Husky Stadium Expansion Parking Plan and Transportation Management Program

MICHAEL E. WILLIAMS

In 1984 the University of Washington sought approval of the city of Seattle to increase the seating capacity of its 58,500-seat stadium to a total of 72,200 seats. Given the severe traffic and parking problems already associated with the existing stadium, the city required the university to develop a workable parking plan and transportation management program that would mitigate the impacts of the additional seating capacity. This paper presents the major elements of the Husky Stadium Expansion Parking Plan and Transportation Management Program and discusses its implementation during the 1987 football season. The major components of the program include incentives to use public transit through the issuance of free transit scrip good for use on all transit routes serving the stadium area; the creation of a park-and-ride system that provides direct service from outlying areas of the city and county to the stadium; a slight increase in on-campus parking supply and the leasing of off-campus parking spaces with free shuttle bus service to the stadium; implementation of a special-event, restricted parking zone in residential neighborhoods near the stadium; and a marketing program to promote increased use of nonautomobile modes. The implementation of the stadium transportation program in 1987 was a great success, far exceeding expectations. Much of that success can be attributed to the free transit scrip program and park-and-ride system.

Unlike other parking, special-event parking is usually generated by activities attracting large numbers of people. The attraction of people to special events depends largely on individuals' leisure time; as a result, events are usually held during nonworking hours, such as evenings and weekends.

By its very nature a special event can cause traffic and parking problems. Most special events attract crowds that arrive over a 60- to 90-min period. When the event concludes, the crowds typically leave at the same time. Even with special-purpose facilities designed to accommodate special events, the rapid accumulation of people and vehicles and their sudden departure create potential traffic and parking problems. When special events take place at locations not specifically designed for them, associated parking and traffic demands can become a severe problem (*1*).

The parking facilities, located adjacent to the University of Washington's Husky Stadium, are not specifically designed to handle the impacts associated with special event traffic and parking. The university currently has 12,300 parking spaces located in lots spread throughout the campus area that are designed to serve faculty, staff, and students during a typical weekday. The stadium is almost exclusively used for Husky home football games that occur only six to seven times per year during the 3-month period from mid-September to late November. The parking facilities located in the east campus adjacent to Husky Stadium have a maximum weekday capacity of only 4,875 automobiles.

Before the 1987 football season, Husky Stadium had a seating capacity of 58,500. In 1984 the university sought approval from the city of Seattle to increase the seating capacity by 13,700 to a total 72,200. Given the severe traffic and parking impacts already associated with the existing stadium, the city required the university to develop a workable parking plan and traffic management program for the proposed expansion that would mitigate the impacts of the additional seating capacity. In addition, the city required the university to produce an Environmental Impact Statement (EIS) and to solicit input from the surrounding neighborhoods during the development of the plan and EIS. On the basis of this requirement the university produced the Stadium Expansion Parking Plan and Transportation Management Program (hereafter referred to as the TMP) that was adopted by the Seattle City Council on April 21, 1986.

The purpose of this paper is to present the major elements of the TMP and to discuss the results of its implementation during the 1987 football season. Before the major elements of the TMP are presented, a description of the University of Washington and its setting is provided, along with a summary of the parking and transportation conditions that existed before the expansion of Husky Stadium.

BACKGROUND

University of Washington's Setting

The University of Washington is a major 4-yr instructional and research institution located in the city of Seattle (see Figure 1). In 1987, there were more than 33,000 students enrolled at the university, along with more than 17,000 faculty and support staff. The University District, or U-District as it is more commonly called, is the largest activity center in King County outside the Seattle central business district. It is characterized by a mixture of densely populated neighborhoods, commercial and retail activity, the university, and a major hospital.

Given the transportation and land-use impacts associated with the university, the city of Seattle and the University of Washington agreed in 1983 to require the university to prepare

Transportation Office, University Facilities Building, FJ-05, Seattle, Wash. 98195.

