Transit Portion

TRANSPORTATION SYSTEMS MANAGEMENT PLAN

for the Iowa City / Coralville Urban Area and Johnson County FY 1982

Johnson County Council of Governments

June 1982

FY 1982

TRANSPORTATION SYSTEMS MANAGEMENT PLAN

FOR THE

IOWA CITY/CORALVILLE URBAN AREA AND JOHNSON COUNTY

TRANSIT PORTION

prepared by the

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I RECENT DEVELOPMENTS

I. Recent Developments

Iowa City Transit Service Improvements

In August 1979 Iowa City Transit realigned its route structure to improve access to public transportation. Numerous changes, in the form of route additions, route deletions, and the splitting of single routes into two separate routes, had the result of making nearly every neighborhood in the City accessible to public transit. Iowa City Transit currently operates 14 buses during day service and 7 buses during night service.

Iowa City Transit has continued to provide supplementary peak-hour service on certain high ridership routes during the months when University of Iowa classes are in session. In addition, they have continued evening service which was begun in November 1977.

An increase in the base fare from 25¢ to 35¢ on April 1, 1980 was accompanied by two other fare related changes. The price of a monthly pass was increased from $8 to $12. A policy of requiring exact fare was also established at that time. In September 1980 Iowa City Transit and Coralville Transit began a reciprocal agreement to accept each others monthly bus passes.

Service improvements have been complemented by an ongoing marketing program designed to inform the public of the availability and benefits of transit service. Special effort has been concentrated on projects that

will increase off-peak ridership, particularly for shopping trips. Iowa City Transit's marketing program has included newspaper and radio advertising, press releases, posters, on-bus advertising, distribution of maps, schedules, and complementary passes, the Bus and Shop program, and a downtown information table during the first week of University of Iowa classes.

A chronological listing of recent service changes for Iowa City Transit is provided in Table 1, which follows.

TABLE 1
IOWA CITY TRANSIT
CHRONOLOGY OF SERVICE CHANGES 1978-1981

DATE	SERVICE CHANGE
September 1978	Peak hour service begun with two buses on Hawkeye Express-East Side Shuttle route and one bus on Lakeside Express-West Side Shuttle route.
January 1979	Wardway route extended to Baculis Trailer Park. Extra peak hour service on Rochester-Mall route begun.
March 1979	Peak hour service on Rochester-Mall route ended.
May 1979	Hawkeye Express-East Side Shuttle ended for summer. Lakeside Express-West Side Express Shuttle ended.
August 1979	Goodwill route discontinued. West Benton route split into two routes called Mark IV and Oakcrest. Sycamore and Seventh Avenue routes added. North Dubuque route cut to hourly headways. All other routes adjusted slightly. These changes result in the running of 14 buses during day service and seven buses during night service. Extra peak hour service begun on Hawkeye Express-East Side Shuttle and Hawkeye-North Dubuque routes.
April 1980	Base fare increased from 25¢ to 35¢ Monthly passes increased from $8 to $12 Exact fare required.
May 1980	Extra peak hour service ended.
September 1980	Iowa City Transit and Coralville Transit begin a reciprocity agreement to accept each others monthly passes.
August 1980	Extra peak hour service begun on Hawkeye Express-East Side Shuttle and Hawkeye-North Dubuque routes.
January 1981	Began using Downtown Transit Interchange.
May 1981	Extra peak hour service ended.
June 1981	Extra service to Hawkeye Apartments during summer school.

Iowa City Transit - Capital Improvements

In December 1978 Iowa City Transit purchased two used coaches (1963 and 1967 GMC TDH 4519) to help alleviate peak-hour capacity problems. These two coaches are the only rolling stock acquisitions that have been made since 1978. In the summer of 1982 Iowa City Transit will receive three additional new full-sized coaches. Two of these buses are funded through Section 3, and one through Section 18 of the Urban Mass Transportation Act of 1964, as amended. These grants will pick up 80% of the approximate $150,000 (apiece) cost of these new buses, with the remaining 20% to be made up through State and local sources. One bus is intended for replacement and two are fleet additions.

In 1978 private donations solicited by the American Association of Retired Persons paid for the purchase of two bus stop shelters in Iowa City. In December of 1979 $19,176 of Community Development Block Grant funds were used to purchase twelve more bus stop shelters. In 1980 the Iowa City Jaycees bought one shelter. UMTA Section 18 funds have been used to obtain 10 more shelters for placement along high ridership routes, and these are expected to be erected in Spring of 1982.

Iowa City Transit is also currently involved in obtaining a two-way radio system (including a base unit and 24 mobile units) and replacing their coin sorter.

An inventory of Iowa City Transit's rolling stock is shown in Table 2, following.

TABLE 2
IOWA CITY TRANSIT
INVENTORY OF ROLLING STOCK

NUMBER	YEAR	PURCHASE PRICE (APIECE)	MAKE	MODEL	CAPACITY
1	1963	$15,000 (used)	GMC	TDH 4519 (A)	45 seated, 35 standing
1	1967	$15,000 (used)	GMC	TDH 4519	45 seated, 35 standing
12	1971	$34,028 (new)	GMC	T6H 4521 (A)	45 seated, 35 standing
2	1974	$43,727 (new)	GMC	T8H 5307 (A)	53 seated, 40 standing
3	1977	$67,598 (new)	Flxible	45096	41 seated, 39 standing

Total buses = 19, plus (1) 1971 AMC sedan and (1) 1975 Chevrolet sedan for general use.

Coralville Transit System - Service Improvements

In November 1978 Coralville Transit extended the free ride program for elderly and handicapped people to evenings and all day Saturday. In May 1980 this was further extended to all day during the week. In October 1980 Coralville Transit began supplementary peak-hour service on the Tenth Street route. The base fare of 35¢ was increased to 50¢ on April 1, 1981. Concurrent with this fare increase was an increase in the price of the monthly bus pass from $12 to $16.

In September 1980 Coralville Transit and Iowa City Transit began a reciprocal agreement to accept each others monthly bus passes.

Coralville Transit has a limited advertising program for its system, consisting primarily of fare schedules and route maps which are available on board the buses and at a few locations in the Iowa City metropolitan area. A radio advertising program was discontinued following Fiscal Year 1979.

A chronology of recent service changes is shown in Table 3, which follows.

TABLE 3
CORALVILLE TRANSIT SYSTEM
CHRONOLOGY OF SERVICE CHANGES 1978-1981

DATE	SERVICE CHANGE
November 1978	Elderly and handicapped free ride extended to evenings and all day Saturday.
May 1980	Elderly and handicapped free ride extended to all day weekdays.
September 1980	Coralville Transit and Iowa City Transit begin a reciprocity agreement to accept each others monthly passes.
October 1980	Shortened Saturday and Evening service. Deleted 17th Avenue-19th Avenue loop.
	Began A.M. tripper service on 10th Street route.
January 1981	Began using Downtown Transit Interchange.
April 1981	Base fare increased from 35¢ to 50¢.
	Monthly passes increased from $12 to $16.
	Punch passes increased from $7 to $10 and no longer sold on buses.
May 1981	Tripper service ended.
November 1981	Began AM tripper service on 10th Street route.

Coralville Transit System - Capital Improvements

In January 1980 Coralville Transit purchased two 1965 GMC TDH 4519 coaches. These buses replaced two 1949 GMC coaches. During the summer of 1982 Coralville Transit will take delivery of two new full-sized coaches. 80% of the funding for these coaches will come from Section 18 of the Urban Mass Transportation Act of 1964, as amended, with the remaining 20% to be made up from State and local sources. These buses will be additions to the present fleet. Coralville Transit is also currently involved in acquiring three mobile radio units for its buses.

A current inventory of Coralville Transit rolling stock follows in Table 4.

TABLE 4
CORALVILLE TRANSIT
INVENTORY OF ROLLING STOCK

NUMBER	YEAR	PURCHASE PRICE (APIECE)	MAKE	MODEL	CAPACITY
2	1965	$18,000 (used)	GMC	TDH 4519	45 seated, 35 standing
5	1977	$65,000 (new)	Flxible	45096	41 seated, 39 standing

Total buses = 7, plus one 1977 Chevrolet 4WD pickup truck for general use.

University of Iowa CAMBUS - Service Improvements

CAMBUS has implemented several route and service changes since 1978. In the fall of 1979 several service reductions were implemented, primarily due to the shortage of work-study bus drivers. The Interdorm Express route has consistently been subject to fluctuations in service because of the driver situation.

The Bionic Bus operation which CAMBUS began operating in June of 1977 has also experienced some service changes. In the fall of 1979 Bionic Bus service began ending at 10:30 P.M., and in August of 1980 weekend service was cut back considerably. Limited service has been started during University interim periods, however, and a second Bionic Bus was put into service in October 1980. Total annual vehicle miles of Bionic Bus service increased from 20,855 in FY'78 to 26,274 in FY'80.

Three new routes have been started since 1978. The East Side Loop was added to the evening Hawkeye route, and provides service in the area of the east side University Greek houses. The Shuttle route was added to augment service in high ridership areas along the University main campus. In the fall of 1980 CAMBUS began providing service to the Mayflower Apartments. This service, which was begun as an extension of the Interdorm route, was in response to the University of Iowa leasing apartments in the Mayflower for overflow dormitory residents.

A summary of recent CAMBUS service changes is found in Table 5.

TABLE 5
UNIVERSITY OF IOWA CAMBUS
CHRONOLOGY OF SERVICE CHANGES 1978-1981

DATE	SERVICE CHANGE
February 1978	Oakdale service is extended to 10:15 p.m. Oakdale and Pentacrest Express are combined after 6:30 p.m.
September 1978	East Side Loop incorporated into Hawkeye route. Operated after 10:30 p.m.
Spring 1979	Only one Interdorm bus operating due to shortage of drivers.
Fall 1979	Went from four buses each on Red and Blue routes to three each, from two buses on Hawkeye route to one, and Interdorm was extended to 30 minute loops with two buses starting in late Fall. Bionic Bus service began ending at 10:30 p.m. Shuttle route added.
Summer 1980	Construction in Iowa City caused many route changes. This situation continued into the fall and winter.
August 1980	Bionic Bus service cut back on weekends from fourteen hours on Saturday and eight hours on Sunday, to five hours on Saturday and three hours on Sunday. Bionic Bus service begun during interim periods.
Fall 1980	Only one Interdorm bus was in service until November 3.
October 1980	Second Bionic Bus put into service from 8-12 a.m. and 3-6 p.m.
November 1980	Mayflower route begun as an extension of Interdorm. Headways every 30 minutes. Mayflower shuttle service begun.
January 1981	Began using Downtown Transit Interchange.
May 1981	Start up time changed from 6:00 a.m. to 6:30 a.m. (approximately); shut down time changed from 12:30 a.m. to midnight. Red and Blue route interim service cut by 50% (one bus on each route instead of two).
August 1981	Changes in the Night Oakdale route: service until midnight instead of 10 p.m., half hour instead of hour headways, interchange at CAMBUS trailer instead of North Hospital.

University of Iowa CAMBUS - Capital Improvements

The major capital item acquired by CAMBUS since 1978 is a 1980 GMC/Thomas small bus. This small bus is equipped to handle physically handicapped persons and was purchased as an addition to the Bionic Bus fleet. Funding for this small bus was from the University of Iowa general fund. An additional lift-equipped handicapped service bus is expected to be received sometime during 1982. The funding for this bus (80%) was received through Section 3 of the Urban Mass Transportation Act of 1964, as amended, and will increase the Bionic Bus fleet size to three coaches.

In conjunction with this same Section 3 grant, CAMBUS will receive two new full-sized buses. These coaches will replace two 1963 GMC coaches. CAMBUS is also awaiting delivery of a mobile radio for one of its buses.

A complete roster of CAMBUS rolling stock can be found in Table 6.

TABLE 6
UNIVERSITY OF IOWA CAMBUS
INVENTORY OF ROLLING STOCK

NUMBER	YEAR	PURCHASE PRICE (APIECE)	MAKE	MODEL	CAPACITY
2	1963	$26,000 (used)	GMC	5308	53 seated, 25 standing
12	1977	$65,000 (new)	Flxible	45096	41 seated, 39 standing
1	1976	$23,600 (used)	Ford/Collins	Omnibus	6 wheelchairs, 6 seated
1	1980	$26,000 (new)	GMC/Thomas	(Small Bus)	6 wheelchairs,4 seated

Total buses = 14 transit coaches and 2 handicapped buses.

Johnson County SEATS - Service Improvements

In 1976 SEATS operated one van, providing service from 8:30 A.M. until 4:00 P.M. Monday through Friday for the elderly and handicapped in rural Johnson County. In September 1977 service was initiated for Iowa City, Coralville, and University Heights. Current urban area hours of service are 8:00 A.M. to 5:00 P.M. Monday through Friday and 8:00 A.M. to 2:00 P.M. Saturday and Sunday. Current service levels have resulted in an individual over 60 years of age or handicapped being able to use SEATS regardless of their location in Johnson County.

In May of 1980 the SEATS operation moved from the Close Mansion at 538 South Gilbert Street to the Elderly Services Agency building at 1105 Gilbert Court. In August of 1981 SEATS moved into the new Downtown Senior Center at 28 S. Linn Street.

In August 1978 SEATS began providing transportation for persons affiliated with Goodwill Industries. Recent service additions include service on Tuesday, Wednesday, Thursday and Friday for Headstart clients, and service to the communities of Solon and Lone Tree.

Recent service improvements have been augmented by a program to notify the public of all schedule or service changes. This is accomplished through press releases and contact with the various elderly and handicapped organizations.

Table 7, following, summarizes recent SEATS service changes.

TABLE 7
JOHNSON COUNTY SEATS
CHRONOLOGY OF SERVICE CHANGES 1978-1981

DATE	SERVICE CHANGE
July 1978	Urban service contracts renewed
August 1978	Service initiated for clients of Goodwill Industries, Inc. of Iowa City.
February 1979	Urban area hours of service were changed to 8 AM-6 PM Monday-Thursday and 8 AM-4 PM Friday-Sunday. Formerly service ended at 9:30 PM on Monday, Thursday and Friday and 3:00 PM on Saturdays and Sundays.
May 1980	SEATS moved from the Close Mansion to the Elderly Services Agency building at 1105 Gilbert Court.
July 1980	Urban area hours of service were changed to 8 AM to 5 PM Monday-Friday, and 8 AM to 2 PM Saturday-Sunday.
September 1980	Service initiated for Headstart clients on Tuesday, Wednesday Thursday and Friday.
	Service initiated to communities of Solon and Lone Tree.

Johnson County SEATS - Capital Improvements

The major capital purchase by Johnson County SEATS since 1978 are five new 1981 Ford Econoline vans. These 15-passenger vans cost $11,200 apiece, and were funded (80%) through a Section 18 grant of the Urban Mass Transportation Act of 1964, as amended. The remaining 20% will be made up locally. A new Dodge van was provided by Iowa City in April 1978, and Johnson County purchased a used 1973 Dodge van in June 1978. Both of these vehicles currently have well over 80,000 miles on them. In addition, SEATS currently leases a 1979 Ford van from the Hawkeye Area Community Action Program (HACAP) for use in servicing HACAP clients.

In connection with the same Section 18 grant which is funding the five new vans, SEATS is expecting to receive a radio system some time during summer 1981. This radio system will consist of a base unit and eight mobile units for use in the vans. SEATS also will receive two new wheelchair lifts, which will be outfitted on two of the new 1981 vans.

A complete list of current SEATS rolling stock is shown in Table 8.

TABLE 8
JOHNSON COUNTY SEATS
INVENTORY OF ROLLING STOCK

NUMBER	YEAR	MAKE	MODEL	SEATING CAPACITY
1	1973	Dodge	B200	7
1	1974	Dodge	B300	14
1	1977	Dodge	B200*	7
1	1978	Dodge	B300	12
1	1979	Ford	Econoline**	15
5	1981	Ford	Econoline*** Superwagon	15

Total: 10 Vans

*Equipped with a lift for loading wheelchair passengers.

**Leased from HACAP.

***Two are equipped with lifts for loading wheelchair passengers.

II CURRENT SERVICE

II. Current Service

Iowa City Transit

Iowa City Transit provides service on 14 regular routes and two supplementary peak-hour routes. Refer to Figures 1 and 2 for a map of present routes. All regular routes except for the North Dubuque/Wardway route pair operate every 30 minutes from 6:30 A.M. to 6:30 P.M., and hourly thereafter until 10:00 P.M. The North Dubuque and Wardway routes operate on hourly headways. Service is provided daily, except for Sundays and holidays.

Iowa City Transit realigned its route structure in August 1979, with the result that there are very few neighborhoods within the city that do not have adequate access to public transportation. The major changes implemented in 1979 were splitting the West Benton route into two separate routes, adding the Sycamore and Seventh Avenue routes, cutting the North Dubuque route to hourly headways, and eliminating the Goodwill route (this service was picked up by Johnson County SEATS and special trips off of the Lakeside route). Additional fine tuning was done throughout the route network.

Iowa City Transit operates three peak-hour routes during the University of Iowa academic year. The Hawkeye Express, Lakeside Express, and East Side Special routes operate between 7:00-9:00 A.M. and 4:00-6:00 P.M.

In conjunction with the new Downtown Transit Interchange, daytime bus arrivals and departures from the CBD have been organized into a coordinated format. The North Dodge, Sycamore, Oakcrest, and Towncrest routes arrive and depart the CBD on the hour and half hour. The Hawkeye, Seventh Avenue, Manville Heights, and Court Hill routes arrive and depart the CBD quarter to and quarter past the hour. The Lakeside and Mark IV routes arrive and depart downtown at regular half-hour intervals, and the Wardway and North Dubuque routes at regular hourly intervals. This system of arrivals and departures is designed to facilitate ease in transferring between buses at the new Downtown Transit Interchange.

During peak hours, Iowa City Transit operates 16 buses. 14 buses are run weekdays off-peak and all day Saturday. During evening hours seven buses are operated.

Iowa City Transit raised their base fare from 25¢ to 35¢ on April 1, 1980. It is possible that sometime during 1981 or 1982 the base fare will be increased to 50¢. This increase in fare is largely a result of increased operating costs coupled with a decrease in government operating subsidy. Simultaneous with this increase in the base fare will be an increase in the price of the monthly pass, probably from $12 to $16. School field trip riders pay no fare, with the Iowa City School Board reimbursing Iowa City Transit 25¢ per ride. A purchase of $5 or more from any merchant participating in the Bus and Shop program entitles the purchaser to one free bus ride any time of day. The merchant is then billed back for the full fare through the Chamber of Commerce. Elderly citizens can ride free during off-peak hours.

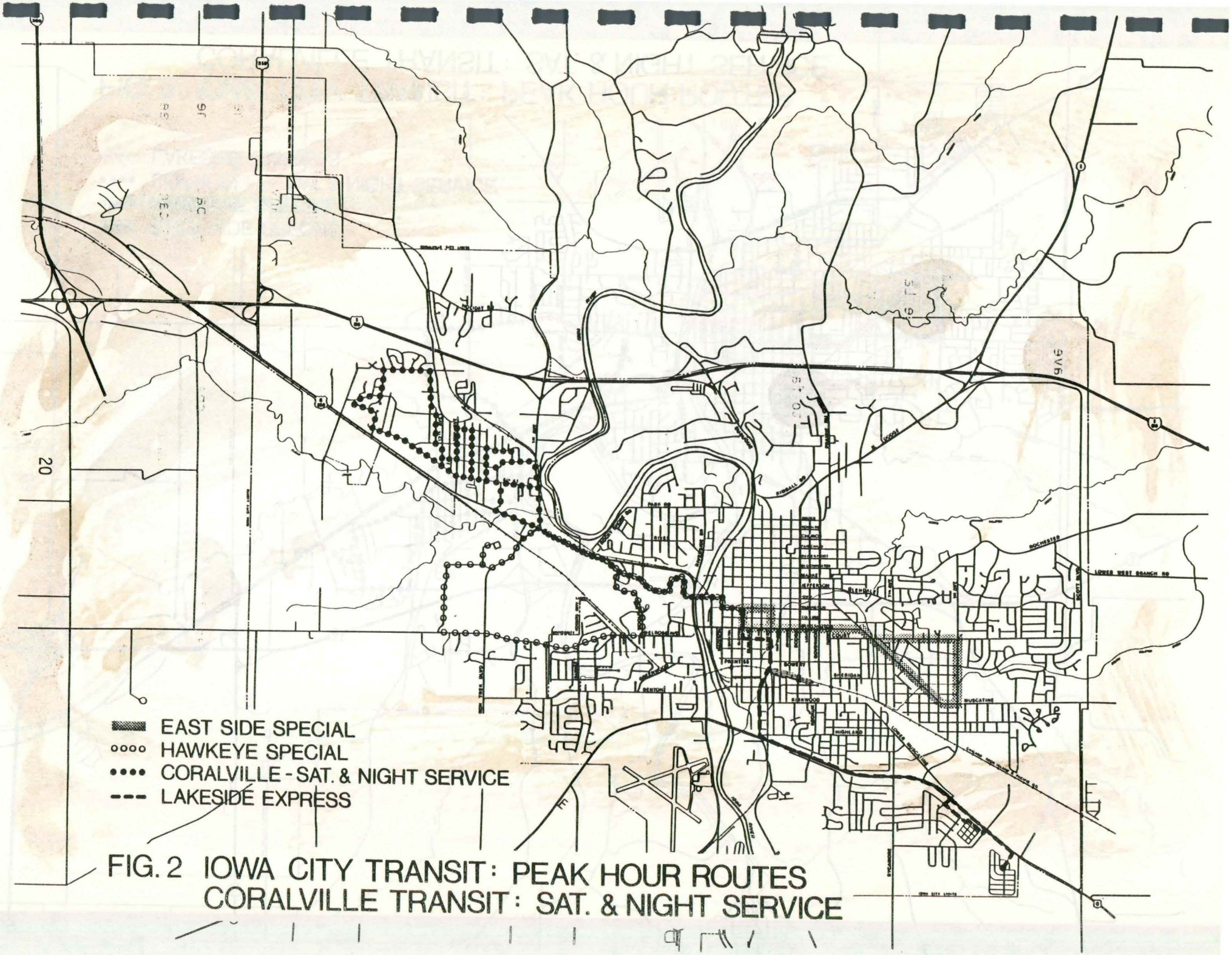


FIG. 2 IOWA CITY TRANSIT: PEAK HOUR ROUTES
CORALVILLE TRANSIT: SAT. & NIGHT SERVICE

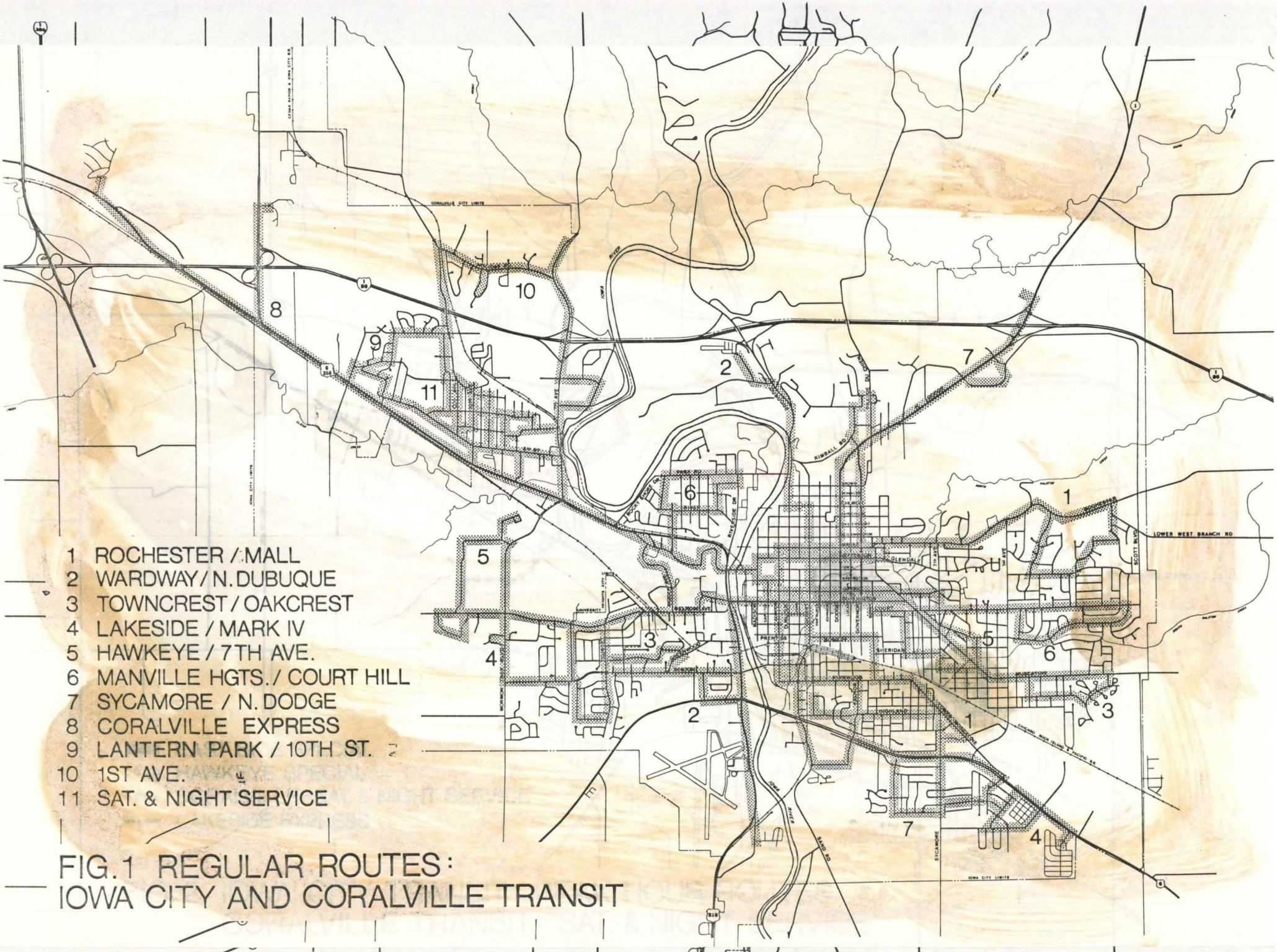


FIG. 1 REGULAR ROUTES:
IOWA CITY AND CORALVILLE TRANSIT

Coralville Transit

Coralville Transit operates four routes on weekdays between 6:00 A.M. and 6:30 P.M., one route on Saturday from 6:15 A.M. to 6:00 P.M., and one route Monday through Saturday evenings until midnight. Refer to Figures 1 and 2 for a map of Coralville Transit routes. The Lantern Park and Tenth Street routes operate with 15 minute headways from 6:00 A.M.-9:20 A.M. and 3:20 P.M.-5:30 P.M., and 30 minute headways between 9:20 A.M.-3:20 P.M. The Express route maintains one hour headways from 6:30 A.M. to 6:30 P.M. except for the 10:30 A.M.-2:30 P.M. period when headways are two hours. Service on the First Avenue route begins at 6:20 A.M. and continues until 6:30 P.M. Headways are one hour except during the mid-day period from 9:30 A.M.-3:30 P.M. when headways are two hours. The Saturday and evening routes operate with one hour headways.

