.

The objective of the project was to generate a computer graphic portrayal of census-tract-block data on a Madison urban-area base map (see Figure 2). The system was to be developed so that any data that could be geocoded to the census-tract or census-tract-block level within the Madison urban area could be plotted by computer. The process matches the UW-Madison Registrar's enrollment tape, which has been processed to generate tables of data geocoded to census tract blocks, with the DIME/GBF (geocoded base file), which includes coordinate locations. For the final plotted maps, there is the capability to choose virtually any scale within the physical limitations of the plotter. With only minor

reformatting of the data, a number of different graphic techniques can be used, including choropleth, isarithmic, dot, graduated symbols, and various three-dimensional histograms.

In its initial effort, the university is developing a series of computer-generated maps that will identify the total number of part-time and full-time students residing in each census tract. This information will also be generated by individual city block for those census tracts within approximately 1 mile of the center of the campus. A similar application is planned that will use the campus payroll tape in place of the Registrar's enrollment tape to generate information on the residence patterns of faculty and staff. As the maps are produced, they are intended to aid transportation planners in studying and planning improvements to various transportation components, such as public transit, ridesharing, bicycle routes, and automobile parking.

UW-Milwaukee

Locations of UW-Milwaukee student residences in Milwaukee County are shown in the three-dimensional model in Figure 3. The large peaks in the diagram represent the concentration of student residences in the Sandburg dormitory (1,821 students in 1981) and in the neighborhoods immediately adjacent to the campus. In cooperation with the Southeastern Wis-

Figure 2. UW-Madison student housing model.