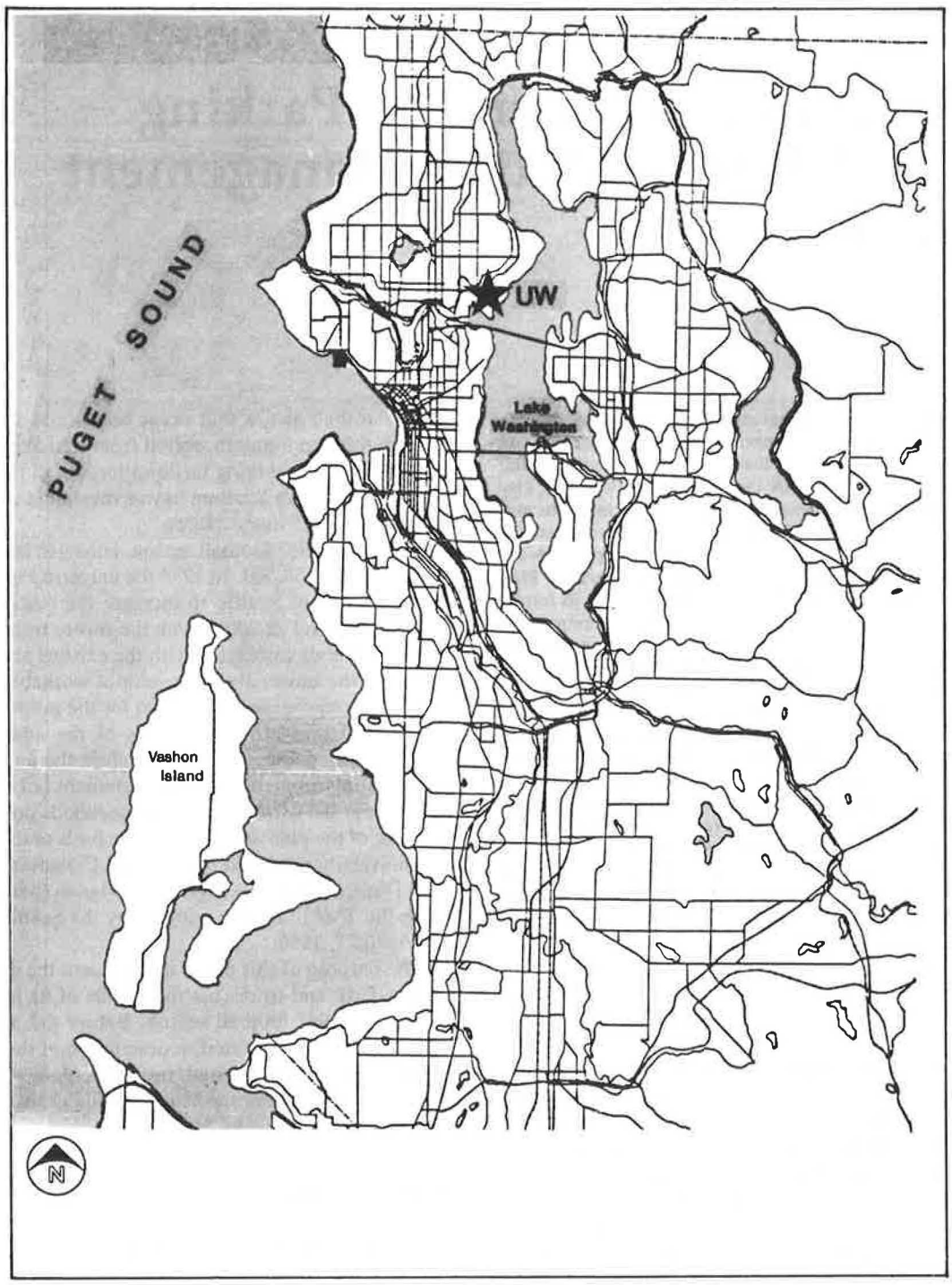

FIGURE 1 University of Washington location map.

a General Physical Development Master Plan (GPDP) that covered a 10-yr period and included measures to manage university-related traffic growth in the U-District.

The 1983 agreement also included a provision requiring the university to develop mitigating actions for traffic impacts associated with any expansion of Husky Stadium. These impacts were to be addressed through a workable parking plan and traffic management program.

Many access constraints limit the ability of Husky Stadium to accommodate special-event parking and traffic. These major access constraints are listed next.

- The stadium is bordered by water on two sides.
- Access to the site requires that vehicles operate a considerable distance over heavily traveled arteries to reach the stadium after they leave the freeway system.

- The four-lane arterial roadway in front of the stadium is the most heavily traveled in the state and includes a drawbridge just south of the campus.
- A major commercial and retail area is located west and northeast of the campus, with limited parking and street capacity for traffic.
- West of the stadium is the university hospital and health sciences complex serving a large population all year round, game day or not.
- High-income residential areas within walking distance of the stadium are affected by game-day parkers.

Conditions Before Stadium Expansion

Before 1987, there were 11,325 parking stalls, out of a total campus supply of 12,300, dedicated to football patrons for home games. Table 1 compares the number of parking spaces available at Husky Stadium, before stadium expansion, with that at other selected stadiums in the country (*1*). With 0.19 and 0.16 parking spaces per seat, Husky Stadium ranks in the middle of the range for stadiums shown in Table 1.

Table 2 shows the mode split for a sold-out Husky football game in 1984. The main transportation mode for football game attendees in 1984 was the private automobile, with more than 76 percent of the people arriving by that mode. Of the almost 20,500 vehicles used to access the game, more than 55 percent parked on campus and the remainder parked off campus in the U-District or on adjacent neighborhood streets (*2*).

Table 3 compares the percentage of persons who arrived by private vehicle for Husky football games before stadium expansion with that for other college football games played in major stadiums across the United States (*1*).

According to Table 3, the proportion of persons arriving by private automobile at college football games varies from a high of 95 percent at the Los Angeles Coliseum in California to a low of 68 percent at Memorial Stadium in Pennsylvania. The 76 percent preexpansion usage of private vehicles to access Husky football games makes it about average for other non-California stadiums.