Coralville Transit operates six buses during peak weekday hours, three buses off-peak weekdays, and one bus evenings and Saturdays. Only five buses are operated peak weekday hours during University of Iowa summer and interim periods.

Coralville Transit increased their base fare from 35¢ to 50¢ on April 1, 1981. The price of the monthly pass was also increased, from $12 to $16. A punch pass good for 20 rides can be purchased for $10. During Saturdays and evenings persons under 18 are eligible for the 10¢ youth fare. Elderly citizens can ride free any time.

University of Iowa CAMBUS

CAMBUS provides service on nine routes, Monday through Friday, except during University holidays. CAMBUS is a free-fare service, and although primarily intended for use by University of Iowa students and personnel, it can also be used by the general public free of charge. Buses run between 6:00 A.M.-12:30 A.M. Refer to Figures 3 and 4 for a map of CAMBUS routes. Headways on the Red and Blue routes are 10 minutes between 8:00 A.M.-5:45 P.M. and 15 minutes during the remaining hours of service. The Interdorm and Shuttle routes augment service on high ridership portions of the Red and Blue routes during daytime hours. The Interdorm route alternates 10 and 20 minute headways between buses, and the Shuttle operates with 60 minutes headways. The Pentacrest route operates with 15 minute headways during the day until 6:20 P.M. The Oakdale route runs on 30 minute headways until 6:10 P.M. At 5:45 P.M. the Oakdale route is combined with the Pentacrest route, and 45 minute headways are kept until 10:10 P.M. when service ends. Because of low ridership, the standard-sized coach used on the Oakdale route in the day is taken out of service at 6:10 P.M. and a 15-passenger van used on the Night Oakdale route. Additional night service is provided on the Hawkeye route, which is combined with the East Side Loop after 10:36 P.M. The Hawkeye route services married student housing on the western edge of Iowa City, while the East Side Loop provides service to the sororities and fraternities on the east side of Iowa City after Iowa City Transit service stops at 10:30 P.M. Service to the Mayflower Apartments has been added as an extension to the Interdorm route. This was done because the University has leased space in the Mayflower to house several hundred overflow dormitory residents.

The "Bionic Bus" system provides demand-responsive service throughout the year for handicapped students of the University of Iowa. Service hours are 7:00 A.M.-10:30 P.M. on weekdays, Saturday noon-5:00 P.M., and Sunday 1:00 P.M.-4:00 P.M. Service has recently been added during University interim periods, from 7:00 A.M. to 10:30 A.M. and 3:30 P.M. to 6:30 P.M.

CAMBUS runs 11 buses during daytime hours, and five buses plus the Oakdale van during evening service.

During the regular academic year when classes are not in session, and during the summer session, service is reduced. This is done by increasing headways or eliminating a route altogether. The only exceptions are the Oakdale and Pentacrest routes, which maintain the same schedules all year-round.

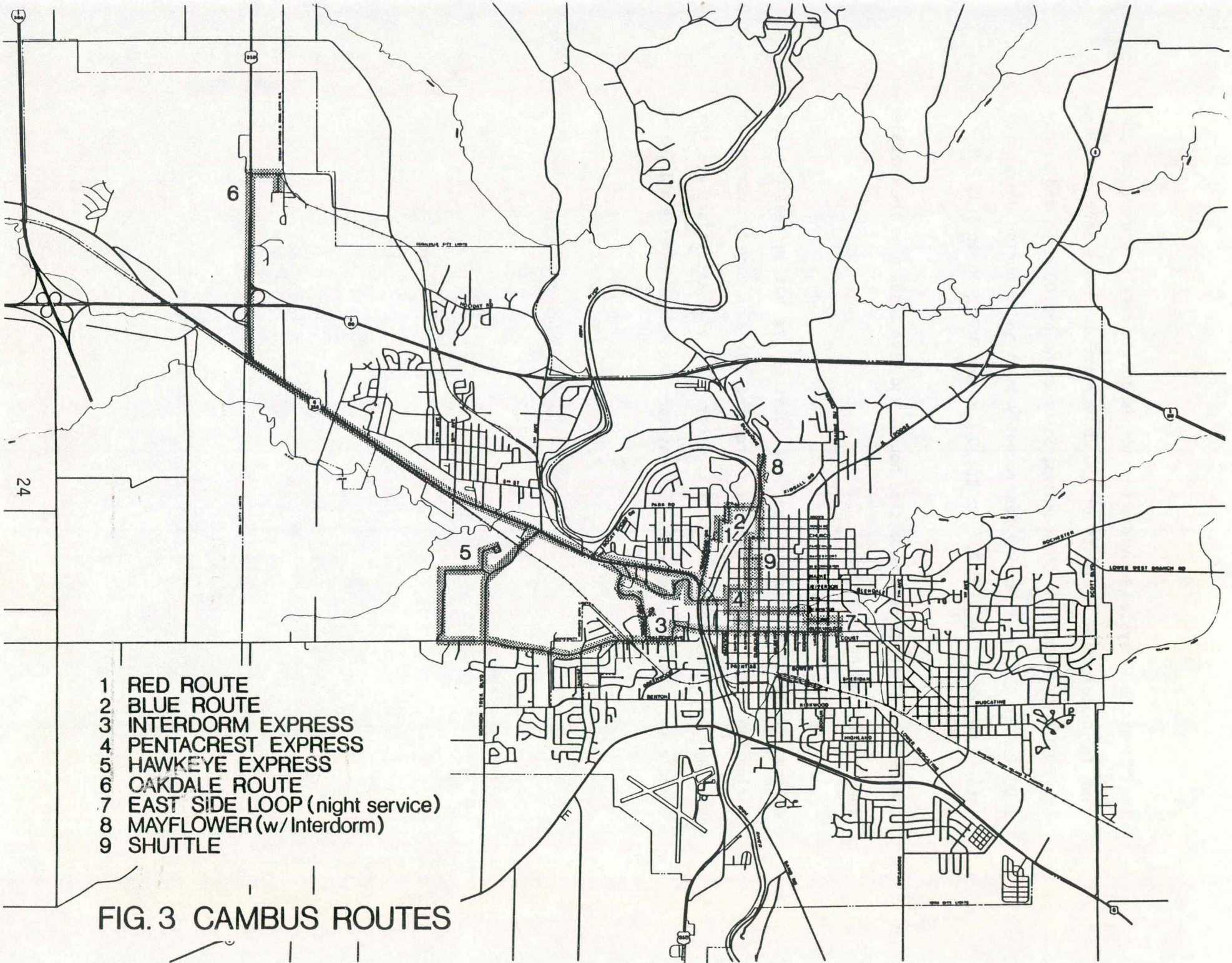
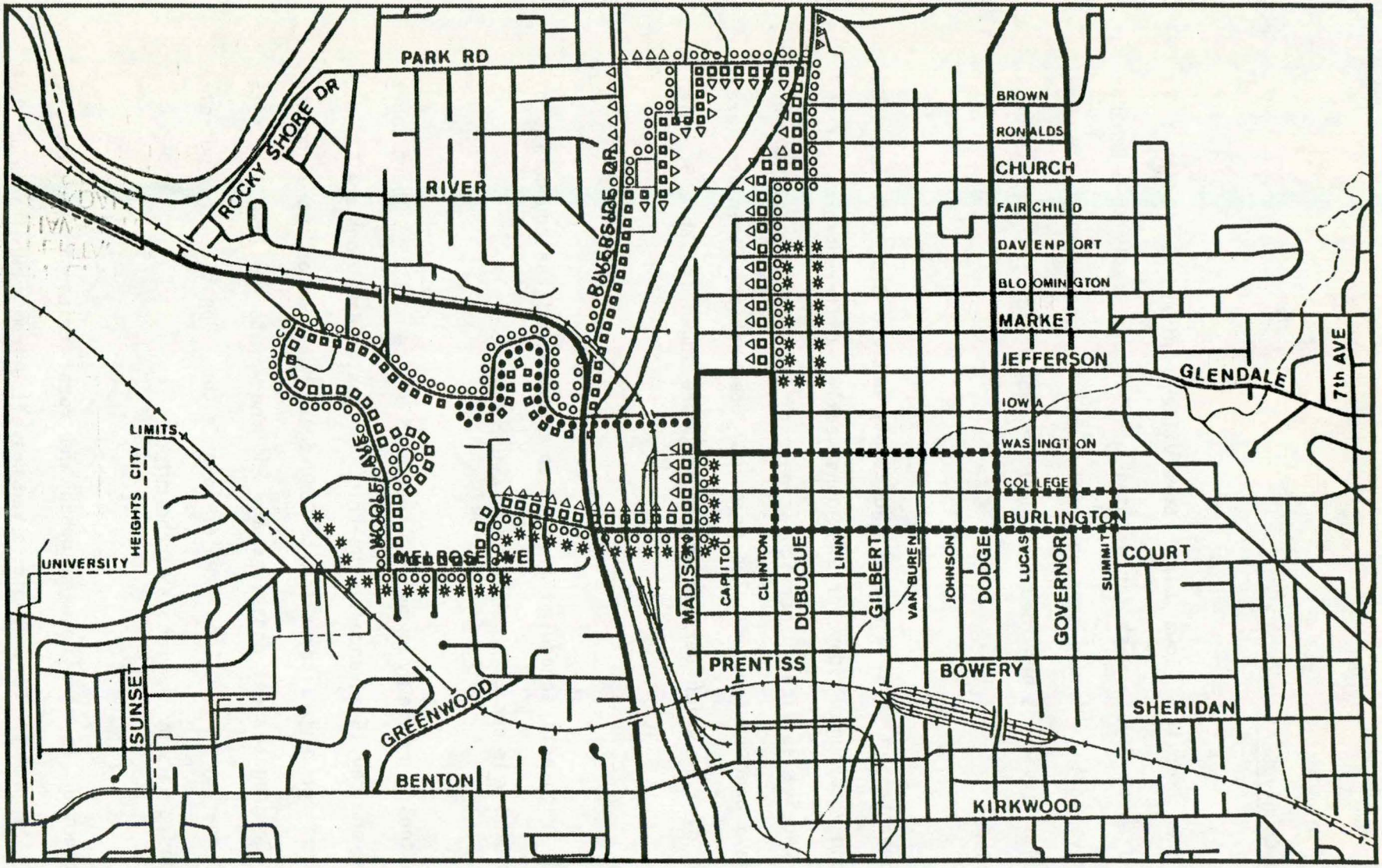


FIG. 3 CAMBUS ROUTES



- RED ROUTE
- BLUE ROUTE
- SHUTTLE
- PENTACREST EXPRESS
- INTERDORM EXPRESS
- MAYFLOWER(w/Interdorm)
- EAST SIDE LOOP(night service)

FIG. 4 CAMBUS CENTRAL CAMPUS ROUTES

Johnson County SEATS

Urban area service (Iowa City, Coralville, University Heights) is provided seven days a week for a total of 57 hours weekly on a demand-responsive basis. Monday through Friday vans run between 8:00 A.M. and 5:00 P.M. Service is provided from 8:00 A.M. until 2:00 P.M. on Saturdays and Sundays.

SEATS operates in rural areas of the county between 8:30 A.M. and 4:00 P.M. Monday through Friday, or 37½ hours weekly. Different areas of the county receive service on particular days of the week. Three separate areas have been designated. The principal communities within each area and the days on which service is provided are shown in Table 9, which follows.

The only regularly scheduled trip which goes beyond the boundaries of Johnson County is one trip per month to Cedar Rapids.

Reservations are made by phone with the SEATS office at 1105 Gilbert Court at least one day in advance of the trip. Suggested donations are $1 each way except for people traveling to Congregate Meals or on out-of-county trips. Congregate Meal donations are 25¢ one-way to the Iowa City site and 15¢ one-way to the Lone Tree or Solon sites. Donations for out-of-county trips vary by the length of the trip.

No distinction is made between urban and rural trips for purposes of vehicle assignment. For example, a van traveling from a rural area of the

county to a destination in the Iowa City CBD may stop and pick up passengers in an outlying part of the urban area before proceeding to the final destination.

TABLE 9

JOHNSON COUNTY SEATS RURAL AREA SERVICE

AREA	COMMUNITIES	DAYS OF SERVICE
Northern Johnson County	Solon Shueyville Swisher North Liberty Morse Oasis	Monday, Tuesday, Thursday, 8:30 a.m. to 4:30 p.m.
Southeast/South-Central Johnson County	Lone Tree Sharon Center Hills River Junction	Monday, Wednesday, Friday 8:30 a.m. to 4:30 p.m.
West Central/South-West Johnson County	Oxford Tiffin Cosgrove Frytown Joetown	Tuesday, Thursday 8:30 a.m. to 4:30 p.m.

III REVENUE AND EXPENDITURES

III. Revenue and Expenditures

Revenue

Revenue to finance transit operations are provided from Federal, State, and local sources. Direct Federal assistance from the Urban Mass Transportation Administration to the local area has come primarily from two sources: Sections 3 and 18 of the Urban Mass Transportation Act of 1964, as amended. Both of these sources provide an 80% share of costs for new capital equipment and facilities. Additional funds are provided by Section 8 of the UMT Act, for planning and technical studies. Other Federal sources have been used to support local operations, although the amounts of these sources have tended to fluctuate from year to year. These include Federal Revenue Sharing, Work Study Funds, Comprehensive Employment and Training Act (CETA) monies, funds provided under Titles III and VII of the Older Americans Act, and Title XX of the Social Security Act.

State funds for transit have likewise been provided in both direct and indirect forms. Direct aid for both capital and operating expenditures is available to the local area from the Iowa Department of Transportation's Transit Assistance Program. Fiscal Year 1981 is the fifth year such funds have been provided. State Municipal Assistance is another State source which has been tapped in the recent past. State Liquor Store profits are a source of revenue which can be spent on transit at a locality's discretion.

Farebox receipts, property tax revenues, student fees, and parking fees continue to be the major locally generated revenue sources for public transportation.

Iowa City Transit Revenue

Revenue sources and their relative contributions in percentage terms for the FY'78-FY'81 period are shown in Table 10. The breakdown between local, State, and Federal contributions is summarized in Table 11.

Overall, Iowa City Transit revenue increased nearly 84% over the four year period from FY'78-FY'81. Fare revenue and revenue from the City government continue to be the primary sources of income for Iowa City Transit. Fare revenue has increased 77% since FY'78, and revenue from the City (in the form of property taxes and Federal Revenue Sharing) increased 91% during this time. State transit assistance, after steadily increasing between FY'78 and FY'80, decreased in FY'81. Advertising, miscellaneous sources, and the University Heights service contract continue to provide a small amount of revenue to Iowa City Transit.

The trend which is evident between FY'78 and FY'81 of increased local commitment to transit is expected to continue in the future. State and Federal sources of revenue have begun to decline or have dried up altogether. State transit assistance to Iowa City is expected to decline further in FY'82 due to a change in the State's allocation procedure, from a discretionary formula to a formula based on locally determined income, rider to expense ratio, and revenue miles to expense ratio. Between FY'80 and FY'81 revenue from local sources increased from 84% of total revenue to 89% of the total. It is expected that local sources of income will continue to provide the great majority of operating revenue for Iowa City Transit.

TABLE 10

IOWA CITY TRANSIT REVENUE

FY'78-FY'81

	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Fare Revenue	$ 340,681	42	$ 392,680	43	$ 476,829	43	$ 601,369	40
Local Funding*	366,825	45	367,591	40	419,640	38	699,128	47
Iowa DOT	99,604	12	149,516	16	177,932	16	155,070	10
Advertising	2,050	1	--		1,036	1	84	<1
Miscellaneous Income	1,416	1	6,950	1	5,022	1	18,765	1
University Heights Contract	--		--		11,820	1	13,719	1
TOTAL	$ 810,576	100	$ 916,737	100	$1,092,279	100	$1,488,135	100

*Includes General Fund revenue and Revenue Sharing

Iowa City Transit Expenditures

Iowa City Transit's expenditures and the percentage shares by category are shown in Table 12. A breakdown of operating and maintenance expenditures is shown in Table 13. Total expenditures increased by 94% over the four year period shown. The largest precentage increase was in the area of maintenance, which increased 106% between FY'78 and FY'81. Bus maintenance is not actually handled by Iowa City Transit, but "contracted out" to the Equipment Division of the City of Iowa City Public Works Department. Much of this increased cost was directly attributable to increases in the price of diesel fuel, which is included in the per mile charge by which the Equipment Division charges the Transit Division for maintenance work on transit vehicles. Driver Wages increased by almost 99% during this same period. These two categories, maintenance and driver wages, make up 94% of Iowa City Transit's FY'81 operating expenditures. In addition to inflationary increases, Iowa City Transit's operating expenditures are increasing because they are providing more service. Between FY'78 and FY'80, total annual bus miles increased from 609,400 to 750,000, an increase of 23%.

The percentage share of total expenditures for administration remained nearly the same between FY'78 and FY'81, declining slightly through the four year period. In actual figures, administrative costs increased 56% between FY'78 and FY'81.

Expenditures for capital items between FY'78 and FY'81 were relatively small when compared to the operating budget. Table 12 shows the amounts

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Expenditures for capital items between FY'78 and FY'81 were relatively small when compared to the operating budget. Table 12 shows the amounts

of money which were allocated by the City to the Transit Division Equipment Replacement Reserve. This money is used periodically to purchase transit vehicles. In FY'80 an additional $58,500 was allocated to purchase air ventilation equipment for the bus garage and bus stop signs.

TABLE 12

IOWA CITY TRANSIT EXPENDITURES

FY'78-FY'81

CATEGORY	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Administration	$ 43,450	6	$ 52,668	5	$ 63,715	5	$ 67,971	4
Operating/Maintenance	700,285	89	864,069	90	1,028,566	86	1,422,606	94
Capital	37,500	5	50,000	5	108,500	9	25,000	2
TOTAL	$781,235	100%	$966,737	100%	$1,200,781	100%	$1,515,577	100%

TABLE 13

IOWA CITY TRANSIT

OPERATING AND MAINTENANCE EXPENDITURE BREAKDOWN

FY'78-FY'81

CATEGORY	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Operations Wages & Fringe Benefits	$362,506	52	$432,038	50	$ 553,684	54	$ 720,427	51
Maintenance & Fuel	296,205	42	375,229	43	364,244	35	609,353	43
Buildings & Grounds	9,433	1	4,583	<1	12,674	1	5,297	<1
Insurance	NA		NA		46,663	5	42,233	3
Purchased Transportation*	25,044	4	30,135	3	33,670	3	35,695	3
Marketing & Misc.	7,097	1	22,084	3	17,631	2	9,601	<1
TOTAL	$700,285	100%	$864,069	100%	$1,028,566	100%	$1,422,606	100%

NA: Not Available

*Elderly and Handicapped service

Coralville Transit Revenue

Revenue of the Coralville Transit System for the period between FY'78 and FY'81, and the percentage shares by category, are shown in Table 14. Local, State, and Federal shares of total revenue are summarized in Table 15. Overall revenue increased by over 68% in the period between FY'78-FY'81. Fare revenue increased by 105% during this period, and locally generated revenue by 82%. As can be seen clearly in Table 14, these two sources provide the great majority of Coralville Transit's total revenue. An increase in the base fare from 35¢ to 50¢ on April 1, 1981, continued the policy of fares providing a substantial portion of operating revenue. The local commitment to transit in Coralville is apparent, as locally generated revenue increased from 84% to 100% of total revenue between FY'78 and FY'79, and has since tapered off at 95%. In addition to property taxes, Revenue Sharing and State Liquor Store profits are two additional sources of local revenue which have been tapped to provide assistance to Coralville Transit. State Transit Assistance to Coralville is expected to increase by nearly 100% in FY'82 due to a change in the allocation procedure for State funds. The former discretionary formula has been changed to one based on (1) locally determined income, (2) rider to expense ratio, and (3) revenue miles to expense ratio.

TABLE 14

CORALVILLE TRANSIT REVENUE

FY'78-FY'81

SOURCE	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Fare Revenue	$ 74,029	33	$ 94,034	36	$126,737	38	$151,836	40
Local Funding*	112,718	50	162,736	62	176,608	54	205,433	54
Iowa DOT	35,493	16	--		23,161	7	20,325	5
Advertising	850	<1	30	<1	--			
Miscellaneous Income	1,900	1	3,688	1	2,394	1	782	<1
TOTAL	$224,990	100%	$260,488	100%	$328,900	100%	$378,376	100%

*Includes General Fund revenue, Revenue Sharing, and State Liquor Store profits

TABLE 15

CORALVILLE TRANSIT

PERCENTAGE SHARES OF REVENUE BY SOURCE

SOURCE	YEAR			
	FY'78	FY'79	FY'80	FY'81
Local	84%	100%	93%	95%
State	16	0	7	5
Federal	0	0	0	0
	100%	100%	100%	100%

Coralville Transit Expenditures

The expenditures of Coralville Transit during the period from FY'78 to FY'81, and the relative shares by category, are shown in Table 16. The breakdown of operating and maintenance expenditures is shown in Table 17. Total annual expenditures increased by 66% between FY'78 and FY'81. The largest increase was in the area of operating and maintenance, which increased 75% during the four-year period. Driver wages, which make up the largest share of Coralville Transit's operating expenditures, increased 72% between FY'78 and FY'81. Driver wages make up 53% of Coralville Transit's FY'81 operating costs.

In addition to inflationary increases, especially in the areas of fuel, parts, insurance, and wages; Coralville Transit's operating expenditures increased because they have increased their service. Between FY'78 and FY'81 total annual bus miles increased from 186,300 to 198,520, an increase of almost 7%.

The percentage share of total expenditures for administration decreased between FY'78 and FY'81, from 10% to 7%. Coralville's contract with Johnson County SEATS for elderly and handicapped transportation service increased 25% over the four year period.

Expenditures for capital items have varied somewhat from year to year. In FY'79 and FY'80, 1% of the total budget was spent on office equipment, shop supplies, radio equipment, benches, and bus stop signs. In FY'78 capital expenditures were quite a bit higher, primarily due to the

purchase of a service truck ($7,996). For FY'81, capital expenditures make up 6% of the total budget.

TABLE 16

CORALVILLE TRANSIT EXPENDITURES

FY'78-FY'81

CATEGORY	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Administration	$ 24,950	10	$ 24,144	9	$ 27,320	8	$ 28,407	7
Operating/Maintenance	200,040	83	236,341	90	298,280	91	349,969	87
Capital	16,040	7	2,428	1	2,016	1	22,120	6
TOTAL	$241,030	100%	$262,913	100%	$327,616	100%	$400,496	100%

TABLE 17
CORALVILLE TRANSIT
OPERATING AND MAINTENANCE EXPENDITURE BREAKDOWN
FY'78 - FY'81

CATEGORY	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Operations Wages & Fringe Benefits	$ 107,650	54	$130,373	55	$147,000	49	$184,693	53
Maintenance	43,560	22	52,404	22	61,380	21	76,307	22
Fuel	16,550	8	19,939	8	20,300	7	53,808	15
Buildings & Grounds	250	∠1	543	∠1	2,700	1	5,176	1
Insurance	17,000	8	22,163	9	46,200	15	23,761	7
Purchased Transportation*	4,000	2	4,600	2	4,700	2	5,000	1
Marketing & Misc.	11,030	6	6,319	3	16,000	5	1,224	∠1
TOTAL	$200,040	100%	$236,341	100%	$298,280	100%	$349,969	100%

*Elderly and Handicapped service

University of Iowa CAMBUS Revenue

University of Iowa CAMBUS has a considerably different mix of revenue sources than either Coralville Transit or Iowa City Transit. Annual revenue, and the relative shares by source for the FY'78-FY'81 period, are shown in Table 18. Table 19 shows the relative local, State and Federal shares over the same period. CAMBUS revenues increased 19% over the period shown.

As can be seen in Table 18, the percentage of total revenue from student fees, charters, and parking receipts has remained relatively stable since FY'78. However, there has been a steady decrease in the amount of Federal Work-study funds going to CAMBUS since FY'78. Work-study is a program in which the Federal Government will pay 80% of the wages for low income college students who work at specific jobs for the University. In 1978, 75 of 108 CAMBUS employees were included in the Work-study program. In 1981, only 30 of 100 employees were included. This trend is due to two factors: (1) the total amount of money available from the program has decreased slightly, and (2) many new Work-study jobs have been created within the University, meaning that CAMBUS has had to compete for the available personnel.

A portion of University student fees are allocated to CAMBUS. The current fee is $4.54 per student, per semester; and 25¢ per student for the summer session. Students may also, at their option, pay an additional fee of $2 per semester for CAMBUS. These optional fees contribute approximately 2% of all revenue.