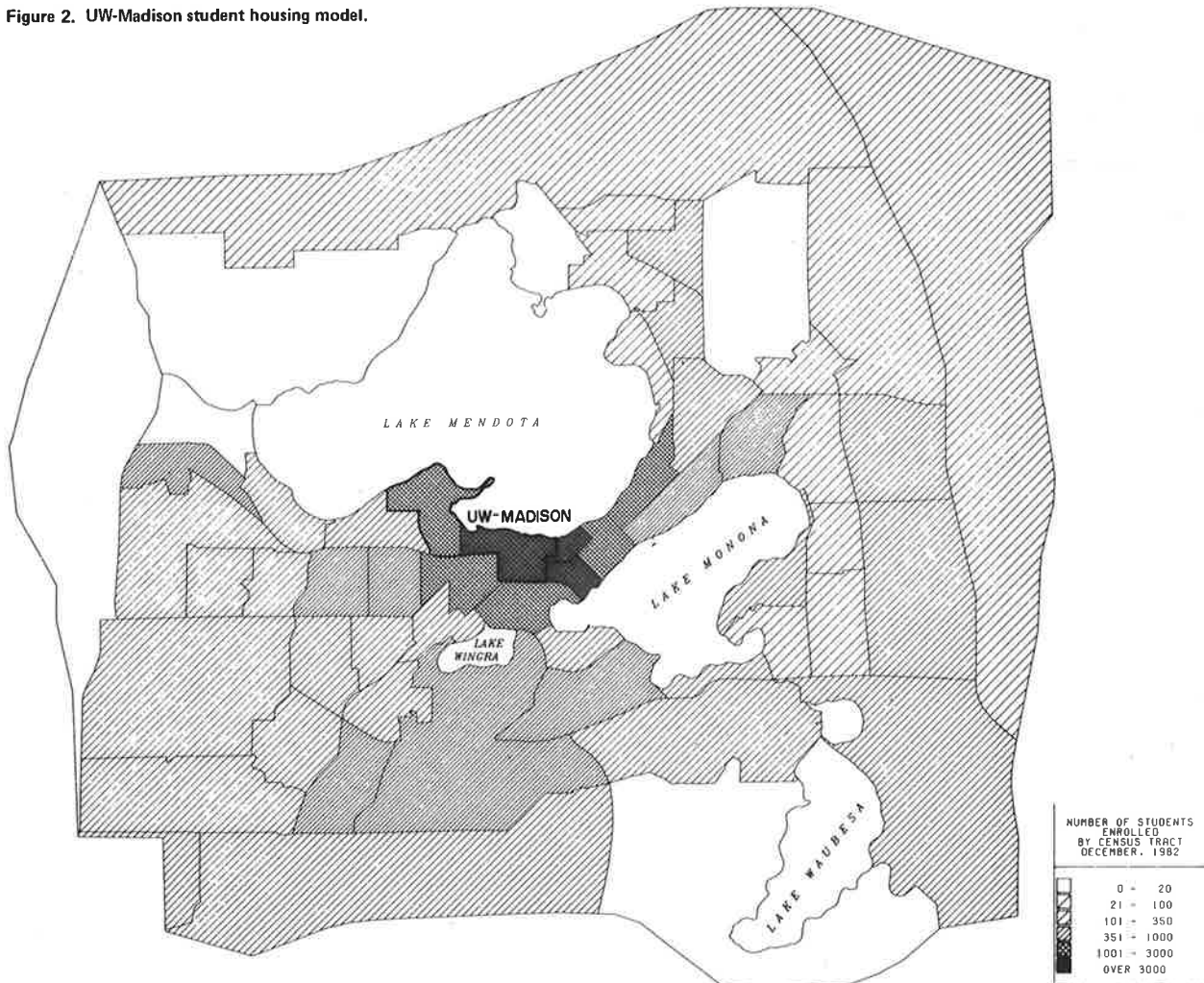
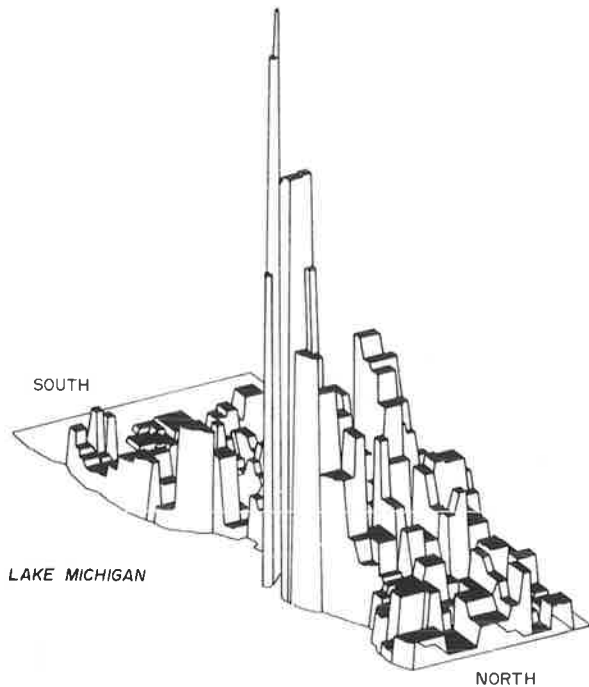


Figure 3. UW-Milwaukee student housing model.



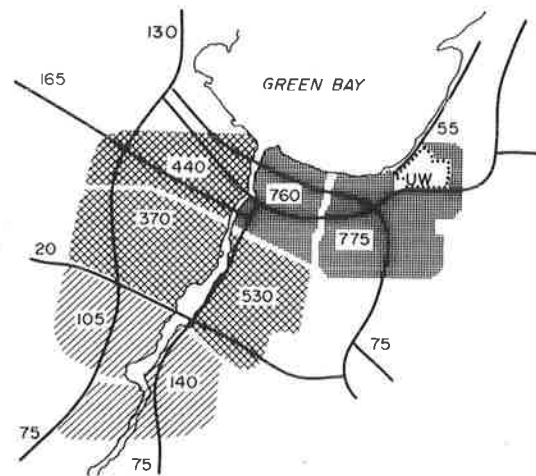
consin Regional Planning Commission, the computer-originated DIME-file technique has become a useful tool in transit planning. Concentrations of students can be evaluated to determine likely locations for bus stops, to improve bus routes, and to explore new service. With the ability to map student residence locations, UW-Milwaukee was able to work with the Milwaukee County Transit System to initiate the UBUS program of direct-route buses from areas of high student residence density to the campus. Bus ridership has increased from 12 percent of the students commuting to campus daily in 1972 to 46 percent (11,350 students) in 1981, which makes UW-Milwaukee one of the largest transit users in the county.