The second most often used mode of transportation to Husky Stadium was walking (see Table 2). This fact makes Husky Stadium somewhat unusual compared with other stadiums in the country and is the result of its location in a residential area in close proximity to both on- and off-campus student housing. Almost 10 percent of all game attendees are walkers, motorcycle and bicycle riders, and those who are dropped off.

The remaining 14 percent of the people arrived at Husky Stadium in 1984 using public transit (4.2 percent), charter bus or boat (7.2 percent), or private boat (2.4 percent).

MAJOR PLAN ELEMENTS

The goal of the TMP for the expanded stadium was to accommodate a sellout crowd of 72,200 with less reliance on parking in the residential areas near campus than before expansion. The key to accomplishing this goal was to provide alternative modes of transportation other than the private automobile through such factors as increased transit service, preferential parking for charter buses, increased boat moorage, and so on, along with limited additional parking on campus. The university worked closely with the city of Seattle, Metro (the local transit agency), and the Washington State Department of Transportation (WSDOT) in development of the TMP (*3*). The successful implementation of the TMP required a continuing and cooperative effort between these agencies and the university. The main components of the program are as follows:

- Incentives to use public transit:
  - — Free transit scrip for all football game ticket purchasers that could be used on any Metro bus, and
  - — A new park-and-ride bus system that provided direct service from outlying areas of the city and county to the stadium;

TABLE 1 COMPARISON OF PARKING SPACES AT SELECTED STADIUMS (*1*)

Stadium	Seating Capacity	No. of Parking Spaces Provided by Stadium	Number of Parking Spaces per Seat
HUSKY STADIUM	58,500	11,325	0.19
Atlanta, GA	58,850	4,000	0.07
Shea Stadium, NY	55,000	7,400	0.13
Phila. Veterans, PA	65,300	11,000	0.17
Orchard Park, NY	80,000	15,000	0.19
Giants, NJ	76,000	20,800	0.27
Dodger, CA	56,000	16,000	0.28
R.F. Kennedy, D.C.	50,000	10,000	0.20

TABLE 2 MODE SPLIT, 1984 HUSKY FOOTBALL GAME

Mode	Persons	Vehicles/ Boats	ACO (a)	Percent of Persons
AUTOMOBILE MODE				
On Campus Parking				
Stadium Area	3,510	975	3.6	5.8
East Campus	12,260	4,900	2.5	20.3
Main Campus	6,750	3,070	2.2	11.2
South Campus	2,420	1,010	2.4	4.0
West Campus	2,740	1,370	2.0	4.5
Subtotal	27,680	11,325	2.4	45.8
Off Campus Parking				
U-District (b)	2,000	1,000	2.0	3.3
Neighborhoods (b)	16,340	8,170	2.0	27.2
Subtotal	18,340	9,170	2.0	30.5
Total Auto Mode	46,020	20,495	2.2	76.3
NONAUTO MODE				
Transit				
Regular Service	500			0.8
Husky Special	2,050			3.4
Charter Bus	3,280			5.4
Charter Boat	1,050			1.8
Private Boat	1,440			2.4
Drop Off/Walk/				
Motorcycle/Bike (b)	5,960			9.9
Total Nonauto Mode	14,280			23.7
TOTAL	60,300 (c)			100.0

(a) ACO: Average Car Occupancy.
(b) Estimated number of persons and vehicles.
(c) Includes 1,800 unseated attendees (press, vendors, etc.)

TABLE 3 PROPORTION OF ATTENDEES ARRIVING AT COLLEGE FOOTBALL GAMES BY PRIVATE VEHICLE (*1*)

Stadium/Location	Percent of Persons Arriving by Private Vehicle
HUSKY STADIUM	76
Los Angeles Coliseum	95
Orange Bowl, Florida	78
Cotton Bowl, Florida	87
Ohio State University, Ohio	84
Weber State, Utah	75
Ware Memorial	73
Memorial Stadium, Penn.	68

- Reduced parking rates for carpools:
  - — $6.00 for two or more occupants and
  - — $9.00 for single occupants;
- A slight increase in on-campus parking supply and leasing of off-campus parking spaces with free shuttle bus service to and from the stadium;
- Implementation of a special-event, restricted parking zone in selected neighborhoods to discourage people from parking in residential areas;
- A marketing program to promote increased use of public transit, carpools, and other nonautomobile modes of transportation, such as charter buses and charter boats; and
- A monitoring program to ensure that the goals of the plan were met and to provide a means to revise the TMP if required.

The elements of the plan just outlined provide many incentives to encourage nonautomobile usage; however, the plan operates at a disadvantage given the policies of the university's Intercollegiate Athletic Department. All contributors to the athletic program who purchase football game tickets are provided with a free parking pass by the Athletic Department

for the prime parking spaces closest to the stadium. The proximity to the stadium depends on the amount of the contribution. With expansion of the stadium, even more contributors have signed up. The incentive of a free parking pass makes it more difficult to convince people to use alternative modes.

Transit Scrip Program

The major goal of the transportation program is to encourage football game attendees to take public transportation to the stadium. In 1984, only 4.2 percent of the attendees arrived via public transit.