The University of Iowa also allocates a portion of their parking fee receipts for CAMBUS operations. This allocation, which had remained at $85,000 annually since FY'76, was increased to $110,500 in FY'81.

The gap between CAMBUS's budgeted revenue and budgeted expenditures has been growing each year since FY'78. This deficit is paid off each year with funds from the University of Iowa general fund, but remains as a deficit on CAMBUS books.

TABLE 18
UNIVERSITY OF IOWA CAMBUS REVENUE
FY78 - FY81

	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Student Fees	$176,201	39	$178,247	41	$200,443	46	$216,121	48
Optional Student Fees	9,340	2	8,034	2	4,311	1	10,674	2
Charters	3,286	1	3,812	1	4,450	1	5,139	1
Parking Receipts Allocation	85,000	19	85,000	19.5	85,000	19	110,500	25
University General Funds	17,800	4	20,000	4.5	21,400	5	28,988	7
Federal Work Study	150,191	34	139,146	32	121,570	28	75,861	17
TOTAL	$441,818	100%	$434,239	100%	$437,175	100	$447,283	100%

TABLE 19
UNIVERSITY OF IOWA CAMBUS
PERCENTAGE SHARES OF REVENUES BY SOURCE
FY'78 - FY'81

	FY'78	FY'79	FY'80	FY'81
Local	62	63.5	67	76
State	4	4.5	5	7
Federal	34	32	28	17
TOTAL	100%	100%	100%	100%

University of Iowa CAMBUS Expenditures

Expenditures of the University of Iowa CAMBUS system during the period from FY'78 to FY'81, and the relative percentage shares by category, are shown in Table 20. Over the four year period total expenditures increased by 20%. There were no major capital expenditures during this time, due in part to the fact that CAMBUS replaced its entire fleet of buses in FY'77.

Total expenditures for administration of CAMBUS increased by 72% between FY'78 and FY'81. Total expenditures for operating and maintenance increased by 14% during this same time. Since costs for wages, fuel, parts, and insurance have increased considerably since FY'78, this modest increase in operating and maintenance expenditures is due to a concomitant decrease in total miles of service since FY'78. The percentage share of operating and maintenance expenditures actually declined from FY'78-FY'81.

TABLE 20
UNIVERSITY OF IOWA CAMBUS EXPENDITURES
FY'78 - FY'81

SOURCE	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Administration	$ 46,591	10	$ 50,245	10	$ 73,972	15	$ 80,054	15
Operating/ Maintenance	399,419	90	430,755	90	421,004	85	455,194	85
Capital	--	--	--	--	--	--	--	--
TOTAL	$446,010	100	$ 481,000	100	$ 494,976	100	$ 535,248	100

University of Iowa Handicapped Student Transportation - Revenue and Expenditures

Revenue and expenditures related to the operation and maintenance of the "Bionic Bus" fleet are recorded separately from the remainder of CAMBUS operations, and are shown in Table 21. As can be clearly seen, funding sources for the Bionic Bus system have changed completely since FY'78. The principle sources of revenue in FY'78 were a Vocational Rehabilitation Grant which funded the cost of a bus, radio equipment, and a portion of operating expenses; and Comprehensive Employment and Training Act (CETA) monies, which provided funds for driver's salaries. Following FY'78, revenue from these two sources stopped, and the University of Iowa began providing direct support from the general fund. In FY'81 this direct support from the general fund stopped, and the Bionic Bus system was financed 100% from the CAMBUS budget. No Federal Work-study funds are used in the Bionic Bus operation, and handicapped students do not pay a special fee for the use of the bus.

Operating and maintenance expenditures for the Bionic Bus operation increased 55% during the period FY'78-FY'81. This increase in expenditures is a result of higher costs for wages, fuel, parts, and insurance; and an increase in the Bionic Bus fleet size.

TABLE 21
REVENUE AND EXPENDITURES
UNIVERSITY OF IOWA HANDICAPPED STUDENT TRANSPORTATION
FY'78 - FY'81

REVENUES	YEAR			
	FY'78	FY'79	FY'80	FY'81
University General Fund	$ 5,775	$24,406	$26,000	$ 0
CETA	4,529	0	0	0
Vocational Rehabilitation Grant	14,903	0	0	0
From CAMBUS Budget	0	1,895	33,077	35,466
TOTAL	$25,207	$26,301	$59,077	$35,466

EXPENDITURES	YEAR			
	FY'78	FY'79	FY'80	FY'81
Administration	--	--	--	--
Operating/Maintenance	$22,902	$26,301	$33,077	$35,466
Capital	2,305	--	26,000	--
TOTAL	$25,207	$26,301	$59,077	$35,466

*Administration for Bionic Bus is included in total CAMBUS administration expenditures.

Johnson County SEATS Revenue

Johnson County SEATS receives revenue from a variety of sources. Revenue for the period FY'78-FY'81, and the relative share of each source, is shown in Table 22. Percentage shares of revenue from local, State, and Federal sources are shown in Table 23.

Several changes are notable in the information contained in Tables 22 and 23. Revenue from the Comprehensive Employment and Training Act (CETA), which in 1976 provided 89% of SEATS total revenue, has declined to zero in 1981. Fares (actually donations - they are not mandatory) have slightly increased in actual terms, but declined as a percentage of total revenue. The percentage share of revenue from the service contracts with the three urban municipalities has also declined. State Transit Assistance, after peaking in FY'79, has declined in succeeding years. The net result of all of this has been that the County has had to provide an increasingly greater amount of revenue to SEATS. Johnson County's contribution in FY'78 was $8953, or 5% of total revenue. In FY'81 the County's share was $59,088, or 44% of total revenue. This situation should be alleviated somewhat in FY'82, as the price of Iowa City's service contract is expected to increase by 60%, and Coralville's by 50%.

Table 23 clearly illustrates the trend of decreasing State and Federal contributions to SEATS, and an increase in local revenue.

TABLE 22
JOHNSON COUNTY SEATS REVENUE
FY'78 - FY'81

SOURCE	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Fares	$ 7,650	10	$ 9,136	9	$ 9,590	8	$ 12,042	9
Heritage AAA (Titles III and VII)	9,588	11	6,102	6	4,295	4	7,600	6
IDOT	5,921	8	12,612	13	11,369	10	6,834	5
CETA	6,063	8	12,469	12	1,645	1	0	
Iowa City	35,220	45	26,500	27	30,628	27	32,500	24
Coralville	3,759	12	3,800	4	4,573	4	5,000	4
University Heights			876	1	932	1	500	∠1
Goodwill (Title XX)			9,417	9	20,979	18	12,000	9
RESB			85	1				
Johnson County: General Fund	8,953	5	17,727	18	29,378	26	59,088	44
Department of Revenue			976	1	1,371	1		
Vocational Rehabilitation					155	∠1		
TOTAL	$ 77,154	100%	$ 99,700	100%	$114,915	100%	$135,564	100%

TABLE 23
JOHNSON COUNTY SEATS
PERCENTAGE SHARES OF REVENUE BY SOURCE
FY'78 - FY'81

SOURCE	YEAR			
	FY'78	FY'79	FY'80	FY'81
Local	22%	28%	35%	57%
State	58	54	60	38
Federal	20	18	5	6
TOTAL	100%	100%	100%	100%

Johnson County SEATS Expenditures

Table 24 lists SEATS expenditures from FY'78 to FY'81, and relative percentage shares by expenditure category. SEATS total expenditures increased by 76% in the period between FY'78-FY'81. Operating and maintenance expenditures increased 105% during this time. These increases reflect general cost increases for wages, fuel, insurance, and parts; and the expansion in service area and number of vehicles.

TABLE 24
JOHNSON COUNTY SEATS EXPENDITURES
FY'78 - FY'81

	YEAR							
	FY'78	%	FY'79	%	FY'80	%	FY'81	%
Administration*	$10,200	13	$12,500	13	$ 14,500	13	$ 18,890	14
Operating/ Maintenance	51,260	67	87,200	87	100,415	87	105,024	77
Capital (local)	15,694	20	0	0	0	0	11,650	9
TOTAL	$77,154	100%	$99,700	100%	$114,915	100%	$135,564	100%

*Although the SEATS manager's salary is included under administration, he frequently assists with operating and maintenance functions.

IV RIDERSHIP

IV. Ridership

General

Figure 5 shows annual ridership on Iowa City Transit, Coralville Transit, and University of Iowa CAMBUS between FY'76 and FY'81. The overall trend is one of steady growth and patronage for the two municipal systems, and a recent surge in CAMBUS ridership following a period of slight decline. The fluctuations in CAMBUS ridership, when compared to the steady growth of the municipal systems, is due to a number of factors. The decline in CAMBUS ridership between FY'76 and FY'77 is likely attributable to the fact that the Interdorm Express route was not operated in FY'77. The decline and tapering off of CAMBUS ridership between FY'78 and FY'80 is primarily due to an overall reduction in service, resulting in 15,400 less vehicle miles operated in FY'79 than in FY'78.

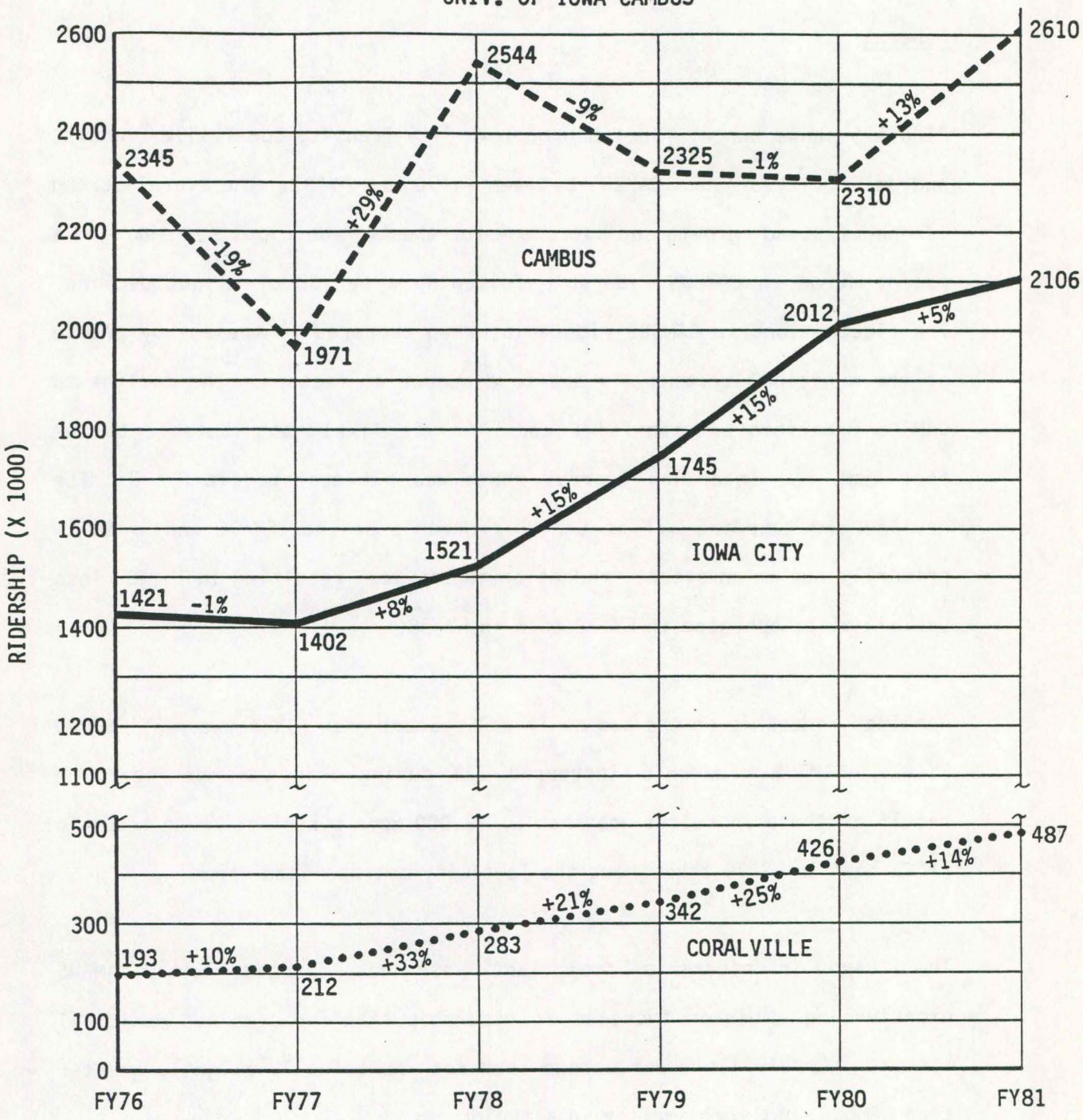
Combined ridership on the two municipal systems grew 61% between FY'76 and FY'81. CAMBUS ridership increased 11% during this same period. The result of these increases was that 1,242,000 more bus rides were taken in FY'81 than in FY'76 throughout the Iowa City metropolitan area.

The trend in ridership from last year has changed, with CAMBUS experiencing a higher increase in ridership than the combined municipal systems. Coralville's percentage increase was actually slightly greater than CAMBUS, but much smaller in actual terms.

Figure 5

RIDERSHIP TRENDS FY 1976-1981

IOWA CITY TRANSIT
CORALVILLE TRANSIT
UNIV. OF IOWA CAMBUS



Several factors may explain the continued strong growth in ridership on the Iowa City and Coralville systems. The improvements in service which were outlined earlier have helped attract new riders, as have increases in University enrollment and City population. In addition, while the cost of using mass transit has increased only slightly (10¢ per ride for Iowa City and 15¢ per ride for Coralville since 1978), the cost of using the primary alternative, the automobile, steadily increased throughout the 1970's and shows every sign of continuing this trend in the 1980's. In weighing cost factors in the choice between auto and transit, persons most often compare transit fares with the "out-of-pocket" costs of making the trip by car. Fuel and parking are the most significant out-of-pocket costs for most drivers. The price of gasoline has risen more than 100% in the last eight years, from approximately $.55 a gallon in 1973 to over $1.30 a gallon in 1981. In conjunction with its urban renewal efforts, Iowa City has concentrated long-term parking in the central business district into two new parking ramps, which charge 25¢ per hour. Short-term parking in the CBD also costs 25¢ per hour in the ramps, or 20¢ per hour at various metered locations. These parking policies tend to encourage transit use. When the total costs of operating an automobile are considered, transit seems even more advantageous.

An additional factor which has always been in the favor of the two municipal transit systems is the existence of a strong central business district in the Iowa City metropolitan area. Because of the existence of the University of Iowa main campus and a strong urban renewal program which is nearing completion, the Iowa City CBD and adjacent hospital complex has always been by far the dominant trip generator in the

community. To have a dominant trip generator like this is a definite advantage for the two municipal transit systems, in that it allows them to concentrate one end of all their trips into a single location.

More information on the ridership of the three fixed-route systems, Johnson County SEATS, and the CAMBUS "Bionic Bus" is presented in the sections which follow.

Iowa City Transit

Monthly ridership on Iowa City Transit during 1978, 1979, 1980, and 1981 is listed in Table 25 and plotted graphically in Figure 6. Between 1978 and 1981 Iowa City Transit ridership grew by 36%. Figure 6 illustrates the traditional pattern of low ridership during the summer months when University enrollment is down, and high ridership during the regular academic year. Summer usage is approximately 60% of the ridership level during the rest of the year.

Table 26 divides the average monthly ridership of Iowa City Transit according to route pairs. It can be seen that the Mark IV/Lakeside route pair carries the highest number of riders, although it carries nearly the fewest per mile of service offered. North Dubuque/Wardway is by far the least used route pair, and also averages the lowest number of passengers per revenue mile. The Towncrest/Oakcrest route pair is perhaps the most efficient in that it has both high ridership and a high passengers-per-revenue-mile figure.

Table 27 shows the different fare options and their respective use between 1978 and 1981. It is clear that there is a trend of increased use of the monthly pass and decreased use of cash fare. The use of cash fare decreased from 66% of total fares in 1978 to 54% in 1981. There was a corresponding increase in use of the monthly pass during this time. This is an indication that Iowa City Transit is acquiring more regular riders who find the monthly pass to be a good buy. The percentage of elderly and handicapped riders utilizing the free fare program during off-peak

periods remained nearly the same during the four-year period. The use of merchant coupons increased slightly, but still remains a very small amount. Figure 7 shows the increase in the number of monthly bus passes sold each month between 1978 and 1981. Total sales in 1980 were a 7% increase from 1979, and total sales in 1979 were a 65% increase from 1978. There was steady growth each month of the four year period until June 1980. One explanation for the decrease in growth since this time is that on July 1, 1980 the State of Iowa ended its subsidy program for State employees. This program, which included University of Iowa faculty and staff, paid 25% of the cost of a State employee's bus pass.

In 1978 each bus pass sold was used an average of 40 times. In 1979 there were 7376 more passes sold than in 1978, but each was only used an average of 36 times. In 1980 each pass sold was used an average of 39 times. In 1981 less passes were sold, but each was used an average of 44 times.

On September 1, 1980, Iowa City Transit and Coralville Transit began a reciprocity agreement, where each system agreed to honor the bus pass of the other system.

TABLE 25
IOWA CITY TRANSIT
MONTHLY RIDERSHIP
1978-1981

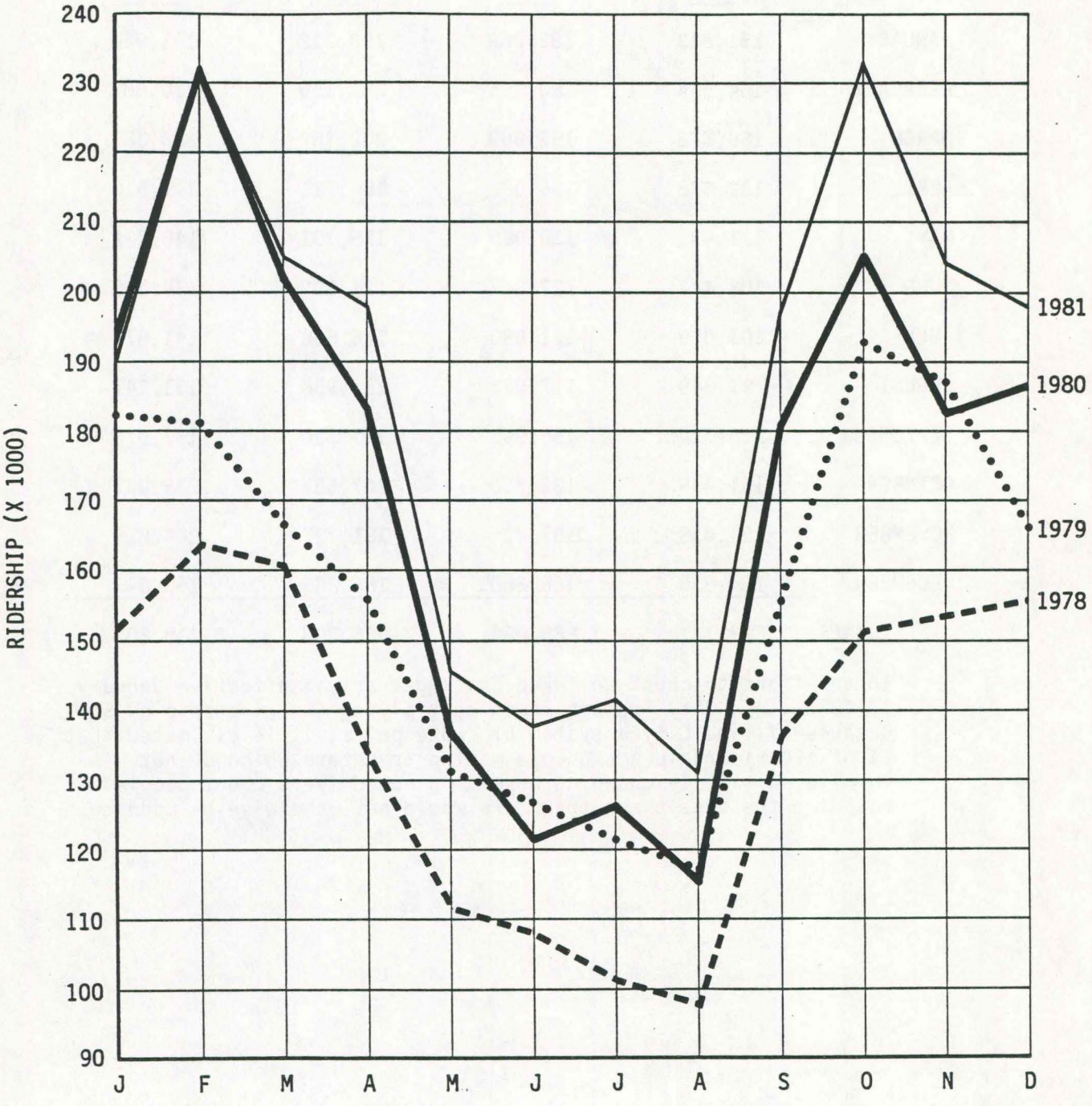
	1978	1979	1980	1981*
JANUARY	151,843	182,089	193,312	191,966
FEBRUARY	164,564	180,225	231,159	230,887
MARCH	160,573	167,969	202,362	203,381
APRIL	132,875	156,032	184,711	197,513
MAY	111,431	130,980	135,791	146,832
JUNE	108,447	127,847	121,892	138,138
JULY	101,050	121,890	126,668	141,870
AUGUST	97,849	117,025	112,958	131,147
SEPTEMBER	136,734	156,995	181,320	197,570
OCTOBER	151,446	192,750	207,557	233,037
NOVEMBER	154,459	187,424	181,727	204,619
DECEMBER	157,830	166,860	186,843	198,847
TOTALS	1,629,101	1,888,086	2,066,300	2,215,807

*In an effort to count unlinked passenger trips, effective January 1, 1981 Iowa City Transit began multiplying its ridership by 5%. Because of Iowa City's system of route pairs, it is estimated that 5% of its ridership are people making transfers which do not involve physically changing buses. Since drivers count people boarding the bus, these transfers would not otherwise be counted.

Figure 6

IOWA CITY TRANSIT

MONTHLY RIDERSHIP 1978-1981



Total Ridership:

1981 = 2,215,807
1980 = 2,066,300
1979 = 1,888,086
1978 = 1,629,101

TABLE 26
IOWA CITY TRANSIT
1981 ROUTE PAIR STATISTICS

Route Pair	Average Monthly Ridership	% of Total	Average Revenue Miles per Month	Passengers per Revenue Mile
Mark IV/Lakeside	34,052	19	13,885	2.5
Towncrest/Oakcrest	30,793	17	8,263	3.7
Hawkeye/Seventh Avenue	28,808	16	7,931	3.6
Rochester/Mall	26,413	14	8,493	3.1
North Dodge/Sycamore	24,436	13	7,131	3.4
Manville/Court Hill	23,452	13	7,604	3.1
North Dubuque/Wardway	7,611	4	3,950	1.9
Trippers	8,000	4	1,705	4.7
	183,565	100%	59,302	3.1

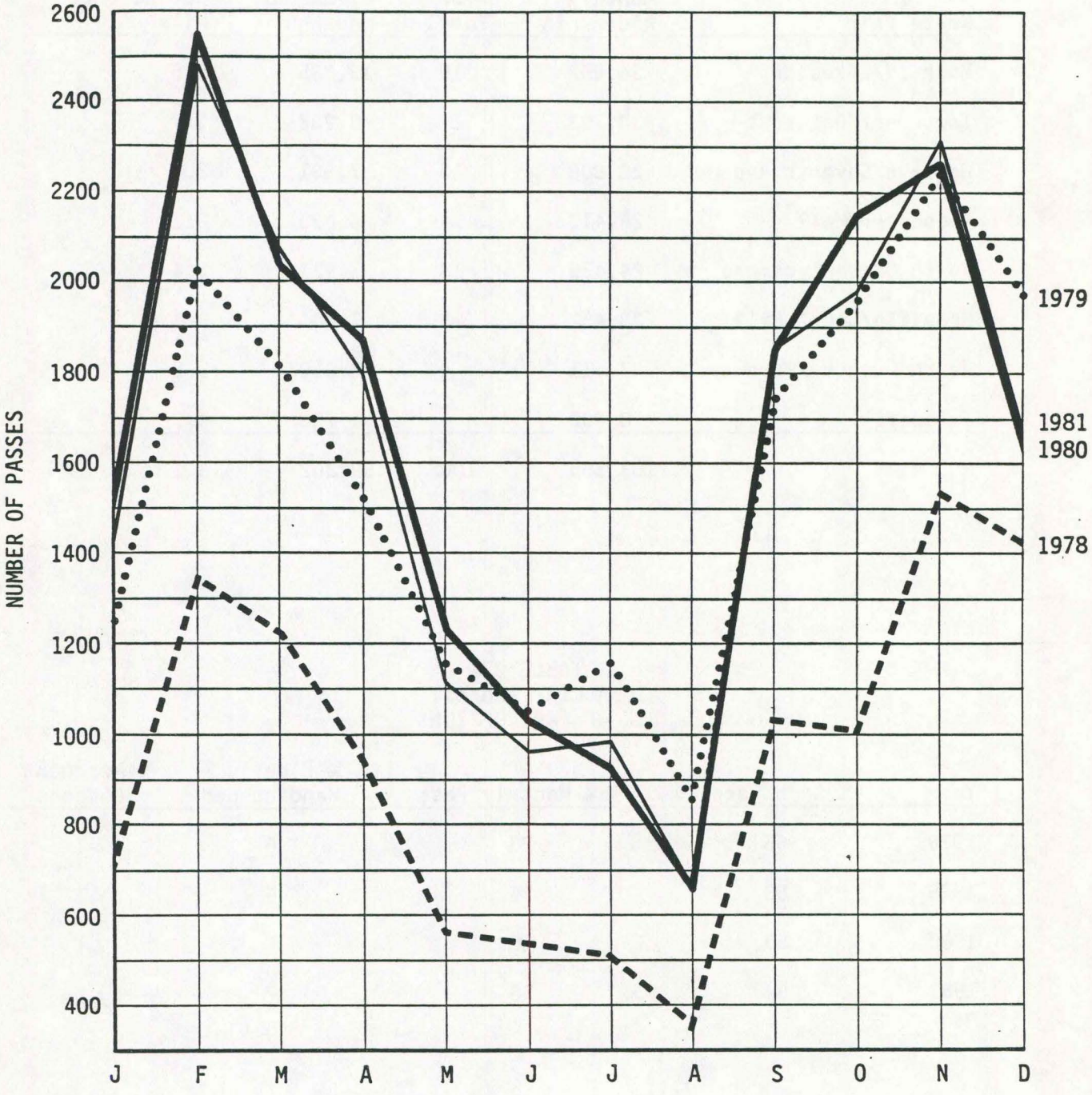
TABLE 27
IOWA CITY TRANSIT
USE OF FARE OPTIONS

Year	% Cash Fare	% Monthly Pass	% Elderly & Handicapped	% Merchant Coupons
1978	66	28	6	<1
1979	58	36	6	<1
1980	55	38	6	<1
1981	54	38	7	<1

Figure 7

IOWA CITY TRANSIT

BUS PASSES SOLD PER MONTH 1978-1981



Total Passes Sold:

1981 = 19,321
1980 = 20,042
1979 = 18,674
1978 = 11,298

Coralville Transit

Ridership on Coralville Transit increased 53% between 1978 and 1981. This increase came on the heels of a 51% ridership increase between 1976 and 1978. Table 28 and Figure 8 show Coralville Transit's monthly ridership between 1978 and 1981. Coralville ridership has been stimulated by supplementary peak-hour service on the Tenth Street route, and service improvements in general resulting in an increase of approximately 14,000 vehicle miles operated per year between 1978 and 1980. Another factor involved in Coralville Transit's increased ridership is that they were able to keep their fare structure constant between 1978 and 1980, while other transportation costs, notably the cost of operating a motor vehicle, greatly increased. On April 1, 1981, Coralville Transit increased their base fare and cost of the monthly pass to offset some increased costs in their own operation. Figure 8 illustrates that ridership has declined following this fare increase, although current ridership is still significantly above 1978 and 1979 levels.