UW-Green Bay

The Green Bay-Brown County Planning Commission studied the manner in which specific bus routes served various traffic generators in their area, including UW-Green Bay. This was done by conducting on-bus surveys and by plotting student residences on a map divided into areas served by specific bus routes. This method of mapping is shown in Figure 4. The number of student residences located in the area served by the routes was counted and used to evaluate bus service to campus. The results of this study show that by far the largest concentration of student residence locations was within the service area of the direct route that serves the campus. Additional routes and improved scheduling were justified in 1982 based on this study of residence location and ridership. Both the UW-Green Bay campus and the Green Bay Transit Authority are pleased with the increased bus ridership.

Student housing location maps were prepared and used by other universities within the UW System to identify potential car and vanpool groups, to improve and expand transit service, and to evaluate off-campus student housing.

Figure 4. UW-Green Bay student housing model.



SPECIAL STUDIES

Several special studies were conducted to provide data for transportation planning. These studies included traffic, pedestrian, bicycle, and motorcycle counts to determine user volumes. On-bus surveys were also conducted, and bus-stop counts were made. The annual August parking inventory was conducted systemwide and tabulated both developed and temporary parking spaces by user group. Utilization studies of on-campus and street parking were conducted in October on three consecutive days between 7:00 a.m. and 5:00 p.m. The surveys were conducted during October, when parking habits are well-established and patterns can be documented. Surveys of vehicle type and size, along with the parking inventory and utilization studies, established the framework for planning future parking facilities. Major studies of access for the handicapped were also completed and a systemwide improvement program was initiated.

TRANSPORTATION SURVEY

The transportation survey of students and employees, conducted every 2 years systemwide, provided the most significant data base for transportation planning and became the common thread of information that could be applied to the 13 UW campuses even though each has individual characteristics.

The objective of this research is to produce an accurate reflection of the parking and transportation needs of members of the University community. The survey form contains 16 questions in basic categories:

1. Transportation characteristics, including the most frequent way of traveling to campus by various modes, frequency, arrival and departure time, distance traveled, parking location, or other mode choice;
2. Housing characteristics, including place of residence by zone, distance of housing from campus, and highway of entry if living outside the city;
3. Bus-travel characteristics, including length of trip, frequency, and route taken;
4. Employment characteristics, including job location if employed, travel mode, class-job relationship, and hours worked; and
5. Personal information about the individual including academic standing, sex, and credits taken.

Distribution

The distribution and survey techniques have been improved over the years. Initiated in 1965, the transportation survey was distributed to all students and employees during the class registration period. By 1975 the survey sample was reduced to 80 percent of the university population and distributed in select locations such as the student center and administration buildings. In 1977 70 percent of the students were surveyed in classrooms and all employees were surveyed through the payroll process. In 1979 and 1981 computer-selected statistical random samples were taken with survey forms completed by the sample population. This same technique was to be used again in October 1983.

Technique

The small probability sample consisted of students, faculty, and staff selected by computer to assure a random distribution of respondents. Survey forms were mailed during the second week of classes after students and employees had developed travel patterns. Two weeks later there was a follow-up mailing to those who had not returned their forms. The completed forms were finally processed by computer. The results obtained from the survey sample were applied to the university population, and the data were tabulated for the UW System. The results were further analyzed and used as the data base for transportation planning.

Selected Survey Questions

An analysis of the survey data reveals significant responses and trends that affect transportation planning. Several key survey questions are described and their results are tabulated in the following paragraphs.

Seasonal Comparison of Travel Modes

Survey data have shown a significant difference between travel habits in good weather and in inclement or winter weather. To the survey question, What is your most frequent way of traveling to campus or class in good weather and in inclement or winter weather?, the response at UW-Eau Claire was as follows:

Mode	Percentage Using Mode	
	Good Weather	Inclement or Winter Weather
Walk	48	50
Carpool or Vanpool	14	19
Drive car or truck	16	22
Motorcycle	3	--
Bicycle or moped	15	1
City bus	3	5
Passenger, other vehicle	1	3

In Wisconsin bad or inclement weather prevails during two-thirds of the academic year. Bicycling and motorcycling are significant modes of travel during good cycling weather, usually early fall and late spring, but become insignificant during the winter months because of the cold weather and the ice and snow on the streets. Those who bicycle or motorcycle in good weather either walk to campus or switch to some vehicular mode of travel during the winter. A survey conducted in good weather that does not ask about travel patterns in bad weather is misleading. Note the significant difference in the number of persons traveling to campus by vehicle

(drive car, carpool, or bus) by weather type. Because the bulk of the school year falls in the winter months, those characteristics are key to transportation planning.