To achieve this goal all football game ticket purchasers are provided with transit scrip that allows them to ride free on any regular Metro service, "Husky Special" routes, and the new system of park-and-ride routes. The scrip is dated and valid on game day only and is mailed to all advance-sale ticket purchasers along with a description of the transportation program and information regarding transit routes to the stadium. Individual game ticket purchasers are either mailed transit scrip or given it when they pick up their game tickets on campus.

The Transportation Office is responsible for the printing and distribution of the transit scrip. Metro is responsible for counting the scrip after each game and billing the university according to the agreed reimbursement rate. Before 1987, game attendees using transit either took Metro's regular transit service to the U-District and walked to the game or used Husky Special service that delivered riders to within a block of the stadium.

Husky Special service is added by Metro on four existing routes to accommodate game attendees. All of the extra buses unload and load near the stadium, and arrival times are keyed to game time. Most of these extra buses are not needed elsewhere in the transit system, so they lay over on NE Pacific Street in front of the university hospital in position for loading after the game.

Park-and-Ride System

The university, in conjunction with Metro, developed a system of park-and-ride routes that provide service from outlying areas of the city and county. Figure 2 shows the location of the eight park-and-ride lots along with the parking capacity of each lot. There are three lots located in the north end with a total parking capacity of 1,185 vehicles, three lots located on the east side with capacity of 1,653 vehicles, and two lots located in the south end with capacity of 869 vehicles. Total parking capacity of the eight park and ride lots is 3,707. It should be noted that the Star Lake lot was not put into service until the third game of the 1987 season. The Houghton lot will be added during the 1988 season.

Reduced Parking Rates for Carpools

As shown previously in Table 2, the average car occupancy (ACO) rate for football game attendees parking on campus was 2.4 people per vehicle. This rate varies depending on the area of the campus; higher rates are achieved in areas closer to the stadium. The goal of the TMP was to increase the ACO for vehicles parking on campus from 2.4 persons per car to 2.7 persons per car. Vehicles arriving before 9:00 a.m. on game day pay the regular Saturday rate of $1.50 per vehicle. Faculty and staff with parking permits do not pay additional fees whether they are on campus to work or to attend the game. In 1987, the football parking fee was set at $9.00 for single-occupant vehicles and at $6.00 for vehicles with two or more persons.

Increase in Parking Supply

To accommodate more vehicles on game days, "stack-parking" was introduced to several parking lots on campus. With that change, the on-campus parking supply dedicated to football game parkers increased from 11,323 spaces in 1984 to 12,000 spaces in 1987. Figure 3 shows the general parking zones by campus area. The total number of parking spaces by zone, along with the number of spaces available for football parkers, is also shown in Figure 3 and summarized in Table 4.

In addition to the increase in on-campus parking supply, two off-campus parking facilities located in the U-District with a total of 706 spaces were leased by the university. The cost to park in the facilities is set at $4.00 and is competitive with that of other private parking lots in the area. As an incentive to use the university's leased off-campus parking facilities, a free shuttle bus with service to and from the stadium is provided to all parkers. All occupants of the vehicles that park in the garage are given a ticket for the shuttle bus. The ticket is shown to the driver and retained by the passenger for a ride to the game. After the game, the tickets are surrendered to the driver for a free return trip to the parking facilities.

Neighborhood Parking

Under the TMP, the impact on parking in the residential neighborhoods was to be mitigated through increased enforcement, multiticketing of vehicles, increased towing, and—if appropriate—increased parking fines. In addition, the TMP called for expanding the "no parking day of football game" zones in the Laurelhurst area northeast of the stadium and the Montlake community located south of the Montlake Bridge. Also, the residential parking zone that was in place in the Montlake community during weekdays was to be expanded on the weekends of football games via a special event residential parking zone.

Marketing Program

The TMP called for the university's Transportation Office and the Intercollegiate Athletic Department to work together on an aggressive marketing program to promote alternative modes of transportation. These marketing efforts were to include

- Promotional information mailed to season ticket holders,
- Public service announcements on local radio and television,