Ridership on Coralville Transit for 1981 is detailed in Table 29 according to route. The Lantern Park-Tenth Street route continues to be the mainstay of the Coralville System, carrying 64% of total 1981 ridership. The Lantern Park-Tenth Street route also carries the most passengers per mile of all Coralville Transit regular routes. The Express route has the second highest ridership of all Coralville routes, but has the lowest ridership per mile of service offered. This is not surprising since the Express is the longest Coralville route (16.7 miles) and passes through several areas of low- and non-residential land use.

Figure 9 illustrates how sales of the Coralville Transit monthly bus pass have increased over the last four years. The most serious break in the steady increase was during the summer of 1980, when the State of Iowa ended its 25% subsidy program for State employees. Pass sale levels have since strongly rebounded, and are continuing to show strong growth into 1981. This is an indication that Coralville Transit is acquiring more regular transit users. With the 42% increase in fares (from 35¢ to 50¢) which took place April 1, 1981, the monthly pass is now an even better buy, as it's price was only increased 33% (from $12 to $16).

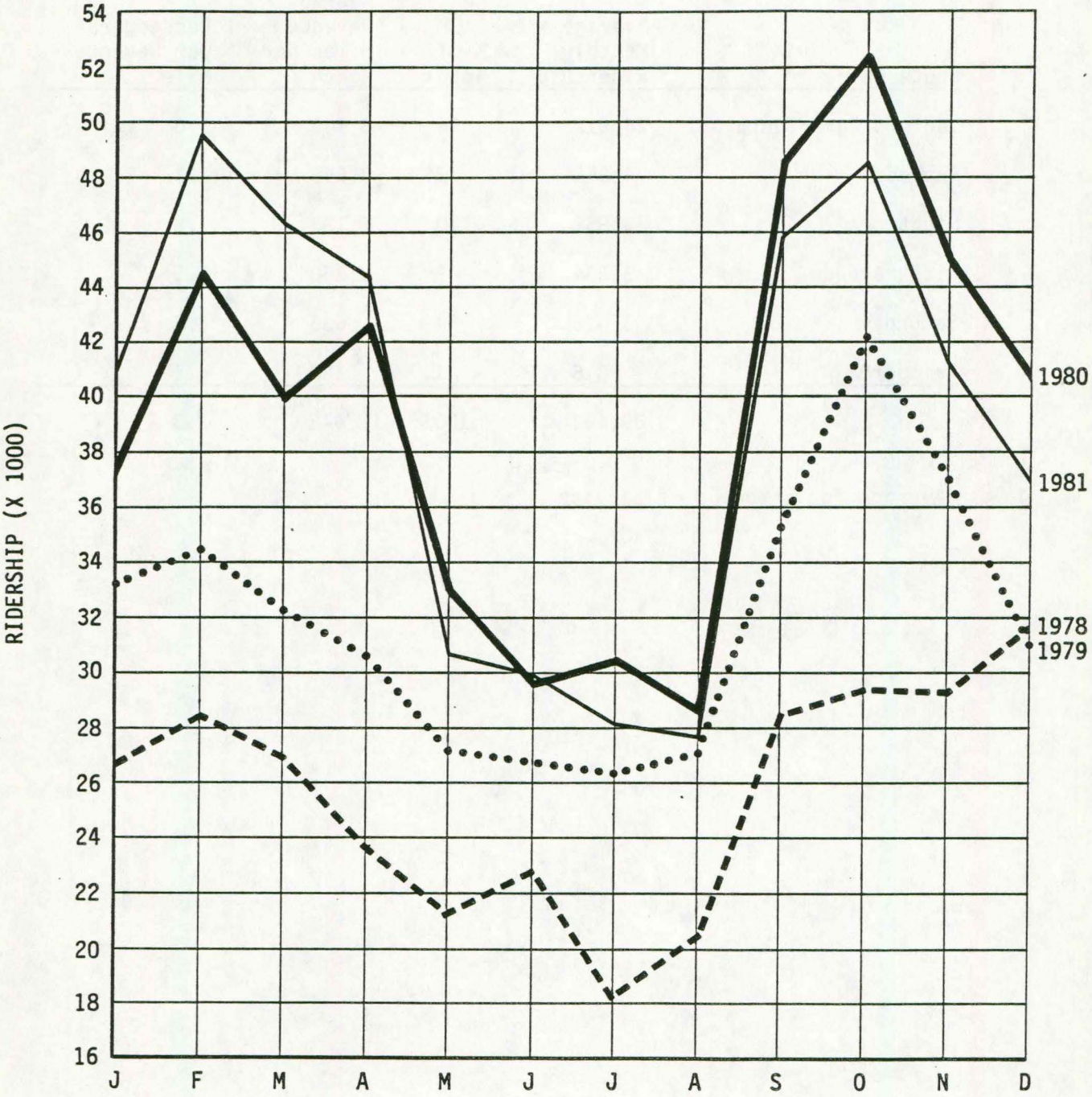
TABLE 28
CORALVILLE TRANSIT
MONTHLY RIDERSHIP
1978-1981

	1978	1979	1980	1981
JANUARY	26,548	33,330	37,505	40,836
FEBRUARY	28,258	34,226	44,520	49,620
MARCH	27,561	32,161	39,924	46,204
APRIL	23,785	30,868	42,371	44,300
MAY	21,080	27,185	32,858	30,650
JUNE	22,885	26,711	29,612	29,633
JULY	18,007	26,172	30,301	28,268
AUGUST	20,518	27,076	28,439	27,671
SEPTEMBER	28,417	35,416	48,331	45,344
OCTOBER	29,538	42,042	52,593	48,297
NOVEMBER	29,211	37,171	45,118	41,812
DECEMBER	31,630	31,372	40,601	36,920
TOTAL	307,438	383,730	472,173	469,555

Figure 8

CORALVILLE TRANSIT

MONTHLY RIDERSHIP 1978-1981



Total Ridership:

1981 = 469,555
1980 = 472,173
1979 = 383,730
1978 = 307,438

TABLE 29
CORALVILLE TRANSIT
1981 ROUTE PAIR STATISTICS

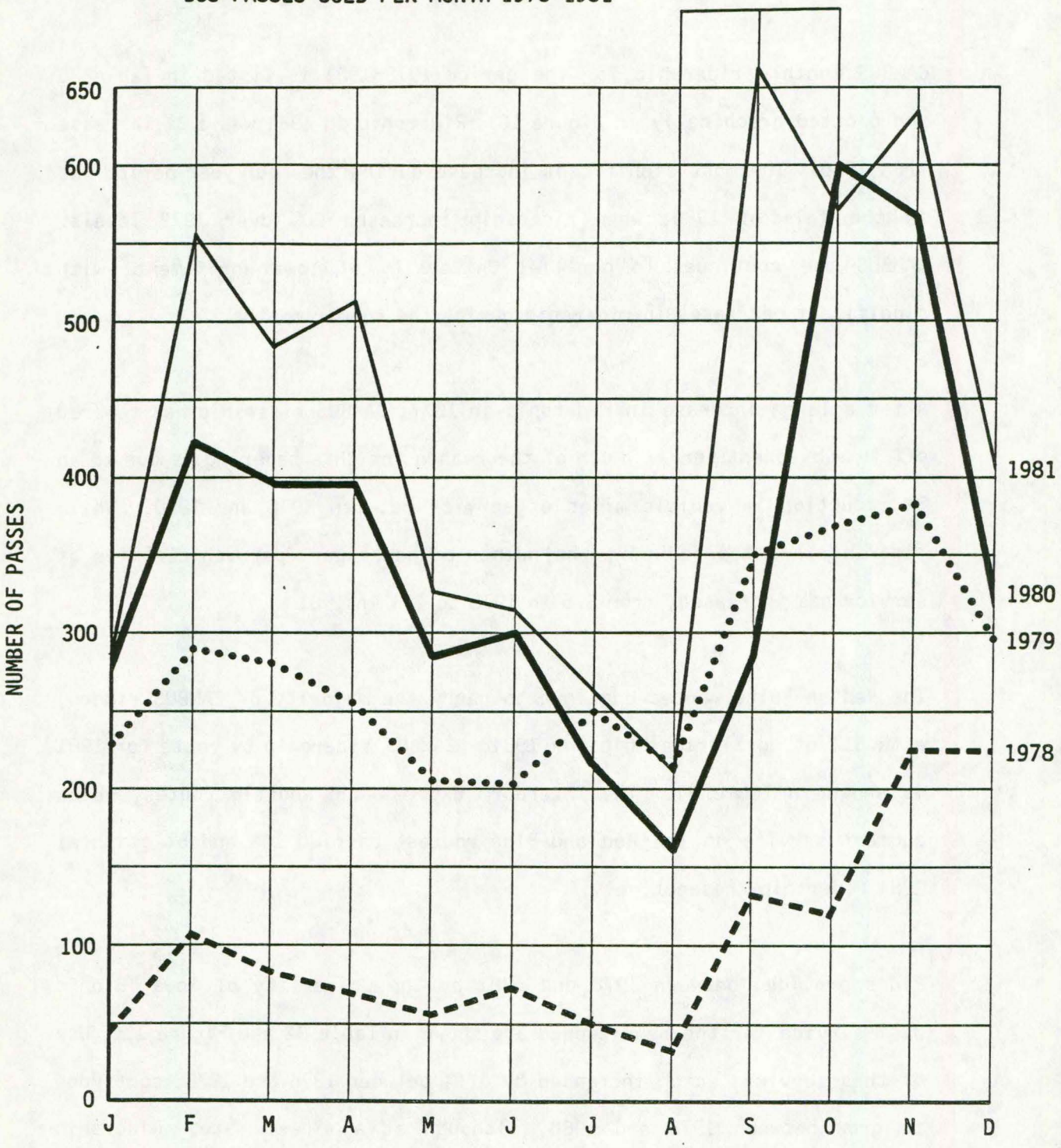
Route Pair	Average Monthly Ridership	% of Total	Average Revenue Miles per Month	Passengers per Revenue Mile
Lantern Park-Tenth St.	24,912	64	8,400	3.0
Express	4,856	12	3,648	1.3
Night	3,858	10	2,193	1.8
First Avenue	3,534	9	2,350	1.5
Saturday	1,426	4	653	2.2
Tripper*	816	1	198	4.1
	39,402	100%	17,442	2.3

*Average for 8 months of service

Figure 9

CORALVILLE TRANSIT

BUS PASSES SOLD PER MONTH 1978-1981



Total Passes Sold:

1981 = 5216
1980 = 4217
1979 = 3357
1978 = 1248

University of Iowa CAMBUS

CAMBUS monthly ridership for the period 1978-1981 is listed in Table 30 and plotted graphically in Figure 10. Ridership in 1981 was a 3% increase from 1980. The most significant increase during the four year period was in the fall of 1980, when ridership increased 20% over 1979 levels. CAMBUS use continues to parallel University of Iowa enrollment, with significant decreases in ridership during the summer months.

After a large increase in ridership in 1977, CAMBUS ridership has tapered off in subsequent years. Much of the reason for this tapering is due to an 8% reduction in vehicle miles of service between 1978 and 1980. While ridership has tapered off, the number of passengers per vehicle mile of service has increased, from 6.5 in 1978 to 7.3 in 1981.

The Red and Blue routes continue to carry the majority of CAMBUS riders, with 61% of total ridership for 1981. CAMBUS ridership by route for 1981 is shown in Table 31. The Interdorm Express and Shuttle routes, which augment service on the Red and Blue routes, carried 14% and 5% of total 1981 ridership, respectively.

Rides provided between 1978 and 1981 by the University of Iowa "Bionic Bus" service for the handicapped are shown in Table 32 and Figure 11. Use of this service, which increased by 169% between 1976 and 1978, continued to grow between 1978 and 1980, although at a slower rate. Ridership between 1978 and 1980 increased 44%, reflecting an increase in total vehicle miles of service due to the addition of a second Bionic Bus.

Ridership declined in 1981 but stayed above 1978-1979 levels. Ridership fluctuates considerably from month to month, with the cold weather months during the University academic year generating the highest number of rides. In addition to the fluctuations in ridership which are a result of weather and service changes, some fluctuation in Bionic Bus ridership is due to the month-by-month characteristics of the "temporarily handicapped" population. Bionic Bus ridership can be separated into three groups: wheelchair bound, semi-ambulatory, and temporarily handicapped. The two permanently handicapped groups are relatively static and predictable in their ridership. However the temporary group can fluctuate considerably from month to month. For example, a single person with a broken leg can cause Bionic Bus ridership to increase by 50 trips a month. If for some reason there is an influx of temporarily handicapped riders, it will have the effect of causing ridership to shoot up one month, then drop the next.

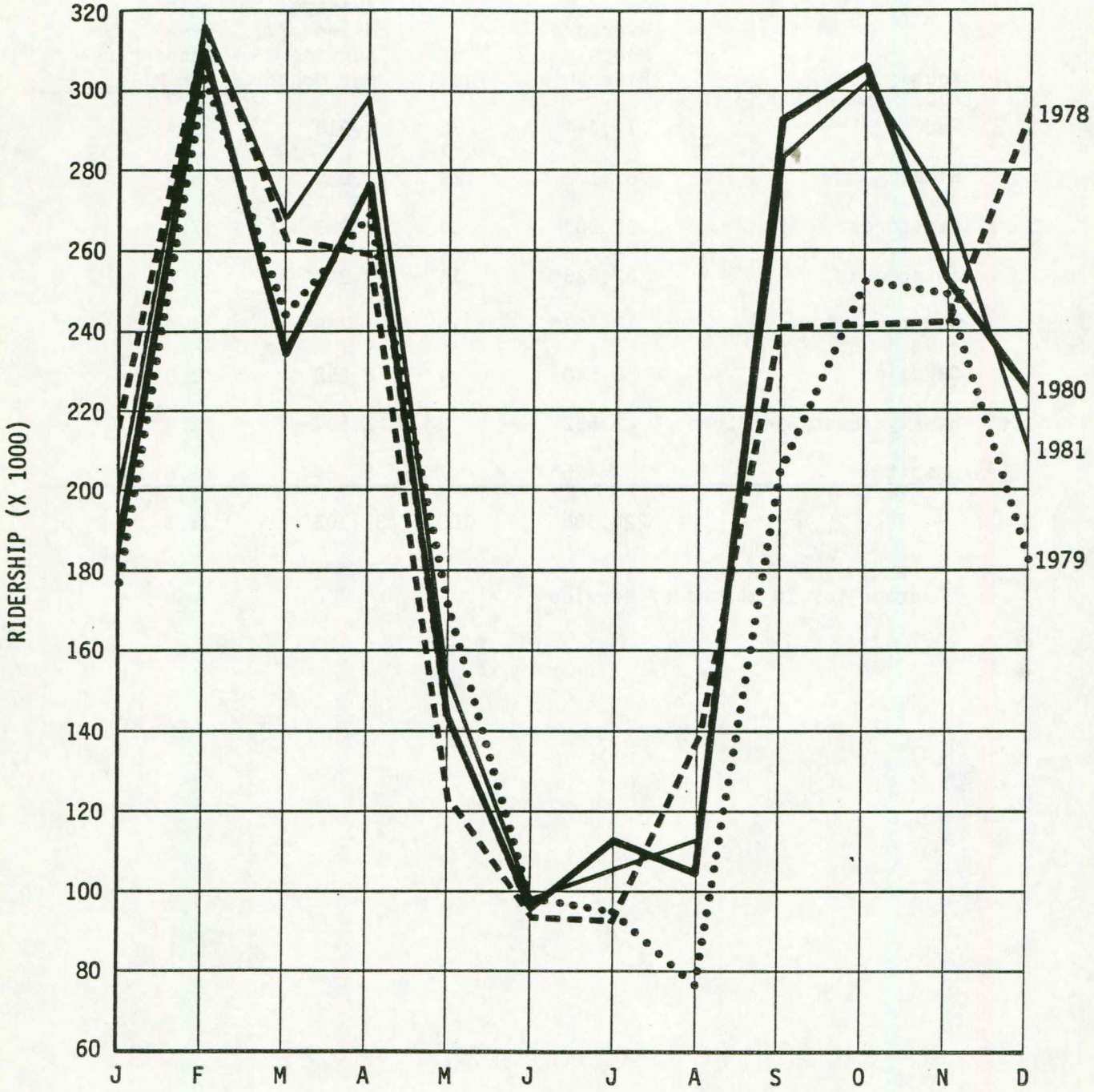
TABLE 30
UNIVERSITY OF IOWA CAMBUS
MONTHLY RIDERSHIP
1978-1981

	1978	1979	1980	1981
JANUARY	216,523	178,211	180,613	194,023
FEBRUARY	317,008	308,244	316,125	317,798
MARCH	262,465	241,418	238,608	266,220
APRIL	259,282	267,261	278,750	297,928
MAY	124,744	170,866	144,428	151,573
JUNE	93,062	99,688	94,407	96,738
JULY	90,531	93,475	113,673	105,092
AUGUST	89,288	79,885	103,702	112,348
SEPTEMBER	200,000	204,643	291,198	283,682
OCTOBER	240,885	254,623	306,476	302,307
NOVEMBER	241,607	243,588	248,619	268,966
DECEMBER	196,790	180,852	222,224	216,434
TOTAL	2,332,185	2,322,754	2,538,823	2,613,109

Figure 10

CAMBUS

MONTHLY RIDERSHIP 1978-1981



Total Ridership:

1981 = 2,613,109
1980 = 2,538,823
1979 = 2,322,754
1978 = 2,332,185

TABLE 31
UNIVERSITY OF IOWA CAMBUS
1981 ROUTE STATISTICS

Route	Average Monthly Ridership	% of Total	Average Miles of Service per Month	Passengers per Mile
Red	74,044	32	7,918	9.4
Blue	67,173	29	7,889	8.5
Pentacrest	32,303	14	1,883	17.2
Interdorm	32,026*	14	2,848*	11.2
Shuttle	10,322*	5	736*	14.0
Oakdale	8,540	4	8,258	1.0
Hawkeye/East Side Loop	3,552	2	1,507	2.4
Hospital	425*	1	64*	6.6
	228,385	100%	31,103	7.3

*Average for 10 months of service

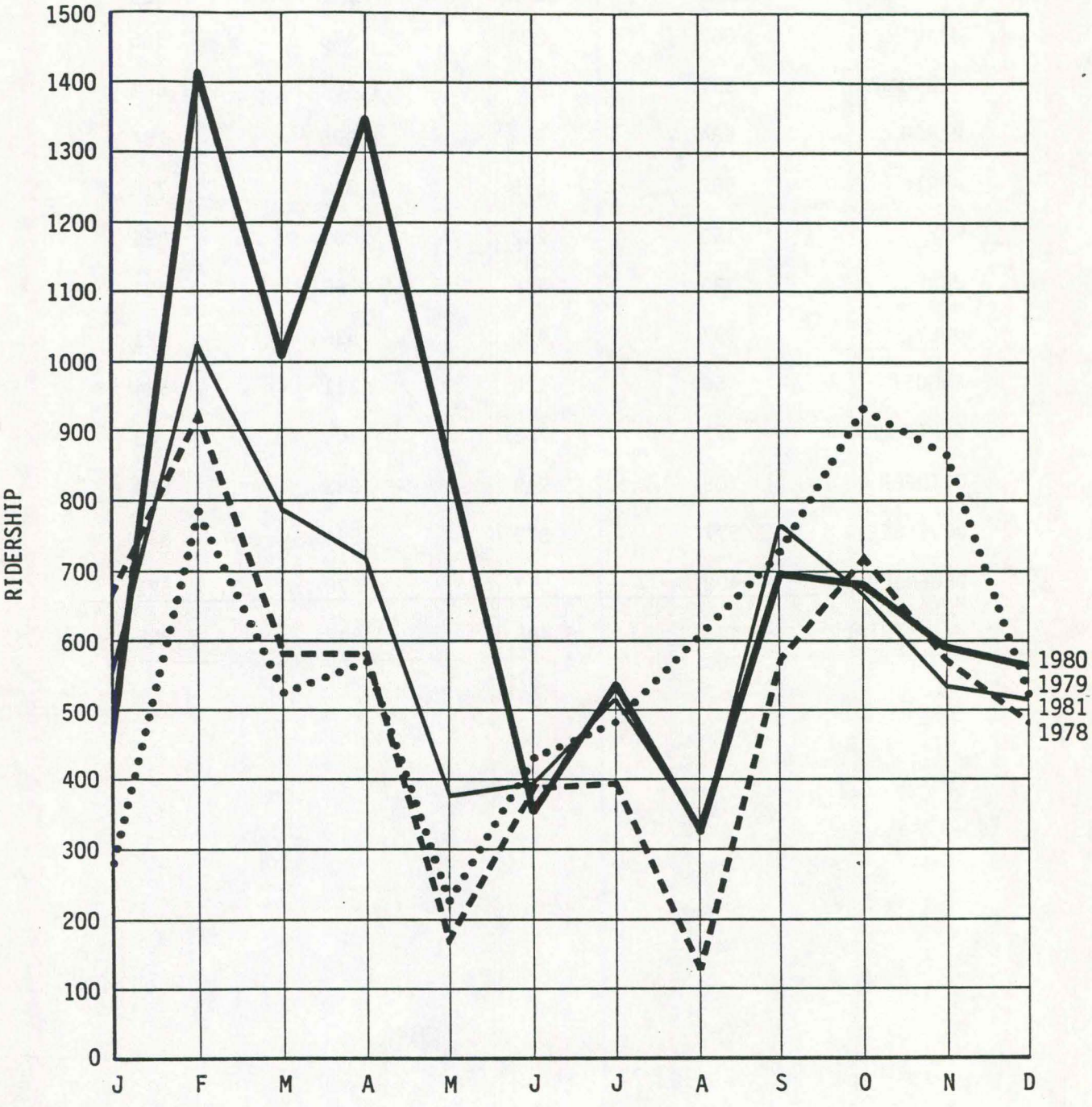
TABLE 32
UNIVERSITY OF IOWA HANDICAPPED TRANSPORTATION SERVICE
BIONIC BUS MONTHLY RIDERSHIP
1978-1981

	1978	1979	1980	1981
JANUARY	667	294	476	565
FEBRUARY	937	790	1,407	1,028
MARCH	584	532	1,005	784
APRIL	582	579	1,349	718
MAY	169	212	861	385
JUNE	390	438	355	394
JULY	397	490	536	521
AUGUST	56	128	311	324
SEPTEMBER	573	708	700	763
OCTOBER	709	919	683	669
NOVEMBER	577	879	594	533
DECEMBER	492	517	570	521
TOTAL	6,143	6,486	8,847	7,205

Figure 11

UNIV. OF IOWA HANDICAPPED TRANSPORTATION SERVICE

MONTHLY RIDERSHIP 1978-1981



Total Ridership:

1981 = 7205
1980 = 8847
1979 = 6486
1978 = 6143

Johnson County SEATS

After tremendous growth in SEATS ridership between 1976 and 1978, ridership continued to increase between 1978 and 1981, although at a much slower rate. Between 1976 and 1978 SEATS ridership increased by 435%, and between 1978 and 1981 the increase was 62%. This trend in ridership parallels the trend in expansion of SEATS service: rapid expansion from 1976 to 1978, and a tapering off since then. The jump in ridership that occurred in September 1980 corresponds with the initiation of service for Headstart clients and Congregate Meal service to the community of Solon. Table 33 and Figure 12 show Johnson County SEATS monthly ridership between 1978 and 1981.