Modal Trend

Travel habits have also changed since 1974 to favoring more fuel-efficient modes of transportation. UW-Eau Claire has experienced this typical trend in travel modes. To the survey question, What is your most frequent way of traveling to campus in winter or inclement weather?, the response was as follows:

Mode	Percentage Using Mode		
	1974	1979	1981
Walk	56	55	50
Carpool or vanpool	4	15	19
Drive car or truck	33	24	22
Motorcycle	--	--	--
Bicycle or moped	--	--	--
City bus	2	4	5
Passenger, other vehicle	--	2	3

Nearly all residence hall students are expected to walk to classes and, as stated earlier, the number of commuters who walk to campus is expected to remain fairly constant although the percentage will respond to enrollment changes. UW-Eau Claire population in 1974, 1979, and 1981 was 10,464, 11,688, and 10,963, respectively. Note that as enrollment increased at UW-Eau Claire the number of persons living within walking distance did not increase; therefore, the percentage of persons walking decreased. Ridesharing has increased significantly and anticipated increases will reduce the demand for parking. Whereas carpooling has become more popular, the use of single-passenger vehicles has decreased because of rising ownership and operating costs and increasing parking fees. Commuters have switched to ridesharing or mass transit during this period. Because motorcycles, bicycles, and mopeds are little used during inclement or winter weather, which constitutes the greater part of the school year, they cannot be considered significant alternatives to automobile use. City bus lines serve 9 of the 13 UW System campuses, and those universities show moderate increases in mass transit ridership.

Commuting Distance

Commuting students and employees who live within 1 mile of campus can normally be expected to walk to campus, whereas those who live beyond 1 mile of campus generally rely on some other mode of travel. The one-way distance between commuter residences and the campus is useful in determining commuter needs.

To the survey question, What is the one-way distance from campus to your current residence?, respondents answered as follows:

Distance (miles)	Percentage of Respondents		
	1974	1979	1981
<1	27	25	26
1 to <2	30	29	28
2 to <5	24	22	19
5 to <10	8	11	13
10 to <25	9	8	8
25 to <50	1	3	4
≤50	1	2	2
Total >1	73	75	74

These data show that 26 percent of the commuters at UW-Eau Claire live within 1 mile of campus and 74 percent live beyond 1 mile. Because the campus is located adjacent to well-established residential

neighborhoods and no new housing developments are anticipated, the number of commuters who walk to campus has been and is expected to remain fairly constant. Although the percentage of commuters who live 2 to 5 miles from campus has dropped from 24 to 19 percent, the number remains fairly constant, which shows that the supply of housing in the Eau Claire area is fairly stable. The percentages and numbers of commuters who live beyond 5 miles of campus and of those who commute by automobile have increased the most, and this increase correlates with the increase in ridesharing to campus. The trend is for students and employees to live in the more rapidly growing urban areas of their communities. More persons are living at home and driving greater distances.

Enrollment Trends by Sex

Parking surveys conducted in the 1960s indicated that enrollments were male-dominated and that few women brought cars to campus. Today that trend has reversed: more females attend college and an increasing number bring cars to campus. The average campus ratio in 1982 was 60 percent female and 40 percent male and cross tabulations revealed changing trends.