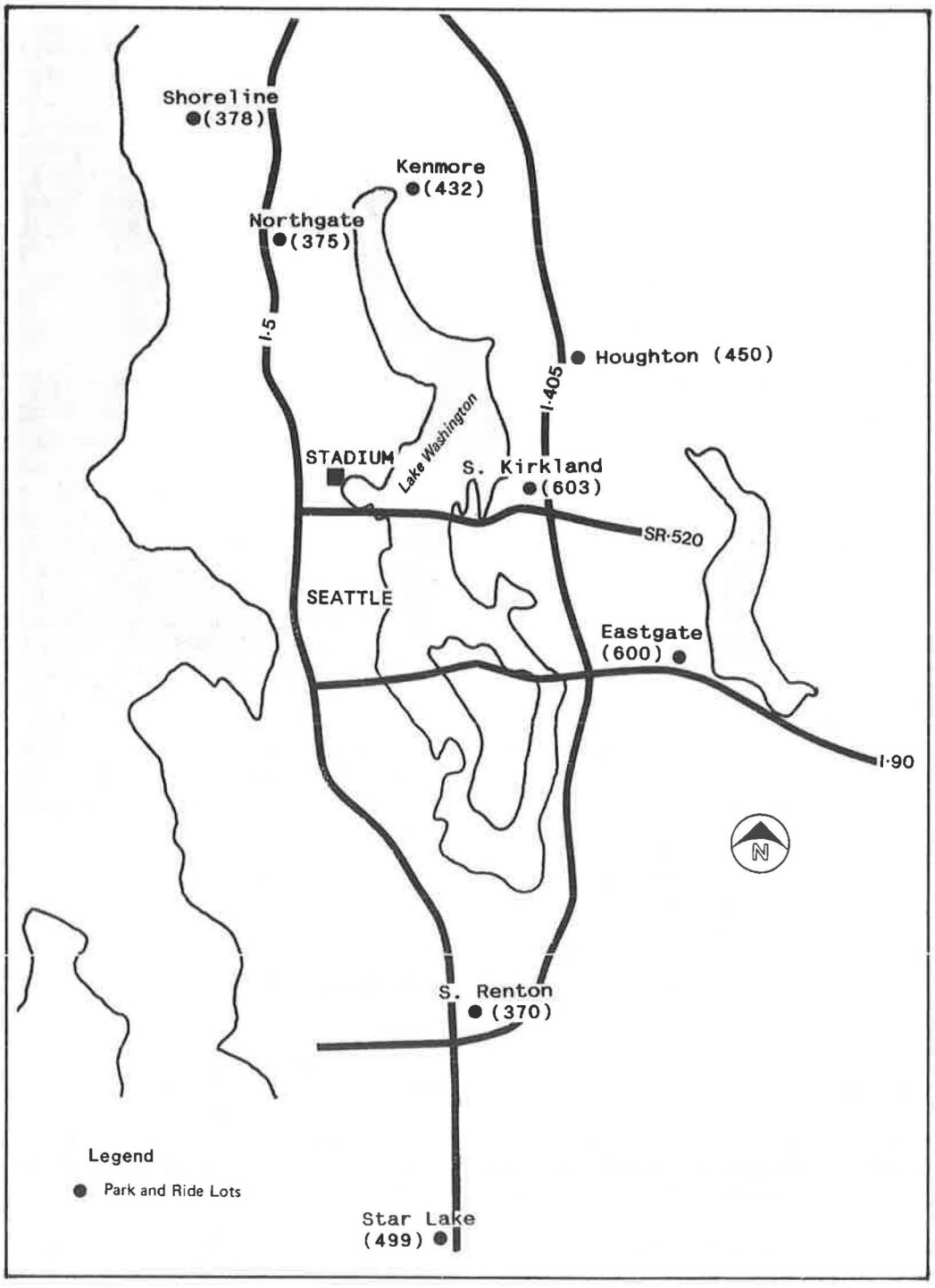

FIGURE 2 Husky Stadium park-and-ride lots.

- Public service messages on the stadium scoreboards and marquees,
- Special promotional events to publicize park-and-ride and transit services, and
- Other promotional activities developed by the Transportation Office and the Intercollegiate Athletic Department.

Monitoring Program

The monitoring program associated with the TMP is designed to provide information that will allow the university to make adjustments so that the desired goals are achieved. Information is to be gathered during each football season to determine the number of vehicles and the ACO for vehicles parking on campus and the numbers of people using public transit, charter buses, and boats. The data are to be reviewed to determine whether the goals of the TMP are being met and whether adjustments are needed.

An advisory group consisting of representatives from the university, the city of Seattle, Metro, WSDOT, and the community will meet each spring to review and assess the results of the monitoring program. In the event that the TMP needs adjustment to achieve the desired goals, the advisory group