Table 34 shows the distribution of SEATS ridership according to service area. Iowa City urban area service provides the greatest number of riders, at 43% of the total. Rural Johnson County service makes up 20% of total ridership, and Goodwill client service and Congregate Meals provide 16% and 12% of SEATS ridership, respectively. Coralville and University Heights service make up the remaining 8% of SEATS ridership.

The split in SEATS ridership between regular service and contracted urban area service is shown in Table 35. It can be seen that the specialized paratransit service which SEATS provides to Iowa City Transit, Coralville Transit, and University Heights makes up slightly more than half of their total ridership.

SEATS ridership is concentrated in the urbanized portion of Johnson County. Most Goodwill and Congregate Meal trips occur in the urban area, and most rural trips have one of their trip ends in the Iowa City metropolitan area.

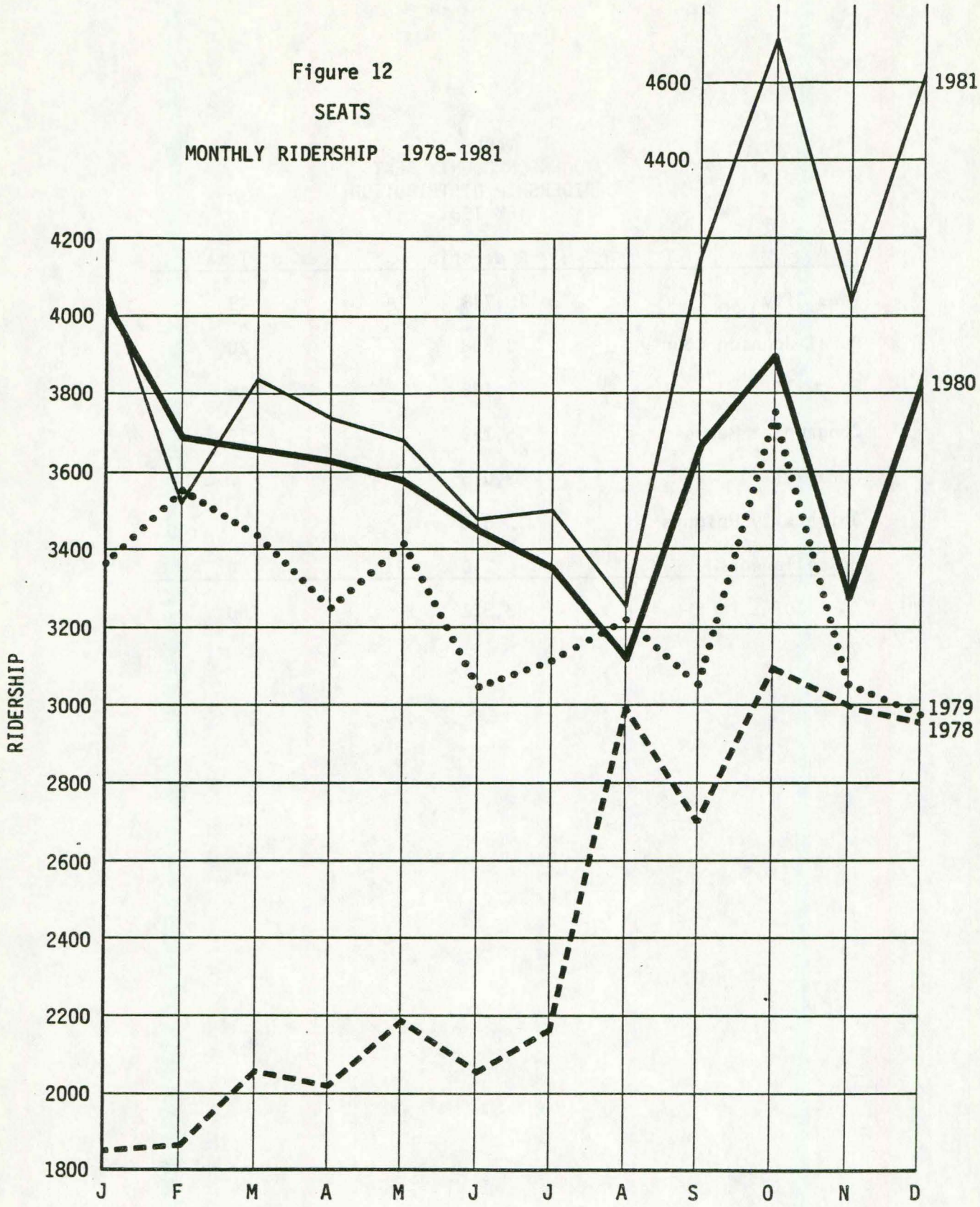
TABLE 33
JOHNSON COUNTY SEATS
MONTHLY RIDERSHIP
1978-1981

	1978	1979	1980	1981
JANUARY	1,858	3,346	4,030	4,056
FEBRUARY	1,868	3,580	3,692	3,517
MARCH	2,061	3,460	3,963	3,833
APRIL	2,006	3,269	3,630	3,737
MAY	2,176	3,433	3,596	3,688
JUNE	2,067	3,074	3,446	3,475
JULY	2,141	3,113	3,382	3,497
AUGUST	2,897	3,220	3,104	3,257
SEPTEMBER	2,689	3,054	3,616	4,169
OCTOBER	3,095	3,783	3,885	4,710
NOVEMBER	2,995	3,074	3,334	4,017
DECEMBER	2,943	2,978	3,804	4,617
TOTAL	28,796	39,384	43,572	46,573

Figure 12

SEATS

MONTHLY RIDERSHIP 1978-1981



Total Ridership:

1981 = 46,573
1980 = 43,542
1979 = 39,384
1978 = 28,796

TABLE 34
JOHNSON COUNTY SEATS
RIDERSHIP DISTRIBUTION
FY 1981

	Ridership	% of Total
Iowa City	18,748	43
Rural Johnson County	8,858	20
Goodwill	7,183	16
Congregate Meals	5,159	12
Coralville	3,045	7
University Heights	528	1
Miscellaneous	0	0
TOTAL	43,521	100

TABLE 35

JOHNSON COUNTY SEATS
RIDERSHIP SPLIT

	Month	Regular SEATS Service	%	Urban Area Service Contracts	%
FY81	July	1,732	51	1,650	49
	Aug	1,615	52	1,519	48
	Sept.	1,719	47	1,957	53
	Oct	1,543	40	2,342	60
	Nov	1,277	38	2,057	51
	Dec	1,847	49	1,925	51
	Jan	1,907	47	2,149	53
	Feb	1,631	46	1,886	54
	Mar	1,757	46	2,076	54
	Apr	2,019	54	1,718	46
	May	2,094	57	1,594	43
	June	2,027	58	1,448	42
	TOTAL	21,168	49	22,321	51
FY80	TOTAL	24,263	58	17,316	42
FY79	TOTAL	20,464	55	16,458	45

V SERVICE, USAGE, AND COSTS

V. Service, Usage, and Costs

There are numerous statistics available for analyzing the service, usage, and costs of public transportation systems. The service element can be thought of as consisting of three dimensions:

1. The area served by transit routes.

2. The time period over the day and week when the service is operated.

3. How frequently vehicles travel over each route (headway).

The total mileage travelled by all transit vehicles during a particular year captures all three dimensions and provides a good indicator of the amount of service provided. Total hours operated by all vehicles is another measure of transit service, and can be factored into total mileage to estimate an average overall speed. Total vehicle mileage multiplied by vehicle seating capacity results in seat miles, an even more specific measure of service. When comparing the amount of transit service provided in different areas, vehicle miles are usually divided by the total service area population to yield vehicle miles per capita. This allows comparison between urban areas of varying population and geographic characteristics.

The best measure of transit usage is ridership. Ridership can be separated by route, time period, and type of fare payment. Rides per vehicle mile or vehicle hour is an indicator of usage which factors in the amount of service provided. In comparing between different urban areas,

ridership is most often divided by the service area population which gives ridership per capita.

The cost of providing service may be expressed as raw totals, or the totals may be divided by vehicle miles, vehicle hours, or ridership. Costs may also be divided by the service area population, which yields cost per capita. A commonly used statistic is the revenue/expense ratio, which is a fraction formed by farebox revenue in the numerator, and operating and maintenance expenditures in the denominator. This ratio is an indicator of what percentage of operating and maintenance expenditures are covered by revenue from the farebox.

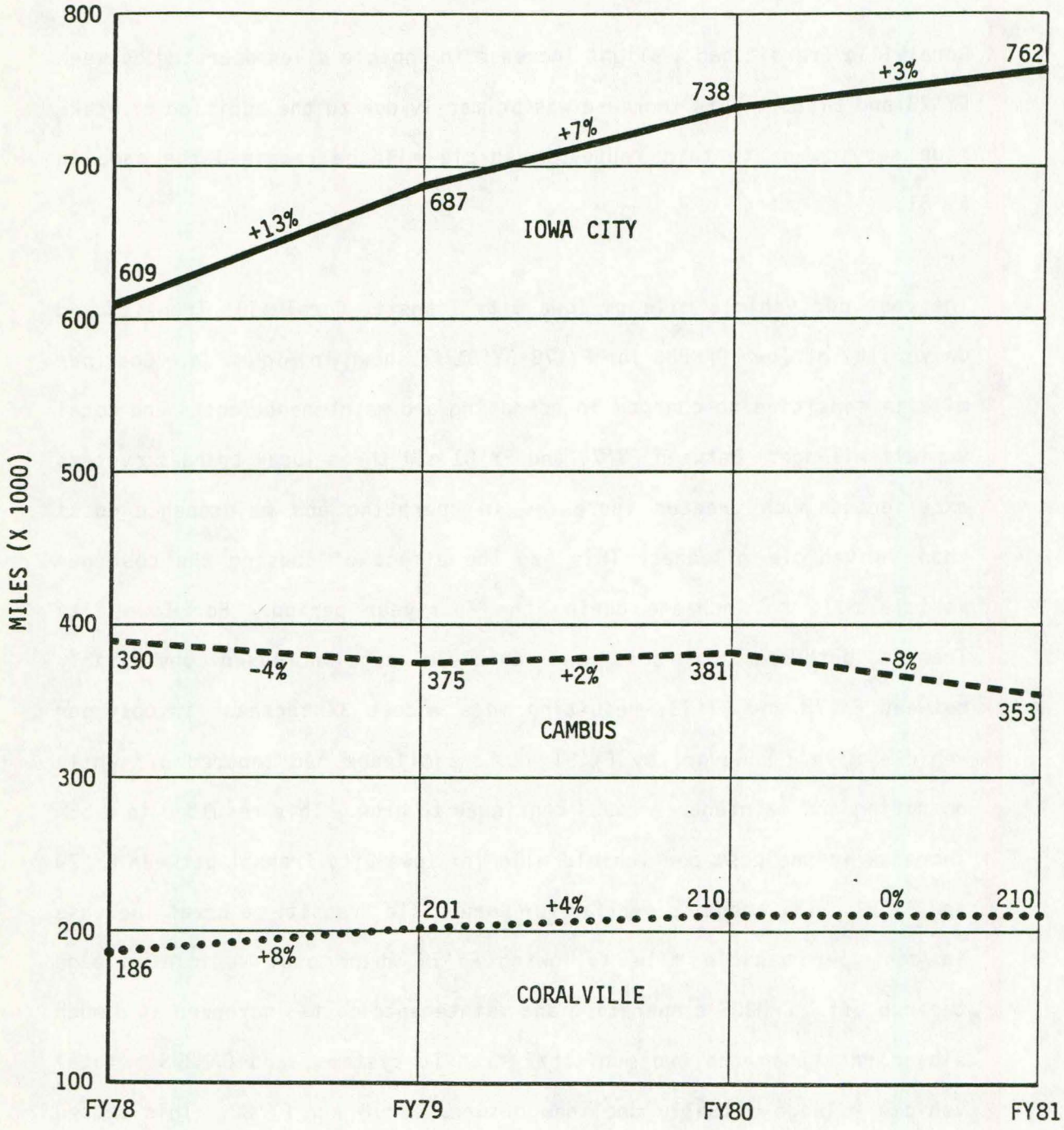
Figure 13 plots annual vehicle miles of Iowa City Transit, Coralville Transit, and University of Iowa CAMBUS for FY'78 through FY'81. For Iowa City Transit, the trend from FY'78-FY'81 was one of steady increase, continuing a trend which began in FY'75. Iowa City Transit's rise in vehicle miles since FY'78 is primarily due to three factors: special peak-hour routes which are run during part of the year, the evening service which was begun in FY'80, and the major revamping of the route network which occurred in August 1979.

Vehicle miles operated by CAMBUS declined four percent between FY'78 and FY'79, primarily due to only one Interdorm bus being operated by during spring semester of FY'79. In FY'80 an additional bus was added on the Interdorm route, but service was cut back slightly on the Red, Blue and Hawkeye routes. The net result of all this was a 2% increase in vehicle miles during FY'80. Decreases in hours of service and the number of

Figure 13

VEHICLE MILES TRAVELED FY 1978-1981

IOWA CITY TRANSIT
CORALVILLE TRANSIT
UNIV. OF IOWA CAMBUS



vehicles on certain routes led to an 8% reduction in vehicle mileage in FY'81.

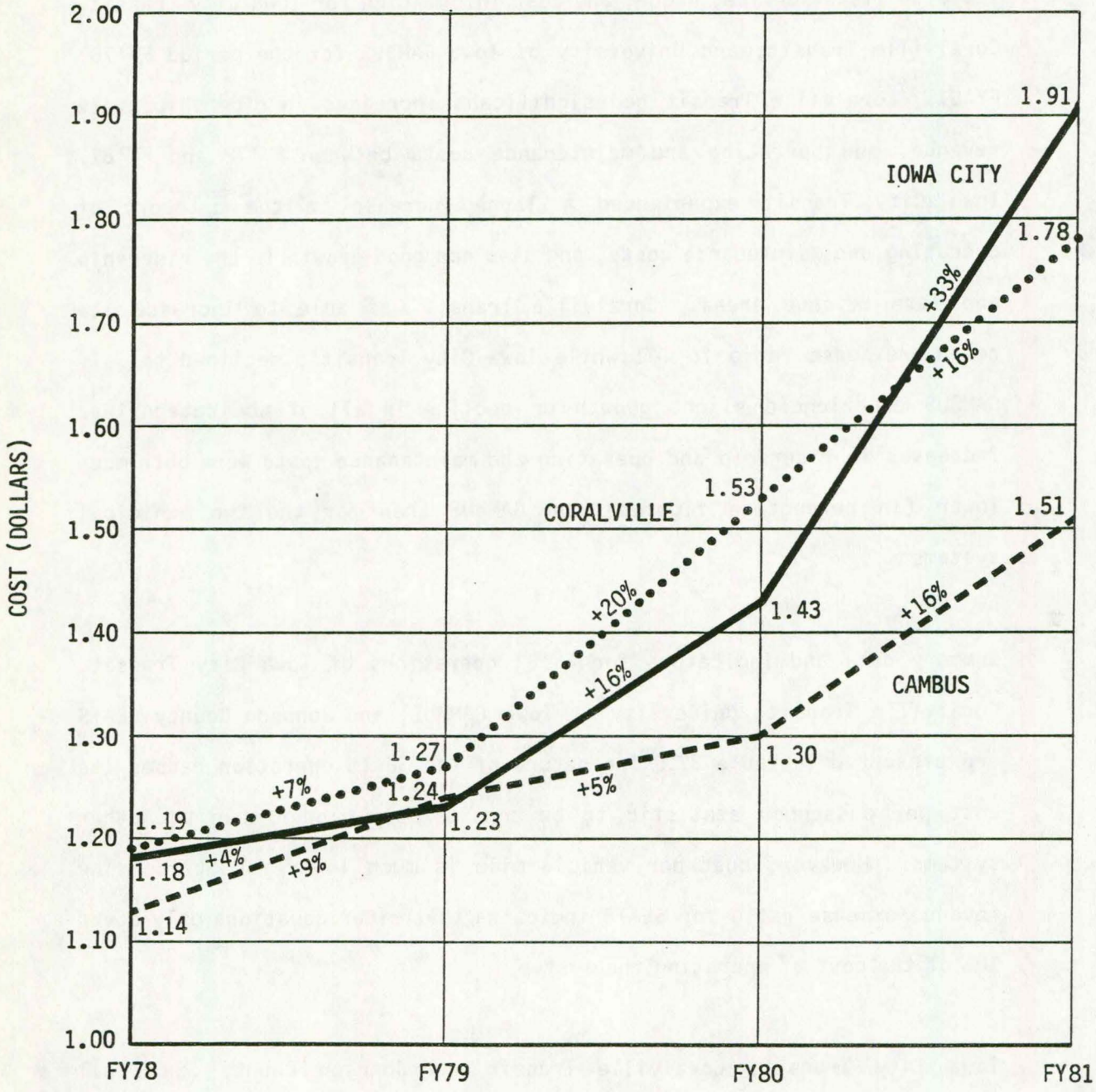
Coralville Transit had a slight increase in vehicle miles operated between FY'78 and FY'80. This increase was primarily due to the addition of peak-hour service on certain routes. Vehicle mileage remained the same in FY'81.

The cost per vehicle mile of Iowa City Transit, Coralville Transit, and University of Iowa CAMBUS for FY'78-FY'81 is shown in Figure 14. Cost per mile is sensitive to changes in operating and maintenance costs and total vehicle mileage. Between FY'78 and FY'81 all three local transit systems experienced much greater increases in operating and maintenance costs than in vehicle mileage. This had the effect of causing the cost per vehicle mile to increase during the four-year period. For Iowa City Transit, both operating costs and vehicle mileage increased considerably between FY'78 and FY'79, resulting in a modest 3% increase in cost per vehicle mile. However, by FY'81 vehicle mileage had tapered off while operating and maintenance costs continued to grow. This resulted in a 55% increase in the cost per vehicle mile for Iowa City Transit between FY'79 and FY'81. The trend is similar for Coralville Transit: a great increase in cost per vehicle mile following FY'79 when total vehicle mileage tapered off. CAMBUS's operating and maintenance costs increased at a much slower rate than the two municipal transit systems, and CAMBUS's total vehicle mileage actually declined between FY'78 and FY'80. This caused the cost per vehicle mile for CAMBUS to increase at a slower rate than Iowa City Transit or Coralville Transit. The cost per vehicle mile for

Figure 14

COST* PER VEHICLE MILE FY 1978-1981

IOWA CITY TRANSIT
CORALVILLE TRANSIT
UNIV. OF IOWA CAMBUS



* Does not include expenses for capital, or specialized elderly and handicapped transportation service.

CAMBUS is consistently lower than the two municipal systems because CAMBUS is able to utilize student labor for most of their positions.

Table 36 lists service, usage, and cost information for Iowa City Transit, Coralville Transit, and University of Iowa CAMBUS for the period FY'78-FY'81. Coralville Transit had significant increases in ridership, fare revenue, and operating and maintenance costs between FY'78 and FY'81. Iowa City Transit experienced a large increase in the category of operating and maintenance costs, and also had good growth in the ridership and fare revenue areas. Coralville Transit was able to increase its revenue/expense ratio to .41 while Iowa City Transit's declined to .41. CAMBUS experienced slight growth or decline in all of the categories. Increases in ridership and operating and maintenance costs were both much lower (in percentage figures) for CAMBUS than for the two municipal systems.

Summary data and indicators for FY'81 operations of Iowa City Transit, Coralville Transit, University of Iowa CAMBUS, and Johnson County SEATS are presented in Table 37. The nature of the SEATS operation causes its cost per passenger statistic to be considerably higher than the other systems. However, cost per vehicle mile is much lower for SEATS. The revenue/expense ratio for SEATS indicates that rider donations only cover 10% of the cost of operating the system.

Iowa City Transit, Coralville Transit and Johnson County SEATS all participate in the Uniform Data Management System (UDMS), which is administered at the state level by the Iowa Department of Transportation

(IDOT). Besides being required of all recipients of State Transit Assistance, UDMS also fulfills Federal Section 15 reporting requirements. Financial and non-financial information is submitted to IDOT on a quarterly basis, where it is processed into various statistics and performance measures.

TABLE 36
COST AND USAGE CHANGES, FY78-FY81
IOWA CITY TRANSIT, CORALVILLE TRANSIT, U OF I CAMBUS

DATA INDICATOR	IOWA CITY TRANSIT			CORALVILLE TRANSIT			U OF I CAMBUS		
	FY78	FY81	% CHANGE	FY78	FY81	% CHANGE	FY78	FY81	% CHANGE
Ridership (000's)	1521.2	2105.8	38.4	283.4	486.6	71.7	2543.6	2610.2	2.6
Fare Revenue (000's)	340.7	601.4	76.5	74.0	151.8	105.1	0	0	0
Average Fare	.22	.29	31.8	.26	.31	19.2	0	0	0
Operating & Maintenance Cost (000's)*	743.7	1454.9	95.6	225.0	373.4	66.0	446.0	535.2	20.0
Vehicle Miles (000's)	609.4	761.8	25.0	186.3	210.0	12.7	389.9	353.5	-10.3
Vehicle Hours (000's)	56.0	65.9	17.7	15.6	16.9	8.3	NA	NA	NA
O & M Cost Per Ride	.49	.69	40.8	.79	.77	-2.8	.18	.21	16.6
O & M Cost Per Mile	1.22	1.91	56.6	1.20	1.78	48.3	1.14	1.51	32.4
O & M Cost Per Hour	13.28	22.06	66.1	14.42	22.09	53.2	NA	NA	NA
Revenue/Expense Ratio	.46	.41	-12.2	.33	.41	24.2	0	0	0
Rides Per Vehicle Mile	2.50	2.76	10.4	1.52	2.23	46.7	6.52	7.38	-13.2

*Includes all costs except capital and specialized elderly and handicapped transportation service.

TABLE 37
SUMMARY DATA
IOWA CITY TRANSIT, CORALVILLE TRANSIT, U OF I CAMBUS, JOHNSON COUNTY SEATS
FY81 OPERATIONS

DATA INDICATOR	IOWA CITY TRANSIT	CORALVILLE TRANSIT	U OF I CAMBUS*	JOHNSON COUNTY SEATS
Ridership	2,105,790	486,626	2,610,172	43,431
Operating & Maintenance Cost**	1,454,882	373,376	535,248	123,914
Fare Revenue	601,369	151,836	0	12,042
Operating Deficit	853,513	221,540	535,248	111,872
Vehicle Miles	761,766	210,000	353,463	133,789
Vehicle Hours	65,936	16,900	NA	12,207
O&M Cost Per Passenger	.69	.77	.21	2.85
Average Fare/Donation	.29	.31	0	.28
Operating Deficit Per Trip	.40	.46	.21	2.57
O&M Cost Per Vehicle Mile	1.91	1.78	1.51	.93
O&M Cost Per Vehicle Hour	22.06	22.09	NA	10.15
Revenue/Expense Ratio	.41	.41	0	.10
Average Trip Length***	2.2	3.8	NA	NA
Passenger Miles	3,923,733	1,849,179	NA	NA
Seat Miles of Service	34,439,841	8,850,000	14,491,983	1,485,058
Rides Per Vehicle Hour	31.9	28.8	NA	3.56
Rides Per Vehicle Mile	2.76	2.32	7.38	.32
Rides Per Capita****	41.7	63.3	NA	.53
Vehicle Miles Per Capita****	15.1	27.3	NA	1.64

*Not including Bionic Bus.
**Includes all costs except capital and E&H contracts.
***Calculated using UDMS sampling technique.
NA - Not Available

****Using 1980 Census Information:
Iowa City: 50,508
Coralville: 7,687
Johnson County: 81,717

VI COMPARISON - LOCAL / STATE TRANSIT SYSTEMS

VI. A Comparison of Local Transit with Other Iowa Transit Systems

Fixed Route Service

Operating statistics for all public fixed route transit systems in Iowa are collected by the Public Transit Division of the Iowa Department of Transportation (IDOT). There are 17 fixed route public transit systems which operate in the State of Iowa. They are divided into seven large urban systems which operate in cities with populations of 50,000 or more, and ten small urban systems which are based in cities of less than 50,000. Table 38 shows this division between small urban and large urban. Eight indicators of comparative performance for the 17 systems are shown in Tables 39-44. These indicators are based on data received from IDOT for fiscal year 1980, which is the most recent available. Where appropriate, statistics for the University of Iowa CAMBUS system have been included in the tables. Information for the three Iowa City metropolitan area systems is also combined to form a sum total for the urban area and allow a more equal comparison with indicators from other urban areas.

Table 39 indicates that the Iowa City-Coralville urban area had the best used transit systems in Iowa during FY80. The urban ridership per capita for the three Iowa City metro area systems was 138% greater than the next highest urban area (Des Moines). Ridership per capita for Iowa City Transit was more than twice the state average of 15.77, and Coralville Transit was more than four times as great.