To the survey question, What is your sex?, the response was as follows:

Sex	Percentage of Respondents		
	1967	1979	1981
Male	70	44	42
Female	30	56	58

Employment Trends

To finance their education and living costs, many students take part-time jobs that require some form of transportation. Student employment data show that about half of the students have jobs and work an average of 15 hr/week. Systemwide, more than one-third of the students (50,000) work off-campus. Many rely on automobiles to travel to their jobs, and most travel directly from classes to their places of employment. Campuses seek to accommodate student employment needs by providing on-campus parking for those who have jobs. To the survey question, Are you employed?, respondents answered as follows:

Employment Status	Percentage of Respondents
No, not employed	48
Yes, on-campus	21
Yes, off-campus and outside city	9
Yes, off-campus and in same city as university	22

TRANSPORTATION PLAN REPORT

Contents

As a summary of transportation planning efforts, each university in the system completed a 1982 transportation plan report. Background studies on energy and travel trends, planning process participation, and relationships to other planning efforts were woven into the report. The plan objectives were defined and transportation characteristics were analyzed by using survey data. Actions to improve transportation systems and complete external campus development were recommended to meet the planning objectives.

Recommendations were phased incrementally to conform with the capital budgeting process and to be

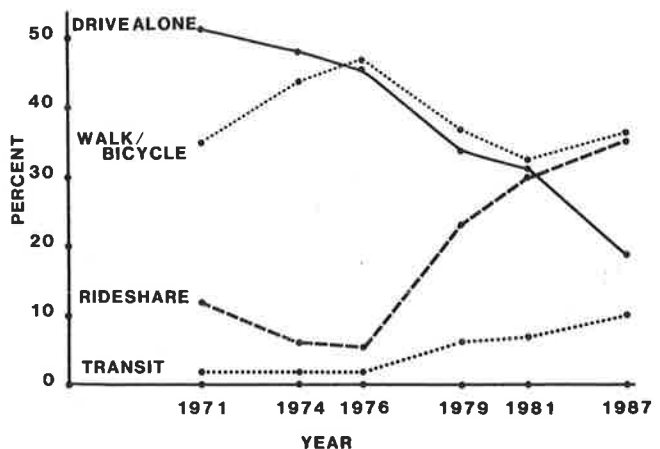
sensitive to changes in transportation trends. Actions identified for immediate implementation had funding approved or required no funding. Actions identified for implementation in the period from 1983 to 1987 will be funded through the operating budget or capital budget funds will be requested. Actions planned for implementation after 1987 will be funded after 1983-1987 actions have been completed and evaluated. Budgets for each recommendation were developed, and the funding source, cost estimate, and implementation time frame were identified. Cooperative efforts involving the university were identified in which the participation of the community, regional planning commission, or state agency and the responsibilities of those involved were detailed.

Modal Trends

Based on the analysis of all available transportation information--land use studies, student housing location models, student and employee transportation survey data, review of public transportation services, use of on-campus parking, traffic conditions in the area, and review of current transportation programs--modal shifts were projected that defined the universities' transportation needs.

At most of the universities, no significant changes in the supply of student housing are anticipated; therefore, the number of commuters who walk to campus will remain fairly stable although the percentage will fluctuate with enrollment changes. Because of increased marketing and improved facilities and service, bus ridership at the seven campuses that do have bus service (not including Milwaukee and Madison) is projected to increase by roughly 5 percent by 1987. With projected decreases in enrollment and TSM marketing, this goal is easily achievable. Ridesharing is also projected to increase by approximately 5 percent by 1987 because of improved marketing and parking incentives established by the universities and rising transportation costs. Efforts made by the University will divert some commuters from single-passenger automobiles to the more fuel-efficient modes. By increasing bus ridership and ridesharing and decreasing the use of single-passenger automobiles, the demand for on-campus parking facilities will be reduced and significant energy savings will be realized. The present and projected transportation needs of the campuses are clearly illustrated in plots of modal trends such as that shown in Figure 5.

Figure 5. UW-Eau Claire modal trends: daily commuters to campus.



1981 TRANSPORTATION PLANNING ACCOMPLISHMENTS

In compliance with the legislative mandate, universities in the UW System undertook a number of actions to reduce energy consumption and to make more effective use of existing facilities during 1981-1982. Several of these actions have been coordinated with the communities and other agencies.

Pedestrian Facilities

Plans were completed to develop Garfield Avenue on the UW-Eau Claire campus into a pedestrian-oriented street. This cooperative effort between the university, the city, and the state will be funded by the assessable improvements program. Local municipalities participated in many walkway improvements, including street narrowings, sidewalk replacements, curb cuts, and crossing markings.