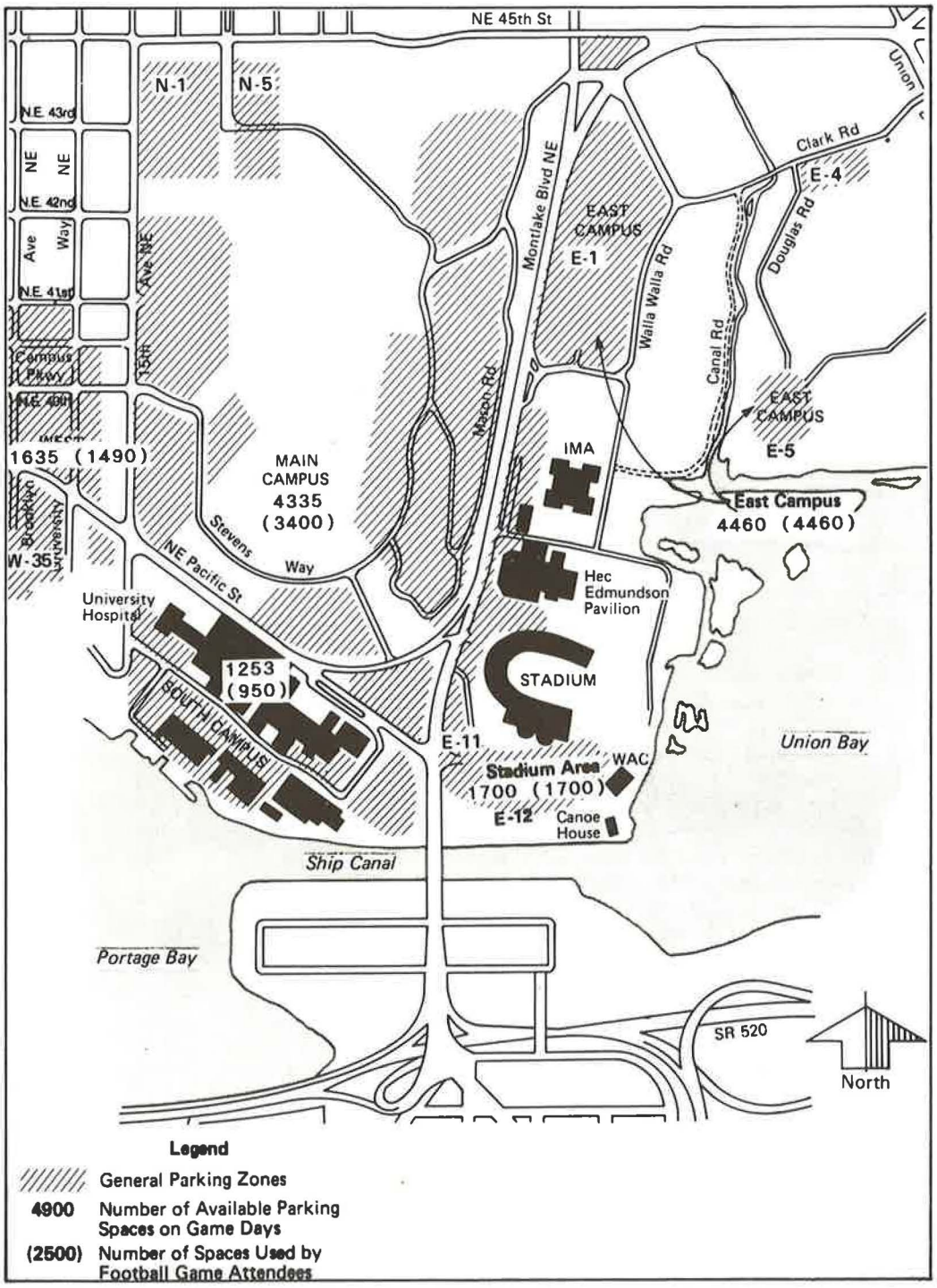

FIGURE 3 General parking zones by campus area.

will determine the appropriate action needed and responsible agencies involved. Any changes to the adopted TMP must be reviewed by the Department of Construction and Land Use, the Seattle Engineering Department, and approved by the city council.

RESULTS OF THE IMPLEMENTATION OF THE TMP

This section presents the results of implementing the TMP during the 1987 Husky football season. Particular emphasis is placed on discussing the development, operation, and results associated with the successful implementation of the free transit scrip program and park-and-ride system. The results of the neighborhood parking, marketing, and monitoring programs are also presented, along with a review of the program costs.

Transit Scrip Program

Working with Metro, the university developed scrip that came in a strip of seven tickets, with the date of the game printed on each ticket. Users were instructed to detach the ticket for

TABLE 4 ON-CAMPUS PARKING SPACES

Campus Area	Total Number of Parking Spaces	Spaces Available Game Attendees
Stadium Area	1,700	1,700
East Campus	4,460	4,460
Main Campus	4,335	3,400
South Campus	1,253	950
West Campus	1,635	1,490
Total	13,383	12,000

the day of the game and to use half the ticket for the trip to the stadium and the remainder for the trip from the stadium.

On the basis of preseason ridership estimates and associated coach needs, Metro determined that a one-way fare of $2.00 for the premium park-and-ride service would recover costs. It was decided that both Husky Special and regular transit service would be priced at the current one-zone Saturday rate of $0.55. It was estimated on the basis of these rates that the university would be required to pay Metro almost $190,000 for the 1987 subsidized transit service to Husky Stadium.

The Transportation Office developed and produced two brochures that were provided to all Husky game ticket purchasers. The *Husky Football Traffic and Transportation Guide* provided highlights of the new transportation and parking program for the 1987 season and included information on the transit program, parking rates, charter boats and buses, the Special Event Parking Zone created in the Montlake community, and postgame traffic routing. The second brochure, *Husky Football Transit Guide*, explained the transit scrip program and provided information on the Husky Special routes and park-and-ride system. The park-and-ride system description included information on bus schedules, pre- and postgame bus loading, and payment procedures, and a map with directions to the park-and-ride lots.

Because the Athletic Department had specific requirements for the type and size of envelopes used to mail football game tickets, the transportation brochures and transit scrip had to be mailed to season and individual ticket purchasers in a separate mailing, using labels provided by the Athletic Department.