TABLE 38
IOWA TRANSIT OPERATING STATISTICS
DIVISION BETWEEN LARGE URBAN & SMALL URBAN TRANSIT SYSTEMS

Large Urban	Population
Cedar Rapids	137,140
Council Bluffs	62,570
Davenport	98,836
Des Moines	249,176
Dubuque	61,738
Sioux City	95,937
Waterloo	105,000

Small Urban	Population
Ames	44,700
Bettendorf	24,290
Burlington	32,444
Clinton	36,312
Coralville	6,605
Iowa City	47,774
Marshalltown	26,506
Mason City	31,839
Muscatine	23,151
Ottumwa	30,312

TABLE 39

IOWA TRANSIT OPERATING STATISTICS

Ridership Per Capita - FY80

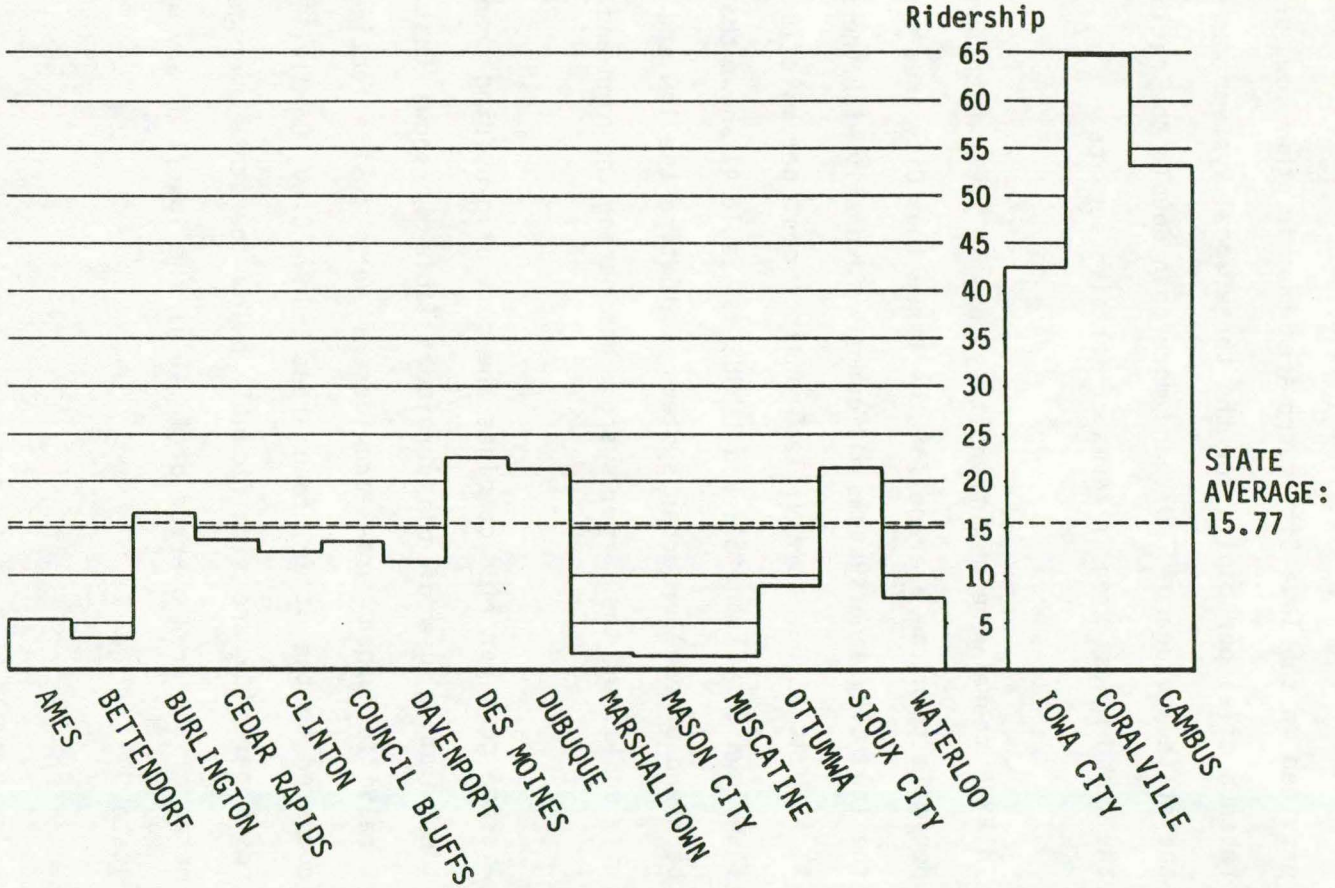


Table 40 shows that considerably more transit service per capita is provided in the Iowa City metro area than in other Iowa urban areas. FY80 revenue miles per capita for the three local systems was more than triple the state average of 7.97, and more than double the ratio in Burlington, the next highest area in terms of relative service.

In FY80 there were six transit systems in Iowa which had a cheaper cost per mile than the average for the three Iowa City area systems. However, the Iowa City area systems all compare favorably with the state average of $1.71. At $1.56, Coralville Transit's cost per mile is somewhat higher than Iowa City Transit's and CAMBUS's. Table 41 shows that there seems to be trend of smaller urban systems dominating the low end of the cost per mile scale, and the larger systems dominating the high end.

Average cost per ride combines the cost of providing transit service and the relative use of the service. Table 42 shows that the Iowa City-Coralville urban area provides a very cost-effective service when compared to the other urban areas. Iowa City, Coralville, and CAMBUS's costs per ride are significantly below the state average of $ .87. The metropolitan area average of $ .40 is the lowest of any urban area in the state.

A low fare will tend to encourage people to use transit. Table 42 also illustrates that Iowa City Transit had an average fare lower than all but two urban areas in Iowa during FY80. Coralville Transit's average fare of $ .30 was slightly below the state average of $ .33. University of Iowa CAMBUS is unique in that it does not charge a fare.

TABLE 40

IOWA TRANSIT OPERATING STATISTICS

Revenue Miles Per Capita - FY80

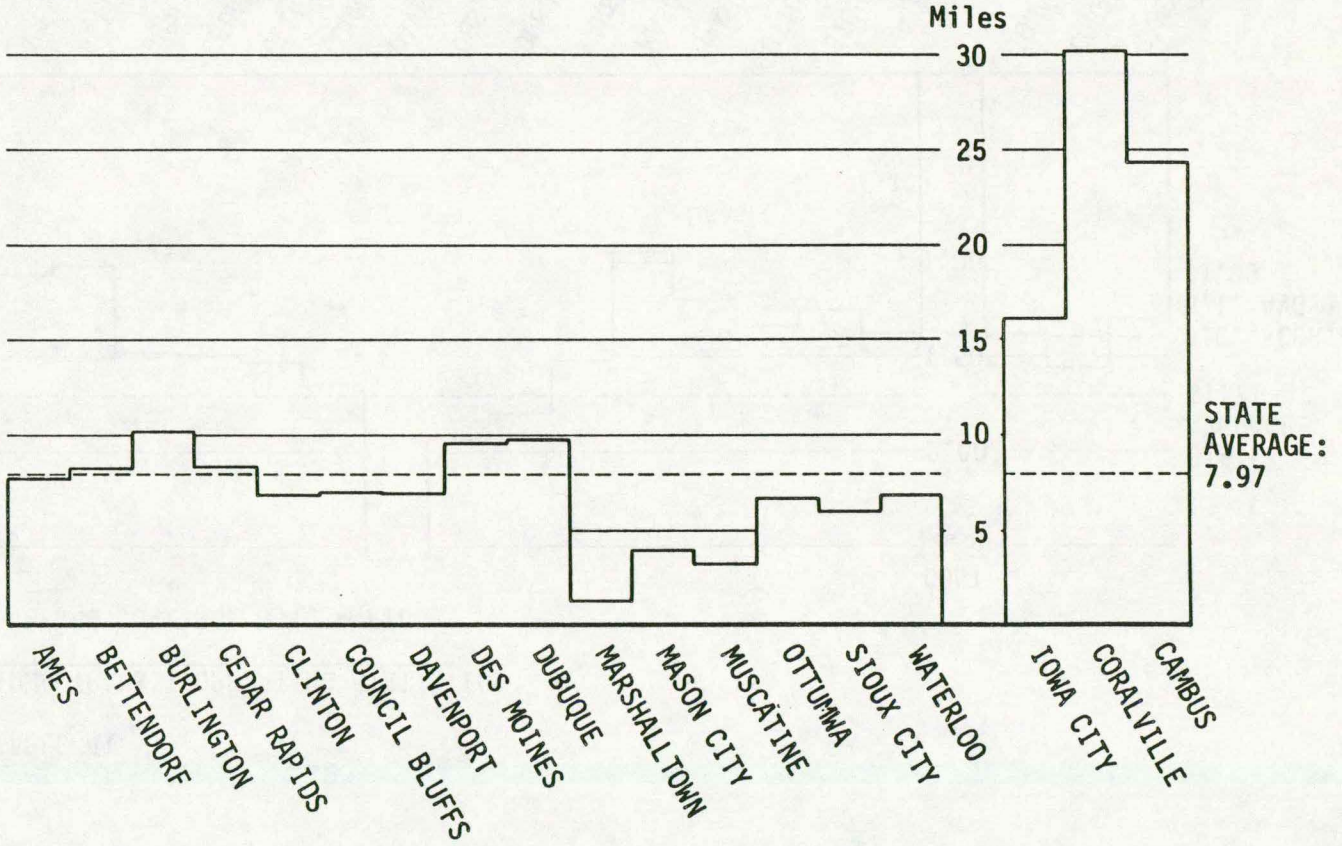


TABLE 41

IOWA TRANSIT OPERATING STATISTICS

Average Cost Per Mile - FY80

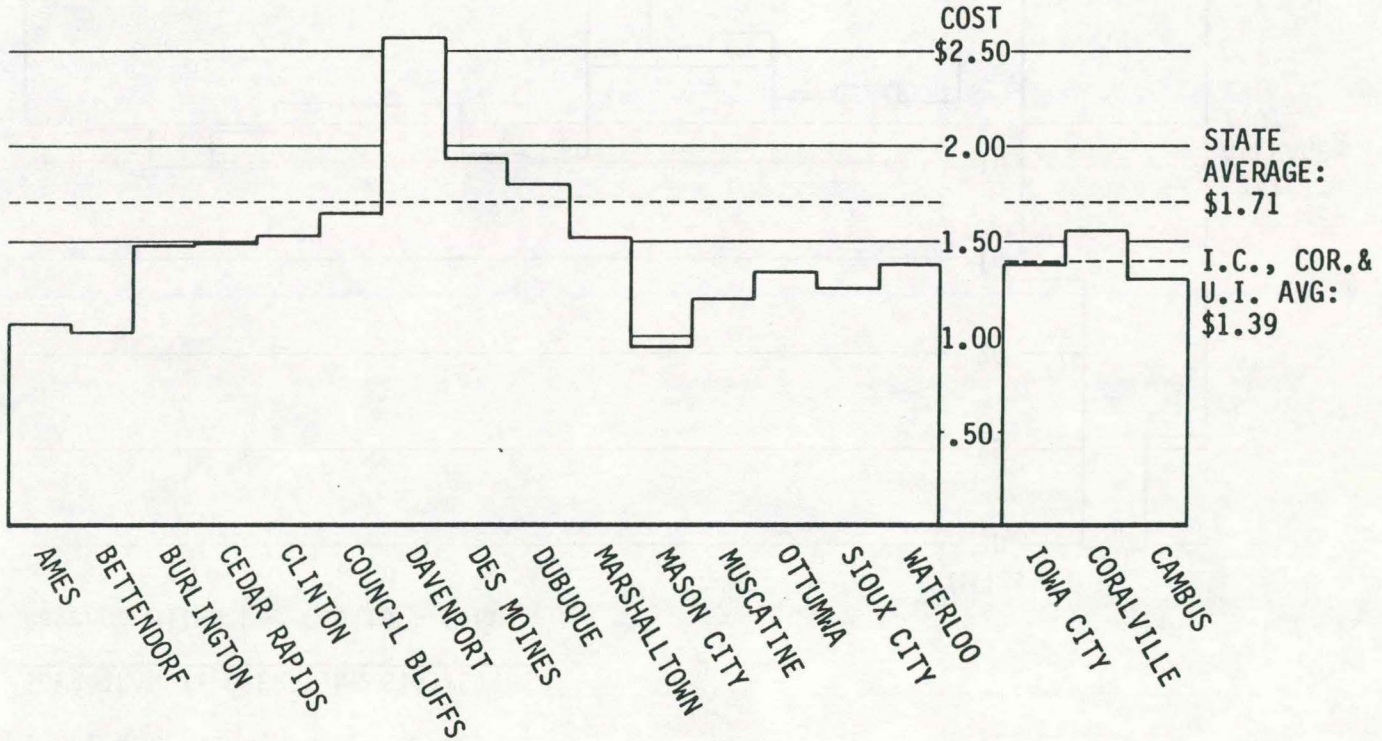
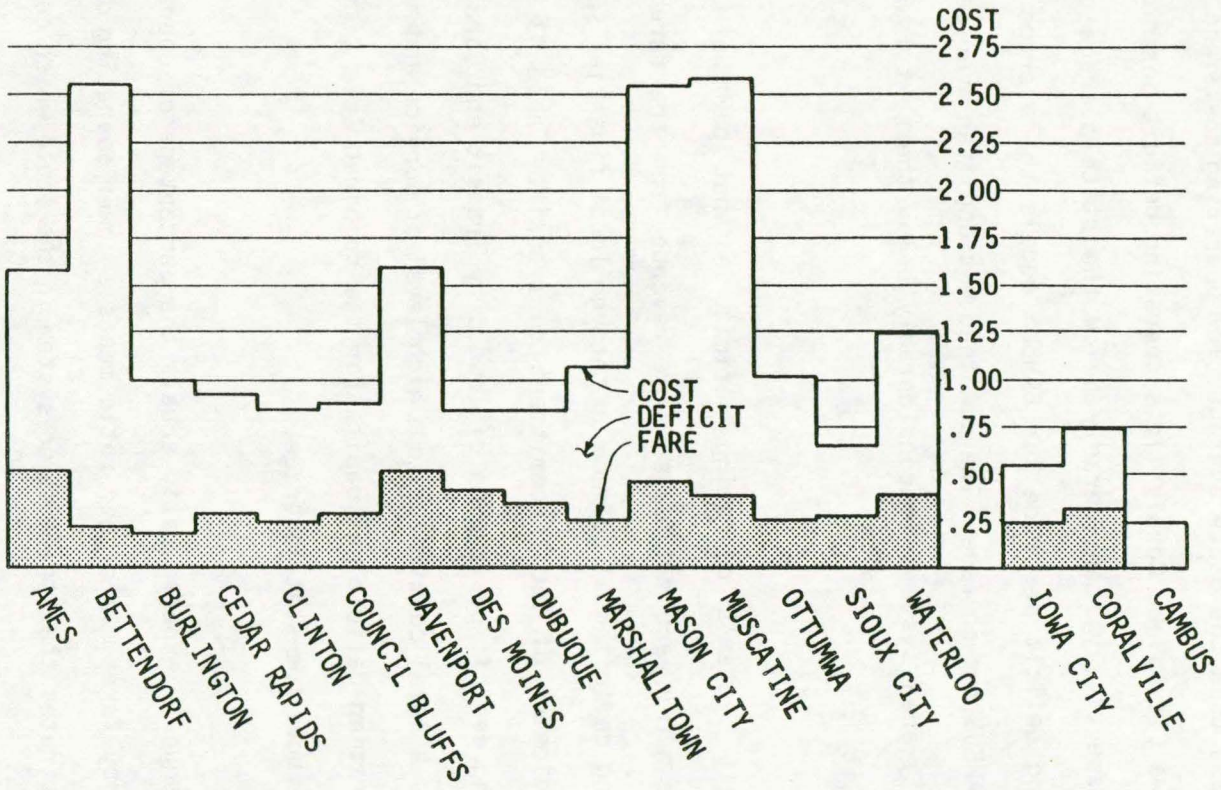


TABLE 42

IOWA TRANSIT OPERATING STATISTICS

Average Cost, Average Fare, and Average Deficit Per Ride - FY80



FOR ALL SYSTEMS:

Average Cost Per Ride	$.87
Average Fare Per Ride	.33
Avg. Deficit Per Ride	$.54

FOR IOWA CITY-AREA SYSTEMS:

Average Cost Per Ride	$.40
Average Fare Per Ride	.13
Avg. Deficit Per Ride	$.27

Operating deficit per ride is equal to the average cost per ride minus the average fare. Table 42 shows that although the local area maintained fares less than the state average, low operating costs and high ridership kept Iowa City's and Coralville's operating deficit per ride ($ .31 and $ .43, respectively) considerably below the state average of $ .54. The operating deficit per ride for CAMBUS equals the average cost per ride since CAMBUS has no fare. The combined metropolitan average for the three Iowa City-area systems is considerably below the next lowest urban area (Sioux City).

A transit system's operating deficit is that part of its operating expenses which are not covered by revenue from the farebox. Since an operating deficit must be made up through local financial support, it is a good indicator of local commitment to transit. Table 43 shows that the operating deficit per capita of Iowa City Transit and Coralville Transit reflects a local commitment to a high level of service and moderate fares. The operating deficit per capita for the combined Iowa City area systems is 173% above the state average.

The revenue to expense ratio equals the percentage of operating expenses covered by fares. A higher ratio means a lower operating deficit. Table 44 illustrates that there is no system in the state which covers even half of its operating expenses by fare revenue. Iowa City Transit and Coralville Transit are both well above state average of .38 in this category. Because CAMBUS has no fare on its system, the local urban area revenue/expense ratio is below the state average.

TABLE 43

IOWA TRANSIT OPERATING STATISTICS

Operating Deficit Per Capita - FY80

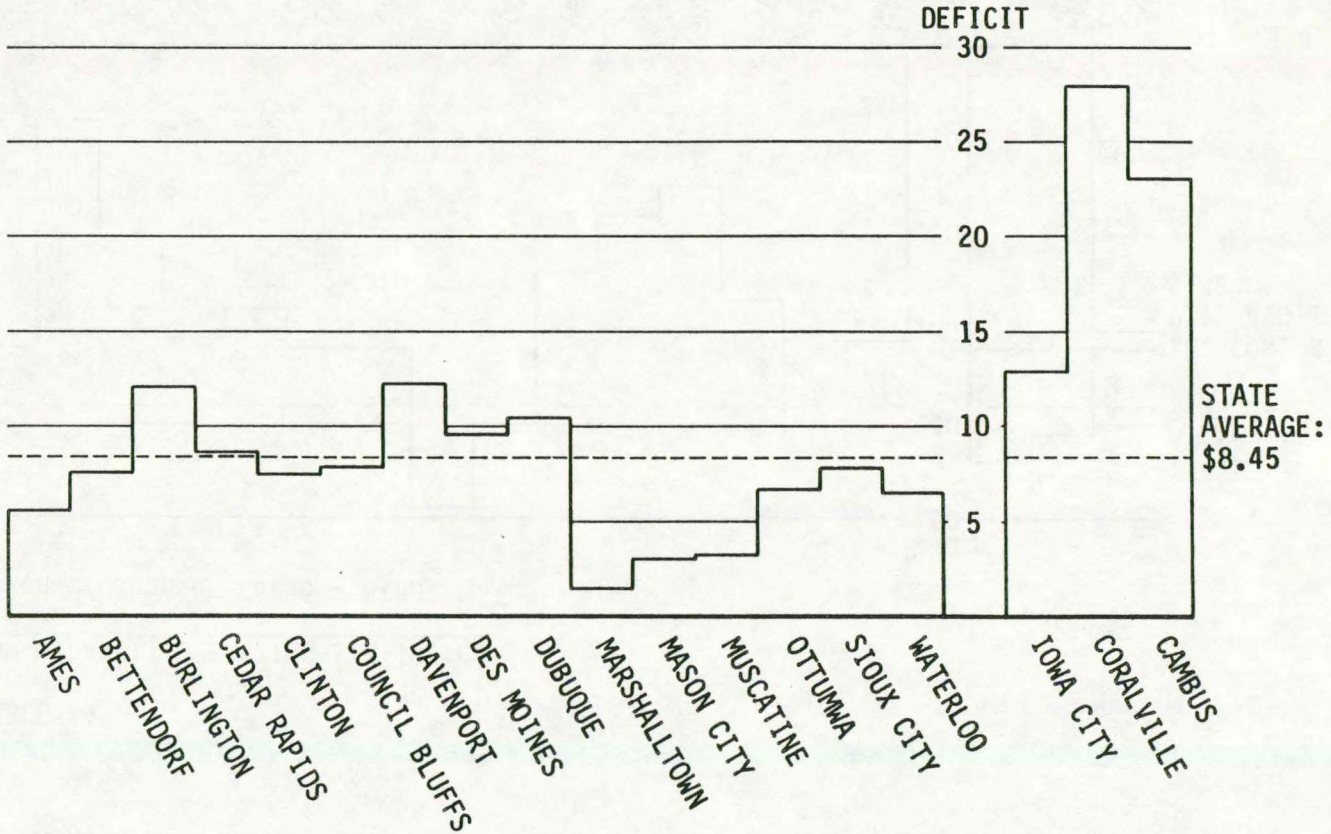
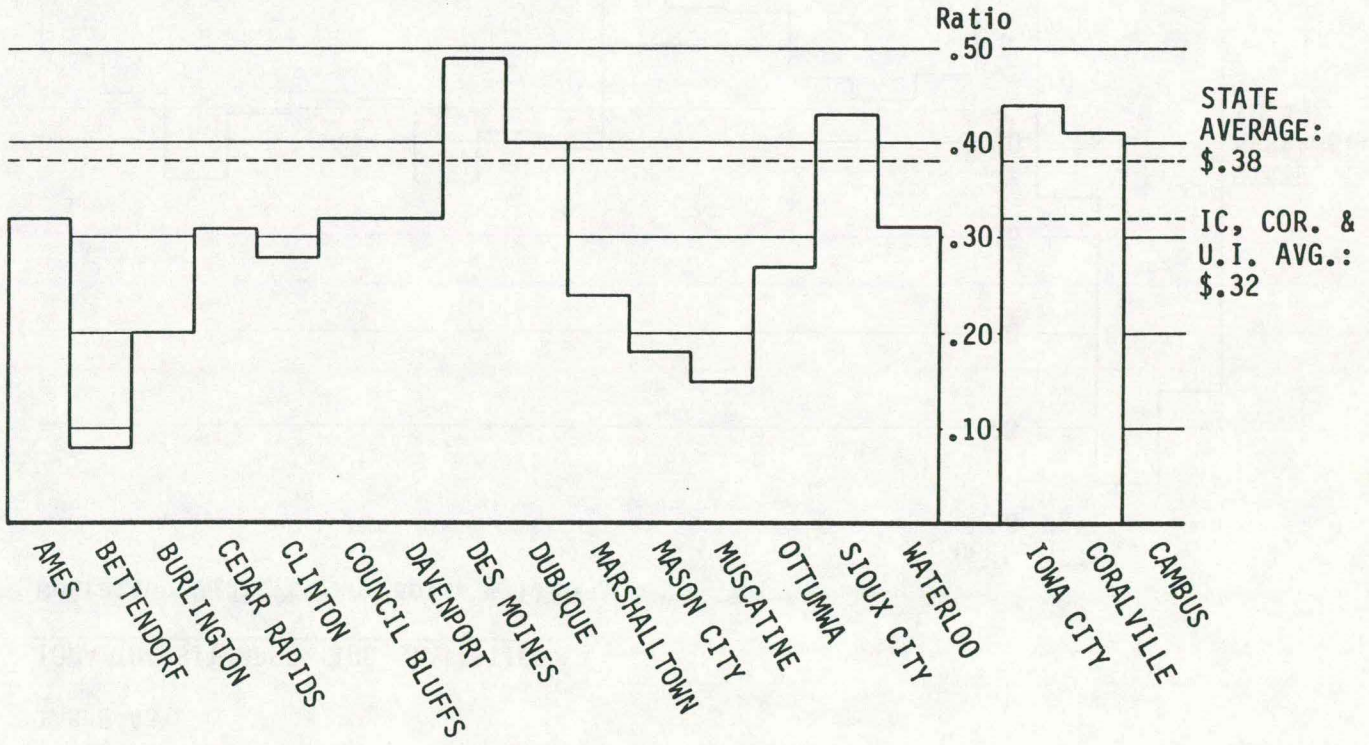


TABLE 44

IOWA TRANSIT OPERATING STATISTICS

Revenue/Expense Ratio - FY80



Demand Responsive Service

Regional transit systems are administered by one agency within each of the 16 regional planning areas shown in Figure 15. Johnson County SEATS is one of six regional transit systems in Region 10, which is administered by the East Central Iowa Council of Governments.

The Iowa Department of Transportation Public Transit Division provides operating statistics for the 16 regional systems, which are shown in Table 45. It appears that Region 10 (Benton, Iowa, Johnson, Jones, Linn, and Washington Counties) has the most efficient regional transit system in the state. Each of these six counties has a van system similar to Johnson County SEATS, but varying in size according to population. Table 45 shows that Region 10, besides offering the highest amount of service per capita, also enjoys the lowest cost per ride, the lowest operating deficit per ride and per capita, and the highest revenue/expense ratio.