Bicycle Facilities

UW-Madison, the cities of Madison and Middleton, and Dane County cooperated in publishing and distributing city and county bicycle maps and a bicyclist's guide to encourage proper and safe bicycle use. The hitching-post bicycle rack designed by the bicycle task group, which was produced by the Department of Health and Social Services' Corrections Industries and made available to the universities, is secure, easy to use, and attractive. UW-Eau Claire constructed several bicycle parking areas in the academic core that use hitching-post bicycle racks. UW-Madison also used hitching-post bicycle racks in bicycle parking areas constructed at the new Clinical Sciences Center and at other campus locations.

Directional Signs

The Wisconsin DOT erected highway directional signs on Interstates and major highways that identify exits leading to UW campuses.

Access for the Handicapped

UW-Whitewater, because of its mission and commitment to the handicapped, operates four specially equipped vans to serve the handicapped. All campuses in the UW System are in the process of removing all barriers to facilities for the handicapped. These improvements include the installation of curb cuts, wheelchair ramps, elevators, and other improvements.

Ridesharing

UW-Milwaukee sponsors the UPOOL program, which helps commuters form carpools. Commuters fill out an information sheet that is kept on file and receive a number dot to place over their residence on a map. Other commuters can locate dots near their residences or along their routes to campus, reference their dots to the corresponding information sheet, and contact potential carpoolers.

UW-River Falls has divided the area surrounding the campus into 12 carpooling networks (6 in Wisconsin and 6 in Minnesota) and assigned a coordinator to each to assist in rider matching to form carpools. Survey data show this method to be highly effective inasmuch as 70 percent of those who commute daily to campus live more than 10 miles away and 37 percent of that group rideshare. The Department of Administration purchases vans for state employee vanpools. The cost of the van and the operating expenses are recovered from the riders.

Mass Transit

UW-Madison received UMTA funds to erect transit shelters on campus. Route maps and schedule infor-

mation were posted at bus stops to encourage bus ridership. UW-Milwaukee's UBUS program was initiated to reduce the demand for on-campus and on-street parking. UBUS currently operates on nine Milwaukee County Transit System routes. UW-Milwaukee has become one of the largest transit users in the county, second only to the downtown business district.

The UPARK program uses parking space at no charge at Milwaukee County's McKinley Marina and under the elevated expressway, and operates shuttle buses from the satellite parking lots to campus. Several communities have improved routing and scheduling due to cooperation resulting from residence surveys.

TSM PROGRAMS

Organization

Along with implementation of the transportation plan, each university will initiate a TSM program to develop and market low-capital-cost measures intended to reduce reliance on the single-occupant vehicle and to monitor and evaluate the effect of transportation systems on the university. The programs will lead to traffic reduction and improved vehicle flow by means of low-cost measures such as ridesharing, parking management, bus service improvements, bicycle and pedestrian improvements, and marketing. The university transportation plan committees will evolve into university TSM committees, and a TSM coordinator will be appointed at each university.

TSM Seminars

UW System Administration will sponsor a series of TSM coordinator training and program improvement seminars that will focus on TSM marketing and management, pedestrian facilities, bicycle facilities and programs, mass transit, paratransit, ridesharing, parking management, and survey techniques.

System Improvements

Transportation system improvements will focus on energy conservation. Marketing efforts will encourage more transit ridership, ridesharing, and bicycle use. Ridesharing will be encouraged by refining and promoting ride boards and by offering parking incentives. Computer-plotting techniques, student housing location models, and the feasibility of joint-venture housing developments will be studied. Communities will have to take an active part in the TSM programs by imposing on-street parking restrictions and enforcing ordinances covering automobiles and bicycles.

Transportation Survey

The transportation survey was to be repeated during the fall semester of 1983. Data from the survey will be compared with earlier survey data, and the results will be analyzed to measure the effectiveness of recent actions.

Transportation system improvements and TSM programs will reduce the number of automobiles on campus daily by promoting ridesharing and transit use and improving bicycle and pedestrian facilities. Thus, the overall objective of energy conservation will be realized.