Park-and-Ride System

As estimated in the TMP, when fully implemented, the eight-lot park-and-ride system would carry 2,740 riders to each game using 35 to 40 articulated buses. During the 1986 football season (before stadium expansion), limited park-and-ride service was introduced from the Northgate and South Kirkland park-and-ride lots (see Figure 2). Ridership on these two routes far exceeded expectations, averaging just beyond 3,000 passengers to each of the six home games.

On the basis of the experience of the 1986 season, estimates of park-and-ride ridership were increased to 6,000 riders per game. This expected increase in ridership caused major refinements of the operational aspects of the plan, including the number of required Metro supervisors, bus requirements, the routing of buses to the stadium, the staging of busing during the game, and, most important, the loading of passengers at the conclusion of the game.

A color coding system was established to assist passengers in finding their postgame loading area. Color-coded dash signs were placed in the front and side windows of the park-and-ride buses, corresponding to large, colored "bubble" signs held by park-and-ride attendants.

Once buses reach the loading area, Metro supervisors and additional park-and-ride attendants assist in loading the buses. To speed the loading process, both doors are used, and people pay with transit scrip as they leave the bus through the front door at the park-and-ride lot.

Using this postgame loading system, all buses were loaded and out of the area in less than 25 min after the conclusion of each game.

Data Collection Effort for 1987

During the 1987 season the following data were collected for each home game:

- Number of vehicles parked on campus by area,
- Number of vehicles and total persons using the Safeco parking facilities in the U-District,
- Number of passengers riding the Safeco shuttle both pre- and postgame,
- Husky Special and park-and-ride transit ridership,
- Number of charter buses/boats and passengers,
- Number of private boats moored and anchored, and
- Number of parking violations in the surrounding neighborhoods.

In addition to the individual game data collection efforts, a vehicle occupancy survey was conducted of all vehicles entering campus during the Oregon State game on October 31, 1987. The ACOs observed for that game were assumed to be representative of all games and therefore were used to estimate the ACO for all seven games. A survey of all park-and-ride system users was also conducted at the last game of the season (*4*).

Table 5 compares the 1987 football season average mode split with the 1984 preexpansion mode split. In 1984, 27,680 people, or 45.8 percent of all game attendees, parked on

TABLE 5 AVERAGE MODE SPLIT, 1987 AND 1984 HUSKY FOOTBALL GAMES

Mode	1984 No. of Persons	1984 Percent by Mode	1987 No. of Persons	1987 Percent by Mode	Change in Mode Split
AUTOMOBILE MODE					
On Campus Parking	27,680	45.8	26,269	36.8	-9.0
Off Campus Parking					
Safeco Garage	(a)	(a)	1,088	1.5	1.5
U-District (b)	2,000	3.3	2,300	3.3	-0.0
Neighborhoods (b)	16,340	27.2	17,300	24.2	-3.0
Subtotal	18,340	30.5	20,688	29.0	-1.5
Total Auto Mode	46,020	76.3	46,957	65.8	-10.5
NONAUTO MODE					
Transit					
Regular Service	500	0.8	1,428	2.0	1.2
Husky Special	2,050	3.4	1,818	2.5	-0.9
Park & Ride	(a)	(a)	7,131	10.0	10.0
Charter Bus	3,280	5.4	2,878	4.0	-1.4
Charter Boat	1,050	1.8	1,275	1.8	0.0
Private Boat	1,440	2.4	1,811	2.5	0.1
Drop Off/Walk/ Motorcycle/Bike (b)	5,960	9.9	8,097	11.4	1.5
Total Nonauto Mode	14,280	23.7	24,438	34.2	10.5
TOTAL	60,300	100.0	71,395	100.0	

(a) Not in use during the 1984 football season.

(b) Estimated number of persons and vehicles.

campus. During the 1987 season the average number of persons parking on campus was 26,269, which represented 36.8 percent of all game attendees. This was a decrease of 9.0 percent compared with 1984 figures. It was estimated that 700 vehicles, or 1,400 people, would park in the Safeco parking facilities. The season average was 1,088 persons arriving in 512 vehicles, for an ACO of 2.1. The Safeco shuttle average pregame ridership was 830, or 76.3 percent of the 1,088 people who parked in the facilities. Postgame ridership averaged 627 riders, or 58 percent of the total parkers.

The persons who parked in the neighborhoods and U-District were estimated at 19,600, or 27.2 percent of the total game attendees. The Seattle Police Department issued an average of 130 nonimpound citations and 112 requests for vehicle impound citations in the residential neighborhoods surrounding the stadium during the 1987 season. In 1986 (preexpansion) the average numbers of citations were 115 and 103, respectively. On this basis it does not appear that the stadium expansion had a major negative impact on the surrounding residential neighborhoods.

In all, only 65.8 percent of the game attendees came by automobile during the 1987 season, a 10.5 percent decrease from the 1984 season average of 76.3 percent.