FIGURE 15

IOWA TRANSIT REGIONS

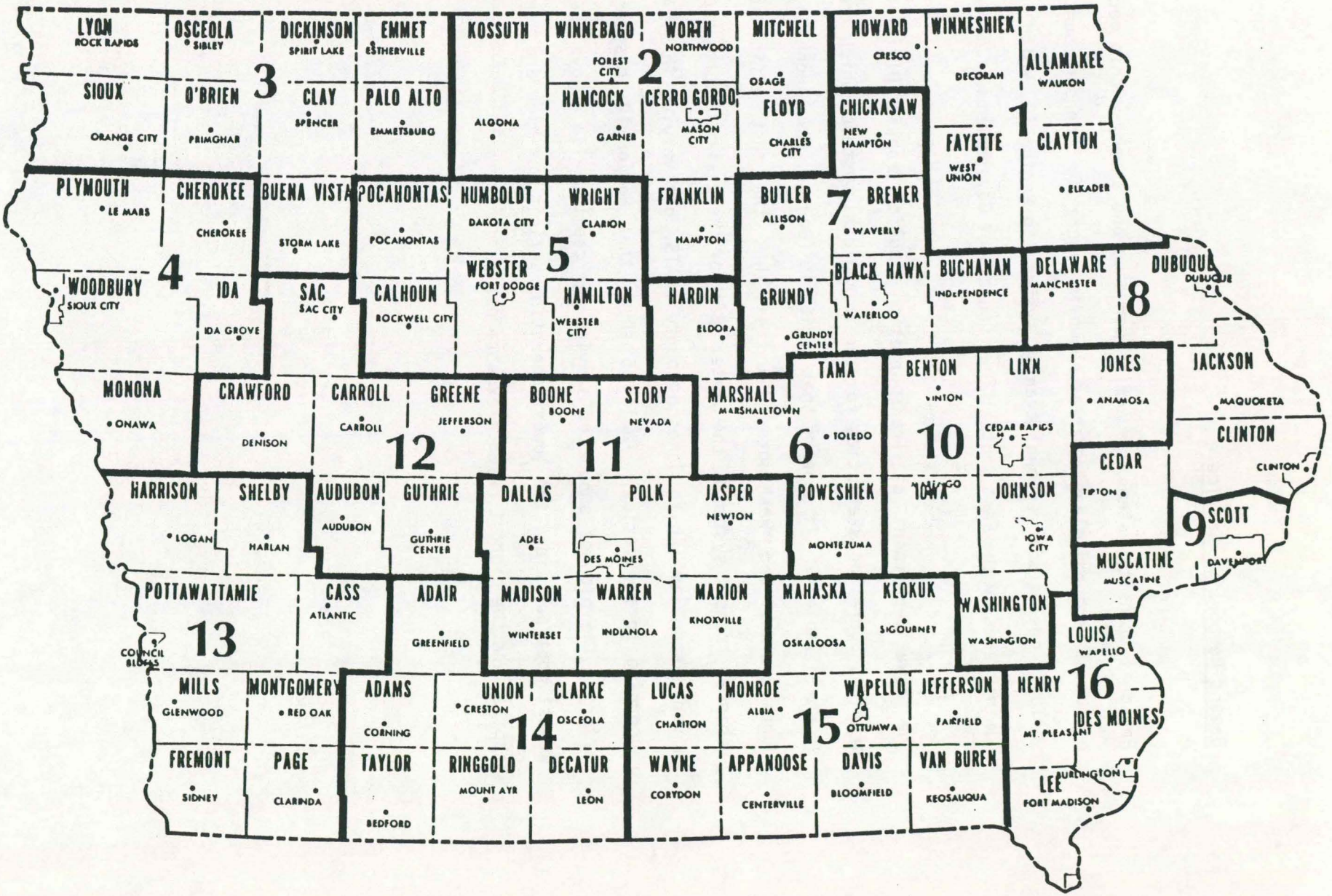


TABLE 45
1980 REGIONAL TRANSIT OPERATIONS
COMPARATIVE STATISTICS

Region	Ridership per Capita	Revenue Miles per Capita	Cost per Mile	Cost per Ride	Average Fare	Operating Deficit per Ride	Operating Deficit per Capita	Revenue/Expense Ratio
1	.79	2.99	.61	2.29	1.72	.56	.44	.75
2	.69	1.96	.64	1.82	.60	1.22	.85	.33
3	.93	1.97	.93	1.97	.78	1.19	1.11	.40
4	1.17	1.68	1.27	1.82	.74	1.08	1.28	.41
5	1.02	1.18	2.43	2.81	.77	2.04	3.02	.28
6	.67	3.33	.52	2.57	.51	2.06	1.40	.20
7	.23	1.39	.67	4.01	1.18	2.83	.66	.29
8	.98	2.94	.90	2.68	.14	2.54	2.50	.05
9	.36	.85	1.90	4.45	1.30	3.15	1.15	.29
10	2.37	5.38	.62	1.40	1.24	.16	.39	.88
11	.99	2.68	.82	2.21	1.46	.75	.75	.66
12	.43	.57	1.19	1.57	.59	.97	.43	.38
13	1.05	3.45	1.05	3.44	.63	2.81	2.96	.18
14	2.48	4.22	1.09	1.84	.44	1.40	3.50	.24
15	1.69	5.30	.67	2.09	1.30	.78	1.32	.63
16	.58	1.33	1.06	2.42	.19	2.23	1.31	.08
Average	1.01	2.52	.85	2.11	.97	1.15	1.15	.46

VII OFFICES, FACILITIES

VII. General Office, Storage, and Maintenance Facilities

Figure 16 shows the location of the general office, storage, and maintenance facilities of Iowa City Transit, Coralville Transit, University of Iowa CAMBUS, and Johnson County SEATS. Coralville Transit is the only property which has all of its operations concentrated at a single location. The following is a brief description of the facilities at each transit property.

Iowa City Transit

The Iowa City Transit bus garage is located at 1306 Gilbert Court in Iowa City. This building was constructed in 1963 and contains a total of 12,800 square feet of space under its roof. Iowa City Transit moved into this facility shortly after the City took over operation of the city bus system in 1971. All general office, storage, and maintenance functions for Iowa City Transit take place in this building, with the exception of certain non-routine maintenance and parts storage which is handled at the City Service Building located at Highway 6 and Riverside Drive, Iowa City.

Iowa City Transit's maintenance arrangement is somewhat unique. The four mechanics who work for Iowa City Transit are not employees of the Transit System, but are employed by the City Equipment Division which is located at the Service Building. Although these four mechanics work at the bus garage, parts storage for the buses is at the Service Building, except for some routine items such as filters and light bulbs which are kept at the bus garage. The parts storage area at the bus garage measures approximately 6' X 20', so only a small

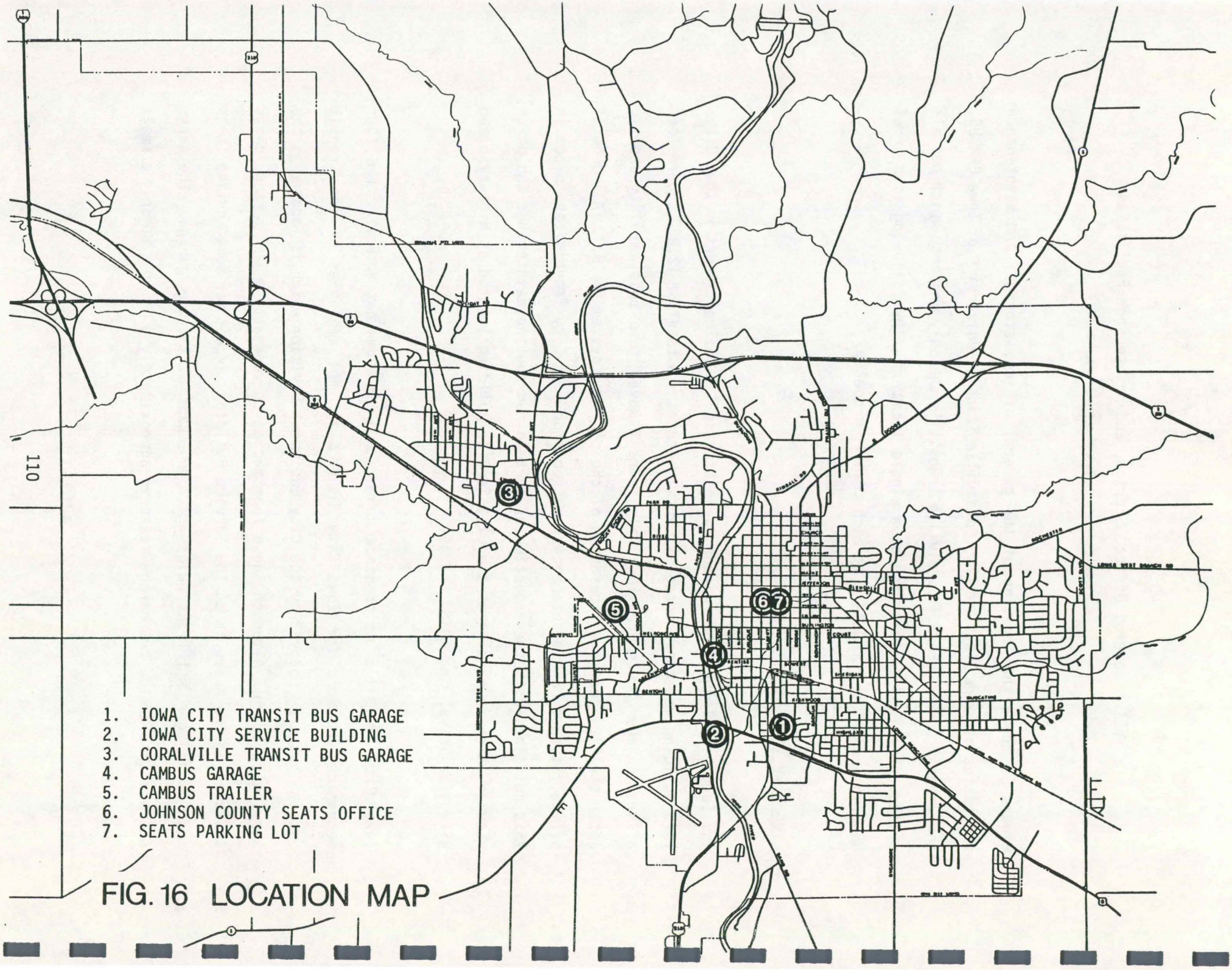


FIG. 16 LOCATION MAP

number of parts can be kept on hand in the maintenance area. The maintenance area of the bus garage is not physically separated from the bus storage area. In one corner of the building is a single mechanic's pit and the parts and tool storage area. There are no hydraulic lifts, no body work or paint shop facilities, no machine shop facilities and an inadequate locker room and break area for the mechanics.

The Service Building contains most equipment for doing major repairs on the transit coach components, including a machine shop, test equipment, and a general parts inventory. There are two repair categories which are contracted out: body work and painting, which is done by a local firm, and major engine overhauls, which are sent to Des Moines. Tire work is also contracted out at the present time, however, the Equipment Division is in the process of acquiring a tire changer which will be used by the transit system.

When the Iowa City Transit bus garage was constructed in 1963 it was designed to store 14 transit coaches, which at that time measured 32 feet long. At the present time Iowa City Transit is storing 19 buses in this facility, ranging in size from 35 to 40 feet long. One bus is stored outside. Because of the overutilization of this facility, the original angle parking configuration can no longer be used and the buses must be parallel parked with only inches between them. The buses are cleaned and washed manually in this same area.

The driver locker room, which is used by 46 drivers, is approximately 12' X 15' in size. Adjacent to this locker room is the transit system general office. This office measures approximately 12' X 20' and is used by 5 staff people. On-call drivers also use this office. The Transit Manager has a separate office of

5' X 12' within this area. Above this office/locker room area is a storage space of approximately 20' X 30'.

Based on the current needs of the system, the Iowa City bus garage is an inadequate facility. In terms of size there is presently inadquate space for bus storage, parts storage, office space, employee parking, and locker room facilities. Although 19 buses can physically be stored in the garage, the parallel parking configuration with buses inches from each other has caused numerous minor accidents involving body damage to the coaches, and does not allow each bus to moved independently -- buses must be brought into the garage the night before in the approximate order that they will be leaving the next day. At least one additional mechanic's pit is needed, as is a mechanized washing facility. The driver area and general office area is quite inadequate given the number of people who utilize it. In addition, this area is also used as the farebox and upholstery repair area, and is where farebox revenue is counted. The entire bus garage has a very inefficient heating system. During the winter months a great deal of heat is lost through the front doors and ceiling ventilation system.

It is expected that the arrival of three new buses from Neoplan-USA in May of 1982 will not only exacerbate the present problems, but create some new ones as well. The new vehicles will not have interchangable parts with the present fleet which will cause the parts inventory to mushroom. The new vehicles are larger than the present coaches which will add to the storage difficulties already being felt. At least two buses will have to be kept outside, creating safety and mechanical problems during cold weather. Any addition in the level of service because of this increase in fleet size is expected to add to the general disruption in the office area.

Coralville Transit

The Coralville Transit bus garage is located at 310 3rd Avenue, Coralville. This 6,000 square foot facility was constructed in 1975 and houses the maintenance, storage, and general office functions for Coralville Transit.

The maintenance and storage areas in the Coralville bus garage are physically separated into two different wings of the building. The bus storage area has a capacity of five buses which are parked in a parallel configuration. The maintenance wing has two bays, one with a mechanic's pit. Two coaches are parked in these maintenance bays, allowing Coralville Transit to keep their entire fleet indoors. A service truck, however, must be parked outdoors.

Coralville Transit has one mechanic who performs routine maintenance on the fleet. Engine overhauls, tire work, and transmission work are contracted out. Coralville Transit has no hydraulic vehicle lifts, no machine shop facilities, and no body shop. Although they have painted part of their fleet in-house, they have no formal paint shop. There is a 16' X 24' parts storage area in the bus storage wing of the building. This area is adequate for general parts storage for the present fleet. Lubricants and tires are stored where space permits throughout the garage. Washing and cleaning of vehicles is done manually in the maintenance wing of the bus garage. Washing cannot be done in the storage wing because it does not have floor drain system.

The general office space for Coralville Transit consists of an 8' X 10' room in the maintenance wing of the bus garage. There are no separate locker room facilities for the mechanic, drivers, or maintenance personnel, so this office is headquarters for all of these people plus the Transit Manager.

The Coralville Transit bus garage is fairly adequate in terms of the current needs of the system. The most pressing need is for additional office space and separate quarters for the drivers. The distractions of the present office make it difficult for the Transit Manager to complete any tasks requiring much concentration.

In spite of the fact that the Coralville bus garage is a relatively new facility, the recent rapid growth of Coralville Transit has resulted in this facility already being overutilized. With the arrival of two new transit coaches from Neoplan-USA in May of 1982, serious capacity problems are expected. Two coaches will have to be kept outside in an unprotected area adjacent to the garage. Besides the mechanical and safety problems which can be expected when diesel vehicles are kept outdoors in cold weather, Coralville Transit has already experienced vandalism to vehicles stored outdoors. In addition, the Neoplan coaches are mechanically different from the present fleet and will require a considerable increase in the parts inventory, for which space is already at a premium.

University of Iowa CAMBUS

The CAMBUS garage is located at 517 South Madison Street in Iowa City. This nine-year old facility has 9600 square feet of space and houses the maintenance and storage functions of University of Iowa CAMBUS. The CAMBUS general offices are housed at the CAMBUS trailer located at the Kinnick Stadium parking lot.

CAMBUS employs two full-time mechanics and five part-time maintenance people at its maintenance and storage garage. The garage is a single large room with a

center floor drain running the length of the building, and a 400 square foot parts storage area partitioned off at one end. There is no physical separation between the bus storage and maintenance areas. There is a single pit bay in the mechanics area located in the northwest corner of the building. CAMBUS performs much of its own mechanical maintenance, including routine repairs and tune-ups, partial engine overhauls, and tire work. Besides the fixed route fleet, CAMBUS mechanics also maintain the two Bionic Buses, including repairs to the wheelchair lifts. The CAMBUS garage has no hydraulic lifts, bodywork and paint shop, or machine shop facilities. In addition to the parts storage area, tires and lubricants are stored along the wall throughout the garage. Because of the unique design of transit vehicles, there are virtually no parts that CAMBUS can purchase in bulk with the University of Iowa motor pool. More common materials such as fuel, antifreeze and office supplies are purchased in bulk with the University. Buses are cleaned and washed manually inside the bus garage. In one corner of the garage is a break and locker room area for the maintenance employees.

Design capacity for bus storage in the CAMBUS garage is 13 in an angle parking configuration. By also utilizing the mechanics pit bay CAMBUS is able to store twelve full-size coaches plus the two Bionic Buses and still retain the angle parking configuration. Two full-size coaches are stored outside next to the garage in an unprotected area. 12+2+2

The CAMBUS Trailer is nine years old and was acquired by CAMBUS in 1975. It is a 14' X 50' mobile home trailer which has been converted into the CAMBUS general offices. It is located at an on-route layover point for all CAMBUS routes except two. The trailer is separated into three sections: a central

dispatching office, a driver's room, and the transit manager's office. This facility is also where most CAMBUS records and files are kept.

The CAMBUS general office and storage and maintenance facilities are reasonably adequate for the present needs of the system. The most obvious need is for some protection for the two coaches which must sit out next to the building. At the present time these two coaches are the two oldest in the fleet and rarely used. However, with the arrival in 1982 of two new transit coaches from Neoplan-USA these two older coaches will be sold and two newer vehicles stored outside in their place. Having vehicles stored outside in cold weather may cause significant mechanical and safety problems, as well as the threat of vandalism.

Two future needs are seen as being significant for the CAMBUS system. The first is the general office trailer. Although this facility serves the system reasonably well, it is simply wearing out. It is considered of paramount importance by CAMBUS personnel that any new facility remain at the present location and not be incorporated into the storage and maintenance garage.

The second future need is in the area of maintenance. As the age of the CAMBUS fleet begins to get older, more major overhaul work will be necessary. The present mechanics have the skills to do major overhaul work such as engines and transmissions, but lack some of the necessary equipment. The CAMBUS transit manager has expressed interest in expanding this area of the operation so that more major overhaul work could be done in-house.

Johnson County SEATS

The nature of the SEATS system is quite different from the other three area transit systems, and this difference is reflected in the SEATS general office, storage, and maintenance facilities.

There is no SEATS maintenance facility. For both routine and non-routine maintenance the vans are taken to various mechanics and service stations in the local area. Cleaning and washing of the SEATS vehicles is handled by the drivers and the SEATS manager on an "as needed" basis. There is also no SEATS vehicle storage facility. The vans are stored at an outdoor parking lot at the Iowa City Civic Center. All of the vans are equipped with engine block heaters.

The SEATS general office is located in the Iowa City Senior Center, 28 South Linn Street, Iowa City. This 270 square foot office space is the central dispatching facility for the SEATS system and is the SEATS manager's office. This office is also used by the drivers, as there is no formal drivers quarters. The boiler room in the Senior Center is used by the SEATS system to store tires, lubricants, and other miscellaneous.

The SEATS general office is adequate for the current needs of the system. The only element it lacks is a separate space for drivers to use. The most glaring needs for the SEATS system are in the areas of vehicle storage and maintenance. The major problem with the present storage area is, of course, that it is completely outdoors. During cold weather this arrangement causes numerous problems in the operation, cleaning, and maintenance of the SEATS vans. There are also no electrical outlets in the parking area, so the engine block heaters cannot be used. The present arrangement of contracting out all mechanical maintenance is working satisfactorily, but it is possible that this could be

done for less cost if there was some in-house arrangement for at least routine maintenance.

VIII OUTLOOK FOR FUTURE FUNDING

VIII. Outlook for Future Funding

Introduction

Sources of transit funding exist at all levels of government - federal, state, local; as well as the individual user. Two events have occurred over the past two years which have altered the outlook and created uncertainty regarding transit funding. First, in 1980 Ronald Reagan was elected President and brought with him a new program of federalism which calls for curtailing many federal transit assistance programs. Second, as a result of the 1980 Census the United States Bureau of the Census has designated the Iowa City-Coralville area an official Urbanized Area. This designation alters the area's eligibility for several funding programs. The following sections will describe the current outlook for transit funding at each of these levels.

Federal Transit Assistance

As mentioned previously, the outlook for federal funding is changing dramatically as a result of the Reagan Administration and Urbanized Area status. At the time of writing this report the outlook remains uncertain.

In FY82 Iowa City and Coralville received federal transit operating assistance for the first time. This assistance was from the program

contained in Section 18 of the Urban Mass Transit Act of 1964, as amended. This section was added to the UMT Act by the Surface Transportation Assistance Act of 1978. Section 18 funds are available to any rural or small urban area of less than 50,000 population. Previous to the FY82 operating grants, both Iowa City and Coralville received capital assistance from Section 18 for the purchase of transit coaches, bus shelters, and mobile radio equipment. The University of Iowa CAMBUS system has not been viewed by the Iowa Department of Transportation, the administering agency in Iowa, as being eligible to receive Section 18 funds.

Johnson County SEATS has also received both operating and capital assistance from the Section 18 program. The SEATS Section 18 funds are applied for through the East Central Iowa Council of Governments as a portion of their multi-county regional transit system.

Because of this area's recent urbanized designation, the local transit systems are shifting from the Section 18 program to the Urban Mass Transportation Administration Section 5 program. Congress has passed legislation which calls for new Urbanized Areas such as Iowa City to receive in FY83 a six month allocation of Section 18 and a six month allocation of Section 5 funds. Subsequent years of federal transit operating assistance for this area will be solely from the Section 5 program.

Section 5 funds, like Section 18, are available for either operating or capital assistance. The total amount available to the Iowa City

area is based upon this area's population and population density as compared to all other Urbanized Areas in the United States. However, unlike the Section 18 funds, a lump sum of Section 5 funds are made available to the entire Iowa City-Coralville area and it is up to the local officials to determine how the funds are distributed amongst the various operators. Also unlike Section 18, the University of Iowa CAMBUS system is eligible to receive Section 5 funds. The Board of Directors of the Johnson County Council of Governments will be the forum for deciding how to distribute the funds locally.

At one time the thought of attaining urbanized status meant a considerable increase in federal transit assistance. The Section 5 program allocation by Congress was many times greater than the Section 18 amount. However, the Reagan Administration has dimmed the outlook for future federal transit assistance. The administration is currently proposing the total phaseout of federal operating assistance by FY85. Accordingly, FY83 and subsequent years allocations are projected to gradually decrease. Therefore it appears that future transit funding will have to look more towards the user as well as other levels of government.

The Reagan Administration has proposed maintaining federal capital assistance, although at reduced levels. Other than Section 5, the only other major source of capital assistance is from Section 3 of the UMT Act. This discretionary program provides up to 80 percent of capital expenses for any size community - urbanized or not. Future bus purchases as well as any new garage facilities or improvements in this area will likely draw heavily from the Section 3 program.

State Transit Assistance

Since FY77 the Iowa Legislature has annually appropriated approximately $2 million to aid Iowa transit systems. These funds are administered by the Public Transit Division of the Iowa Department of Transportation and are distributed partially on a formula basis and partially on a competitive "special project" basis. Factors used in the formula distribution are ridership, revenue to expense ratio, and locally provided support. Special projects are meant to be "extraordinary, emergency or innovative in nature," and are awarded on a competitive basis.

Iowa City Transit, Coralville Transit, and Johnson County SEATS have all taken advantage of both operating and capital State Transit Assistance. The Public Transit Division has never recognized the University of Iowa CAMBUS system as being eligible to apply for State Transit Assistance on their own. For the first time, in FY83 the City of Iowa City is applying on behalf of CAMBUS for state assistance. If approved, the City and the University will enter into a contract for the funds. The application describes how CAMBUS supplements the service of Iowa City Transit, particularly on certain heavily travelled corridors such as between the University Hospitals complex and the Pentacrest.

Local Sources

Iowa City and Coralville have continually provided considerable local financial support for their transit operations. Local support has come from general property taxes as well as municipal assistance programs which have been earmarked by the City Councils for transit. Among these are federal revenue sharing, municipal state assistance, and liquor store profits.

An as yet untapped source of transit assistance is the transit levy which both Iowa City and Coralville could enact. State law permits levying up to a maximum of 54 cents per $1,000 assessed property valuation to be used towards transit operations. Based on the FY83 assessed valuation this levy could provide up to $370,689 in Iowa City and $77,560 in Coralville. Enacting a transit levy requires only City Council approval and not a general referendum.

Johnson County SEATS relies on service contracts as well as revenue from the County Poor Fund for its local support.

The CAMBUS system relies on several sources for their "local" support; among them are mandatory and optional fees, parking system revenue, and advertising income. Faced with declining federal work study support, CAMBUS has begun a campaign to tap into new areas of funding. In the Spring of 1982, CAMBUS received permission to distribute optional fee cards through campus mail to all University faculty and staff. These cards provide the option of either a lump sum contribution or enrolling in a monthly payroll deduction program. CAMBUS has also hired a professional firm to sell on-board

advertising space. In the future CAMBUS will continue to seek new avenues of funding.

User Fees

While maintaining the 35 cent fare in the FY83 Iowa City Transit budget, the City Council expressed their desire to see a fare policy developed. This fare policy would provide guidance to the Council regarding the proper fare level based on factors such as operating expense to revenue ratio and ridership levels.

Since raising their fare to 50 cents in April, 1981, the Coralville Council has not indicated any urgency to raise it beyond its present level.

In 1981, Johnson County SEATS which operates on a requested donation basis raised their request from 50 cents to $1.00. In the future it is possible that certain trip purposes such as to/from work will require a mandatory fare instead of a requested donation.

While CAMBUS has no fare, the University's Institute of Urban and Regional Research is currently engaged in a study to examine the impacts a fare would have on the system.

Depending upon the future of federal and state transit assistance all of the area systems will have to monitor their user fare schedules. All of the systems will also have to look towards innovative financing schemes while at the same time striving to keep costs down.

APPENDIX I
DOWNTOWN I.C. TRANSIT INTERCHANGE

The Downtown Iowa City Transit Interchange

The Downtown Iowa City Transit Interchange was built as part of a five-block street reconstruction and landscaping project in the area surrounding the recently completed Old Capitol Center shopping mall. The estimated transit interchange-related share of this $1.0 million reconstruction project was $350,000. Financing was 100% local, through the sale of general obligation bonds. The interchange serves not only Iowa City Transit, but also provides space for buses operated by the City of Coralville and the University of Iowa.

The construction of the Downtown Transit Interchange is viewed as a long-term capital investment which will have substantial impact on ridership and overall coordination of the three area transit systems. The interchange was designed with the following objectives in mind:

1. Increase the demand and accessibility of transit services. An important consideration was to minimize transfer wait time and the distance between transfer points. In the situations which existed before the new interchange was built, bus stops were scattered between four different downtown city blocks, with bus arrivals and departures occurring at various times throughout the hour. It was also thought desirable to have the transit interchange as close as possible to the Central Business District and University of Iowa main campus area. Studies have indicated that transit ridership is negatively affected by long distances to and from a bus stop. Another important reason for an optimal location in the CBD is

safety. A well-lighted location near the hub of CBD activity was thought to be an important consideration in promoting an image of safety.

2. Provide for maximum efficiency of transit operations. This was considered in terms of the transit interchange promoting operating efficiencies which allow for maximizing the level of ridership while minimizing operating costs. Factors that affect operating efficiency while buses are downtown include ease in embarking, disembarking, and transferring for passengers; and the ease in which buses can get through the interchange and CBD area.