The preseason estimates were for 29 percent of the game attendees to arrive at the stadium in a nonautomobile mode. The actual 1987 season average was 34.2 percent, or approximately 5 percent fewer automobile users than estimated. The greater percentage of nonautomobile users can be attributed to the tremendous increase in transit ridership over the preseason estimate. The park-and-ride system averaged 7,130 riders per game, which was an 18.8 percent increase over the 6,000 riders estimated in the preseason. Regular transit routes also experienced a much higher ridership than expected, with 1,428 riders, or 2 percent of the total game attendees. In 1984 only 2,550 people, 4.2 percent of game attendees, took transit to the game compared with 14.5 percent in 1987, an increase of more than 10 percent.

An on-board survey of park-and-ride lot users at the last home football game revealed that 78 percent of the users rated the service excellent, with another 20.3 percent rating it good,

for an overall approval rating of 98.3 percent. The approval rating far exceeded the expectations of both the university and Metro and indicates that the system performed extremely well during its first full year of operation.

Revenue and Expenses in 1987

The Husky Stadium TMP is paid for through parking revenues collected at each game. The University of Washington Transportation Office, of which the Parking Division is a part, is a self-supporting operation both during the regular school year and for special events such as football. Therefore, the only source of income for the program is the revenue collected from the parking of autos, charter buses, and boats. Table 6 shows the estimated revenue and expenses associated with the TMP. It was estimated that revenues and expenses would total $353,000 during the 1987 season. Actual revenue was $331,000, with expenses totaling $336,000, for a net loss of $5,000. The loss had to be made up from other Parking Division revenue, such as that from the basketball parking program or other special event parking.

SUMMARY AND CONCLUSIONS

A summary of the paper is now provided.

1. The parking facilities associated with the University of Washington's Husky Stadium are not specifically designed to handle the impacts associated with special event traffic and parking.
2. Before the 1987 football season Husky Stadium had a seating capacity of 58,500. In 1984 the university sought approval from the Seattle City Council to increase the seating capacity by 13,700 to a total of 72,200 seats.
3. The main transportation mode for football game attendees in 1984 (preexpansion) was the private automobile, with more than 76 percent of the people arriving by that mode.
4. Of the 20,500 vehicles used to access a football game in 1984, more than 55 percent parked on campus and the remainder parked off campus in the U-District or on adjacent neighborhood streets.
5. In 1984, 10 percent of the game attendees either walked, rode their motorcycle or bicycle, or were dropped off at the stadium. The remaining 14 percent used public transit (4.2 percent), charter bus or boat (7.1 percent), or private boat (2.4 percent).
6. The goal of the TMP for the expanded stadium was to accommodate a sellout crowd of 72,200 with less reliance on parking in the residential areas near campus than before the stadium was expanded. To achieve the goal, a free transit scrip program was developed, a system of park-and-ride routes introduced, reduced carpool parking rates offered, on-campus parking increased, and marketing and monitoring programs developed.
7. For the 1987 season (after stadium expansion) the university's Transportation Office developed and produced free transit scrip along with two brochures explaining the transportation alternatives available to football game attendees.

TABLE 6 ESTIMATED AND ACTUAL REVENUES AND EXPENSES, 1987

	Pre-Season Estimate	Actual
REVENUES		
Parking	$ 325,000	$ 304,000
Charter Boats and Private Boats	20,000	21,000
Charter Buses	8,000	6,000
Total	$ 353,000	$ 331,000
EXPENSES		
Public Transit Recharges		
- Park and Ride Service	$ 168,000	$ 175,000
- Husky Special & Regular Service	20,000	14,000
Parking Operation & Administration	130,000	120,000
Off-Campus Leased Parking		
- Lease of Facilities	10,000	6,000
- Shuttle Bus Service	10,000	7,000
Publicity, Marketing, Printing & Mailing	15,000	14,000
Total	$ 353,000	$ 336,000
Over (Under)	-	$ (5,000)

8. The park-and-ride system put into operation in 1987 exceeded preseason ridership projections, averaging more than 7,100 riders per game.

9. The total cost of the program during the 1987 season was $336,000. The revenues for the season were $331,000, for a net loss of $5,000, or 1.5 percent of the total expenses.

In conclusion, the Husky Stadium TMP has been a tremendous success, far exceeding expectations for its first full year of operation. The primary goal of the plan, which was to accommodate a sellout crowd of 72,200 with less reliance on parking in the residential areas near campus, has largely been accomplished. The achievement of this goal is primarily attributed to the free transit scrip program that led to greater use of public transit than was anticipated.

REFERENCES

1. E. M. Whitlock. *Parking for Institutions and Special Events*. Eno Foundation for Transportation, Inc., Westport, Conn., 1982.
2. *Final Supplemental Environmental Impact Statement, University of Washington Stadium Expansion*. Campus Planning Office, University of Washington, Seattle, Jan. 1986.
3. *Stadium Expansion Parking Plan and Transportation Management Program*. Transportation Office, University of Washington, Seattle, Feb. 1986.
4. *Stadium Expansion Parking Plan and Transportation Management Program, 1987 Data Collection*. Transportation Office, University of Washington, Seattle, March 1988.

Publication of this paper sponsored by Committee on Parking and Terminals.