3. Accommodate long-term transit growth in the Iowa City metropolitan area. In addition to providing for the current needs of transit and pedestrians, the transit interchange was designed to accommodate the predicted long-term growth in transit usage.

The Downtown Transit Interchange is strategically located on Washington Street, which separates the University of Iowa's main academic quadrangle (the "Pentacrest") from the downtown retail area. The Pentacrest, which is on the National Register of Historic Places, is on the north side of the interchange, and on the south side is Old Capitol Center, Iowa City's new enclosed shopping mall. Because space in the area is at a premium, individual bus bays could not be accommodated. Instead, pairs of bus stops were designated, at both curbsides and on a mid-street island, so that as many as 18 buses can be parked simultaneously. The actual street paving layout was determined by design standards developed by the Iowa

City Transit Manager. The turning radiuses and lane widths are minimal so as to maximize pedestrian space, but the design does allow relatively smooth ingress, staging, and egress movement for buses. Although the Downtown Transit Interchange includes benches and shelters, the entrance to Old Capitol Center has been designed so that riders can wait indoors in heated and air conditioned comfort.

The inlaid brick pedestrian crosswalks are placed to provide access to major ingress and egress points, and they also define specific areas within the street for bus parking. The crosswalks thus provide a "safe zone" for pedestrians, clearly define transfer points, and provide relief from the concrete street surface.

The pedestrian island also serves several functions to both pedestrians, and vehicles. The island obviously defines traffic lanes for both east and westbound buses, and also provides shelter to pedestrians. The transit shelters were custom-designed and fabricated to meet the confined space available and allow boarding directly from the shelters to buses.

The sidewalk areas were designed to offer a level of amenities (including seating, litter receptacles, pedestrian lighting, and plantings) consistent with adjacent areas of the CBD. The amenities reinforce the overall character of the developed areas, for example, by the use of period furniture and lighting on the Pentacrest side of the interchange, and contemporary styles on the Old Capitol Center side. These amenities "soften" the hard surfaces, and fulfill the important functions of safety and convenience for pedestrians. The street trees were chosen for their

visual impact and suitability for the severe growing conditions in the area. The 11 Summit Ash trees along the north side of the interchange were also chosen for their complimentarity to the present plantings on the Pentacrest.

Old Capitol Center is a prime example of local cooperation between the City and a commercial enterprise. The City used the availability of mass transit to convince the developer that customary levels of parking availability would not be required for a successful shopping center. In turn, the developer "sold" tenants on the viability of transit in lieu of the apparent shortage of parking. Furthermore, a portion of the private funds that would have been invested in parking facilities have been diverted to interior amenities, the end result being a more attractively furnished building than otherwise could have been afforded.

The local transit systems and Old Capitol Center recognize their mutually beneficial relationship. The more than 15,000 daily transit riders who board, alight, transfer, or pass through the Downtown Transit Interchange provide a continuing flow of customers to the doors of the shopping mall. On the other hand, the availability of downtown shopping has increased transit ridership, particularly during midday, evenings, and Saturdays. In addition, Old Capitol Center is open Sundays, and is creating a demand for Sunday transit service, which has not been operated in Iowa City in a generation.

In spite of the benefits the Downtown Transit Interchange has provided, the area has not been without problems. The original design of the

interchange called for it to be used exclusively by buses and pedestrians. However, when plans for construction were being finalized, it was decided to permit general traffic through the interchange in an eastbound direction. This was done in the interest of providing better auto access through the downtown area. Several problems which have developed since the interchange was opened are a result of the incompatibility of auto and truck traffic in an area that was designed specifically for buses and pedestrians. Problems have also resulted from the narrow sidewalk in front of Old Capitol Center. The primary problems which have been encountered include:

1. Pedestrian conflicts with cars and trucks.

2. Pedestrian congestion on the sidewalk in front of Old Capitol Center which cannot be widened because of the street width which is needed through this area.

3. Delivery trucks, taxis, and cars stopping in the interchange.

4. Difficulty with buses attempting to re-enter the traffic flow because of a queue of general traffic in the interchange.

5. General traffic impeding buses from turning into the island stop.

The Iowa City Council has directed the City staff to work on developing solutions to these problems which can be attained without prohibiting general traffic through the interchange.

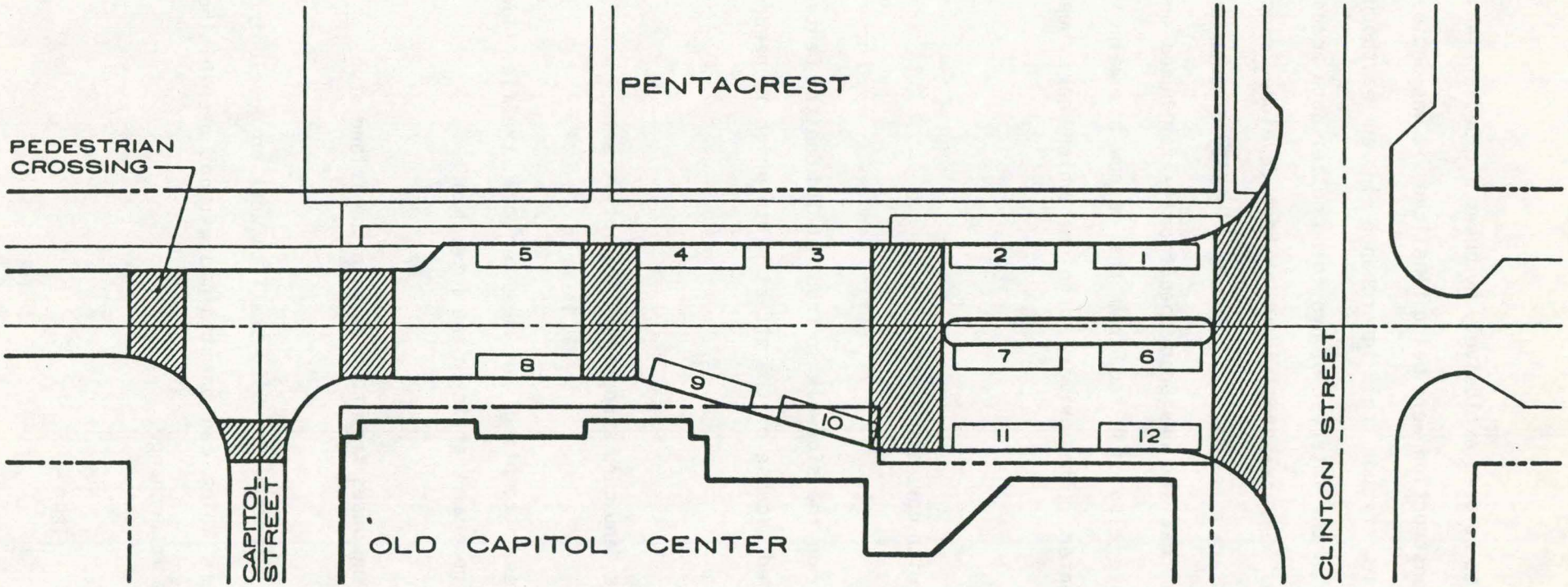
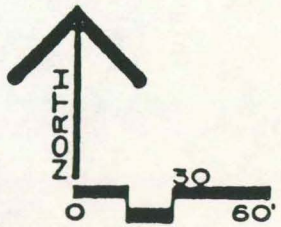


FIGURE 17

THE DOWNTOWN IOWA CITY TRANSIT INTERCHANGE



APRIL 1981

APPENDIX II
CAMBUS OAKDALE ROUTE SURVEY

RIDERSHIP SURVEY

CAMBUS *OAKDALE ROUTE*

JOHN LUNDELL — Transportation Planner
JEFF DAVIDSON — Asst Transportation Planner
KEVIN L DOYLE — Planning Intern
CONSTANCE HOEFER — Planning Intern

JCCOG April 1982

INTRODUCTION

The University of Iowa operates its own transit system, CAMBUS, to assist students, faculty, and staff in commuting on campus. The Oakdale route transports riders between the University Hospital complex and the Oakdale Field Campus, located approximately 6 miles northwest of the main campus. The Oakdale route operates with half hour headways from 6:00 AM to 12:00 midnight, Monday through Friday, and is coordinated to interchange with the Pentacrest route at North Hospital.

The CAMBUS Manager requested the assistance of the Johnson County Council of Governments (JCCOG) in evaluating ridership on the Oakdale route. A survey was designed to determine user identity, origins and destinations, service needs, and to elicit rider comments.

SURVEY RESULTS

On Thursday, April 15, 1982, from 6:15 AM to 12:00 midnight, JCCOG interns and CAMBUS staff conducted the Oakdale route survey. Surveys were distributed throughout the day to all riders boarding the Oakdale bus, which they were asked to fill out before deboarding. 217 riders filled out the survey for an almost 100% response rate. Most of the surveys were completed during the morning, since passengers were asked to only fill out the survey once and many afternoon and evening riders had already ridden in the morning. The following is a summary of the results of the Oakdale survey. A copy of the survey as well as detailed numerical results to each question are found in the appendix.

The survey results for Question 1, "What is the primary purpose of this trip?" indicate that 83 respondents primarily use the Oakdale bus to go to class or a place to study. The second most frequent response was from 76 people who said they use the Oakdale route to get to work. The third largest response, 31, was from people who said they used CAMBUS for job-related trips. The final four trip purposes - return home, medical, social/recreation, and other - were checked by a small number of respondents.

In response to Question 2, "Where did you come from just before getting on this bus?," a large number of riders (96) specified a University building. Of that number, 73 people came from an Oakdale campus building, 34 of those specifically from the Oakdale Residence Hall. Five persons came from University Hospitals before boarding the bus. The remaining respondents named a large variety of University buildings, most of them located on the west side of the Iowa River. 44 riders answered that they came from another bus just before boarding the

Oakdale bus. 20 of these respondents came from a CAMBUS (16 Pentacrest, 2 Red Route, 2 Blue Route), and the remaining 24 came from one of a number of Iowa City or Coralville Transit buses. 24 persons boarding the Oakdale bus came directly from the Oakdale parking lot, and three from main campus lots. 59 people responded "other" to the question. 29 of these persons came from home, and 7 specified the town of North Liberty.

Question 3 dealt with where the respondents would be going after getting off the Oakdale bus. 42 responded that they would be getting on another bus. Of those 42, 36 stated that they would be getting on the Pentacrest bus, one would be boarding the Red Route and 5 didn't respond as to which bus they would be getting on. 144 people, or 67% of the respondents, chose the second response, University building. Of those 144 the two largest responses that were specified were Oakdale (50) and University Hospitals (42). For a more detailed breakdown see attached tally sheet. Only one person responded that he was going to a parking lot. 28 people responded that they were going someplace other than the choices given. The two largest responses to this part of the question were home (6) and work (4).

Of the Oakdale riders surveyed, a large number used the Oakdale Route every day. In response to Question 4, "How often do you use the Oakdale Route?," 154 persons, or 71%, answered that they ride every day (Monday-Friday). 37 use the route two or three days a week, 6 only once a week, and 19 use it less than once a week.

Question 5 consisted of three parts which determined whether the respondent was student, staff, faculty, or not affiliated with the University; and if they were

a student did they live at Oakdale Campus. The results were that 204 respondents, or 94%, said they were either students or employees of the University. 119 of those responding were students and 82 were faculty/staff. Of those responding to part C, 59 said they lived at Oakdale Campus, and 63 said they did not.

The responses to Question 6, "To satisfy your needs, how late does the Oakdale Route need to operate?," were fairly evenly divided among the three possible responses. 78 riders answered that they need Oakdale service until 6:00 PM, while 58 said 10:00 PM, and 74 need the service until midnight.

The comments generated some interesting viewpoints of the Oakdale service. 21 people stated they were very pleased and appreciative of the available service. Another recurring suggestion was that there needs to be some kind of weekend service to and from Oakdale. One option suggested by passengers would be to have a morning, mid-day, and evening run to Oakdale. A number of respondents commented that they would be willing to contribute more financially than they do currently, because it is a good service and they want to see it continue. Another comment came from the Director of Physical Therapy at Oakdale, who said that he has at least 30 students a semester who use the service three times a week to get out to the Oakdale Campus; the service is therefore essential for that program. A detailed list of comments and suggestions can be found in the appendix.

CONCLUSIONS

The Oakdale survey results indicate that the service is well used and considered essential for both students and those employed at Oakdale Campus. Over 70% of those responding to the survey use the Oakdale bus to either go to classes or travel to work. A similar percentage stated they ride the Oakdale bus every day. Nearly all of the respondents are students or employees of the University (94%) and use the service to get to Oakdale or University Hospitals.

It should be noted that the results reflect most people filling out the survey in the morning, since a large number of afternoon riders were people who had ridden in the morning and filled out a survey at that time. Riders were requested to only fill out one survey.

Several passengers expressed an interest in having some type of service to and from the Oakdale Campus on Saturdays. Other respondents commented that they would be willing to pay an increased fee or even a fare in order to insure that the service will be continued. The survey results generally indicate that the Oakdale Route is a valuable and appreciated service for those currently using it.

APPENDIX

Diagram of the Oakdale Route

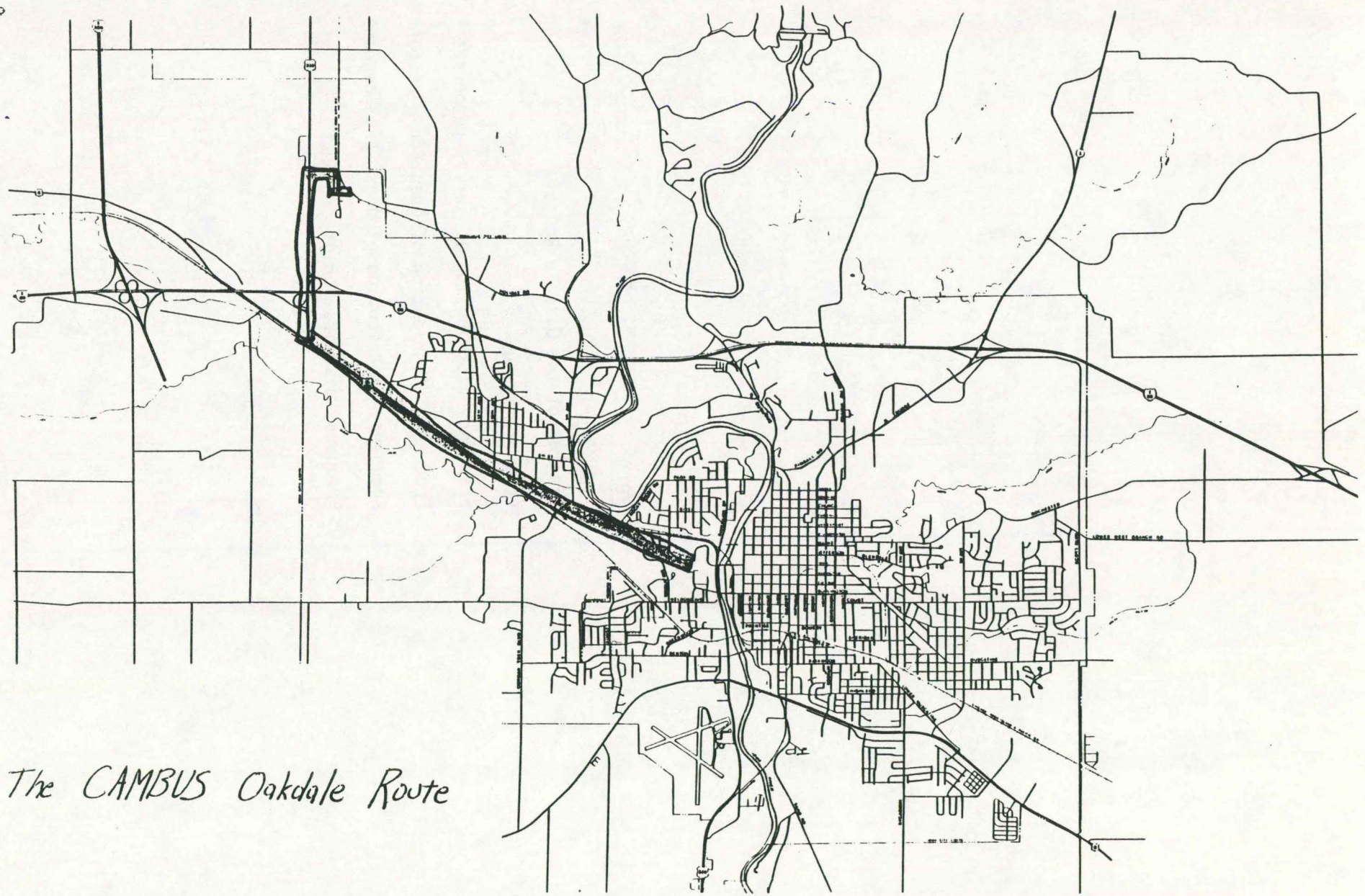
Copy of the survey

Frequency distribution of survey responses

Frequency distribution of Question 2 responses

Frequency distribution of Question 3 responses

Frequency distribution of comments



The CAMBUS Oakdale Route

I/O

Time _____

The CAMBUS staff with assistance of the Johnson County Council of Governments is evaluating the CAMBUS Oakdale Route. You can help by filling out this short survey and depositing it in the box near the rear door as you depart the bus. Your assistance is appreciated.

IF YOU HAVE PREVIOUSLY COMPLETED THIS SURVEY TODAY, PLEASE DO NOT FILL ONE OUT AGAIN.

1. What is the primary purpose of this trip? (Check one)
   - ____ class/study
   - ____ to work
   - ____ return home
   - ____ job related
   - ____ medical
   - ____ social/recreation
   - ____ other

2. Where did you come from just before getting on this bus? (Check one)
   - ____ another bus (give route name) _____
   - ____ University building (give building name) _____
   - ____ parking lot (give location) _____
   - ____ other _____

3. Where are you going just after getting off this bus? (Check one)
   - ____ another bus (give route name) _____
   - ____ University building (give building name) _____
   - ____ parking lot (give location) _____
   - ____ other _____

4. How often do you use the Oakdale Route? (Check one)
   - ____ every day (Monday - Friday)
   - ____ two or three days a week
   - ____ one day a week
   - ____ less than once a week

5. A. Are you a student or employee of the University of Iowa? (Check one)
   - ____ Yes
   - ____ No

   B. If yes, are you a student or staff/faculty? (Check one)
   - ____ student
   - ____ staff/faculty

   C. If you are a student, do you live on Oakdale Campus? (Check one)
   - ____ Yes
   - ____ No

6. To satisfy your needs, how late does the Oakdale Route need to operate? (Check one)
   - ____ Until 6:00 p.m.
   - ____ Until 10:00 p.m.
   - ____ Until midnight

7. Please offer any additional comments or suggestions.

Thank you.

DISTRIBUTION OF SURVEY RESPONSES

I/O

Time _____

The CAMBUS staff with assistance of the Johnson County Council of Governments is evaluating the CAMBUS Oakdale Route. You can help by filling out this short survey and depositing it in the box near the rear door as you depart the bus. Your assistance is appreciated.

IF YOU HAVE PREVIOUSLY COMPLETED THIS SURVEY TODAY, PLEASE DO NOT FILL ONE OUT AGAIN.

1. What is the primary purpose of this trip? (Check one)
   - 83 class/study
   - 76 to work
   - 8 return home
   - 31 job related
   - 8 medical
   - 7 social/recreation
   - 4 other
2. Where did you come from just before getting on this bus? (Check one)
   - 44 another bus (give route name) _____
   - 82 University building (give building name) _____
   - 27 parking lot (give location) _____
   - 73 other _____
3. Where are you going just after getting off this bus? (Check one)
   - 42 another bus (give route name) _____
   - 144 University building (give building name) _____
   - 1 parking lot (give location) _____
   - 28 other _____
4. How often do you use the Oakdale Route? (Check one)
   - 154 every day (Monday - Friday)
   - 37 two or three days a week
   - 6 one day a week
   - 19 less than once a week
5. A. Are you a student or employee of the University of Iowa? (Check one)
   - 204 Yes
   - 12 No

   B. If yes, are you a student or staff/faculty? (Check one)
   - 119 student
   - 82 staff/faculty

   C. If you are a student, do you live on Oakdale Campus? (Check one)
   - 59 Yes
   - 63 No
6. To satisfy your needs, how late does the Oakdale Route need to operate? (Check one)
   - 78 Until 6:00 p.m.
   - 58 Until 10:00 p.m.
   - 74 Until midnight
7. Please offer any additional comments or suggestions.

Thank you.

QUESTION 2: Where did you come from just before getting on this bus?

Responses:

ANOTHER BUS

Pentacrest	16
Mark IV	3
Red Route	2
Blue Route	2
Iowa City Transit	2
Court Hill	1
Lakeside	1
Manville	1
Sycamore	1
Oakcrest	1
Hawkeye	1
Hawkeye Exp.	1
Towncrest	1
Coralville 10th St.	1
No response	10
TTL	44

UNIVERSITY BUILDINGS

Oakdale	73 (34 specified dorm)
Univ. Hospitals	5
Main Campus Dorms	3
Print Service	3
Inst. of Agri. Medicine	2
Basic Science Bldg.	2
Animal Research	1
Nursing	1
Westlawn	1
Psych. Hospital	1
Trowbridge	1
Dental Bldg.	1
Gilmore	1
Pharmacy	1
TTL	96*

PARKING LOT

Oakdale	24
Dental	2
Ramp 2	1
TTL	27

OTHER

Home	29	Van Pool	1
N. Liberty	7	Cedar Rapids	1
Walk to N. Hosp.	3	School	1
		Public Lib.	1
Car drop-off	2	Lone Tree Bank	1
Bicycle	2	No response	11
		TTL	59

*The total responses in this category do not equal the total from the tally sheet because 14 people specified a University building, but wrote their responses in the "OTHER" category.

QUESTION 3: Where are you going just after getting off this bus?

Responses:

UNIVERSITY BUILDINGS

Oakdale	50	Seashore	2
Univ. Hospitals	42	Univ. Press	1
Quadrangle	7	Halsey	1
Hillcrest	6	Physics	1
Inst. of Ag. Med.	5	Print Service	1
Basic Science	4	Currier	1
Pharmacy	4	Old Armory	1
Dental	3	Trowbridge	1
Geog. Survey Warehouse	3	Wendell Johnson	1
Univ. Library	3	Phillips	1
EPB	2	Gilmore	1
Schaeffer	2	Music	1
Law	2	Fieldhouse	1
Psych. Hosp.	2	Nursing	1
		Rec. Center	1
		Total	151*

ANOTHER BUS

Pentacrest	36
Red Route	1
No response	5
Total	42

PARKING LOT

TTL = 1 (location not specified)

OTHER

Home	6
Work	4
VA Hosp.	3
Downtown	2
Senior Center	1
Car	1
No response	4
TTL	21

*The total responses in this category do not equal the total from the tally sheet because 7 people specified a University building, but wrote their responses in the "OTHER" category.

ADDITIONAL COMMENTS AND SUGGESTIONS

Frequency

21 Expressed appreciation for Oakdale service.

20 Have Oakdale service on weekends. Perhaps morning, midday, and evening run.

4 Safety should be emphasized in driver training. Many drive too fast and dangerously.

4 The 7:45 AM bus leaving North Hospital does not arrive at Oakdale by 8:00 AM.

3 The bus is usually late in the morning.

3 More buses are needed during the rush hour. Many people have to stand.

3 Oakdale bus is a necessity because I do not have access to a car.

2 Service is good for people living near the Oakdale Campus to get to the main campus.

2 With increased traffic on U.S. 6 rerouting to I-80 would speed up the route.

2 Switch schedule to on-the-hour and ½-hour at North Hospital and :45 and :15 at Oakdale.

2 Operate night Oakdale to and from North Hospital, not to Rec. Center.

1 Make sure Oakdale and Pentacrest meet at North Hospital.

1 Night Oakdale bus should meet Red and Blue Routes at trailer.

1 Suggest a 2 bus route with 15 minute service.

1 Additional buses needed between 8:30 and 9:30 AM.

1 Have the bus run hourly during slack periods of the day. 6 PM to midnight.

1 If service was discontinued, it would be impossible to staff University offices at Oakdale.

1 Want Oakdale service after midnight.

1 I have been riding the bus to Oakdale for 6 years and have seen a marked increase in ridership.

Frequency

1 Make sure the 6:30 AM bus is on time.

1 The service eases the number of cars coming in and out of Iowa City.

1 Add a stop at Lantern Park Mall.

1 I think the Oakdale bus should only be for the people who live on Campus. Give some kind of pass.

1 Service should not be available for non-students/faculty.

1 I would be willing to contribute more than $2.00 per semester for this service. Perhaps a monthly contribution just like staff/faculty. It's a great idea to give staff/faculty the opportunity to have money for Cambus deducted from their paychecks.

1 Increase the amount to Cambus on the student optional fee cards, perhaps $5 or $10.

1 I support the service monetarily each time I have the opportunity.

1 Would be willing to pay a fare (10¢).

1 Continue free service.

1 The criteria for deciding who is issued passes is quite unfair in the respect that it's only for faculty going to Printing Services and Students living in Oakdale. I am a student and I donate $2.50 yearly for Cambus service.

1 My riding is seasonal. In winter I ride all the time, in spring and fall only during inclement weather.

1 Bus should only go past agricultural building once.

1 Have Daily Iowan on morning buses.

APPENDIX III
CORALVILLE/CAMBUS COMBINED ROUTE

PROPOSAL

COMBINED ROUTES:

CORALVILLE TRANSIT - Night Route
CAMBUS - Night Oakdale Route

JEFF DAVIDSON · ASSISTANT TRANSPORTATION PLANNER
JOHNSON COUNTY COUNCIL OF GOVERNMENTS 11/81

Proposal for a Combined Coralville Transit Night Route and CAMBUS Night Oakdale Route

CURRENT SITUATION:

Coralville Transit Night Route

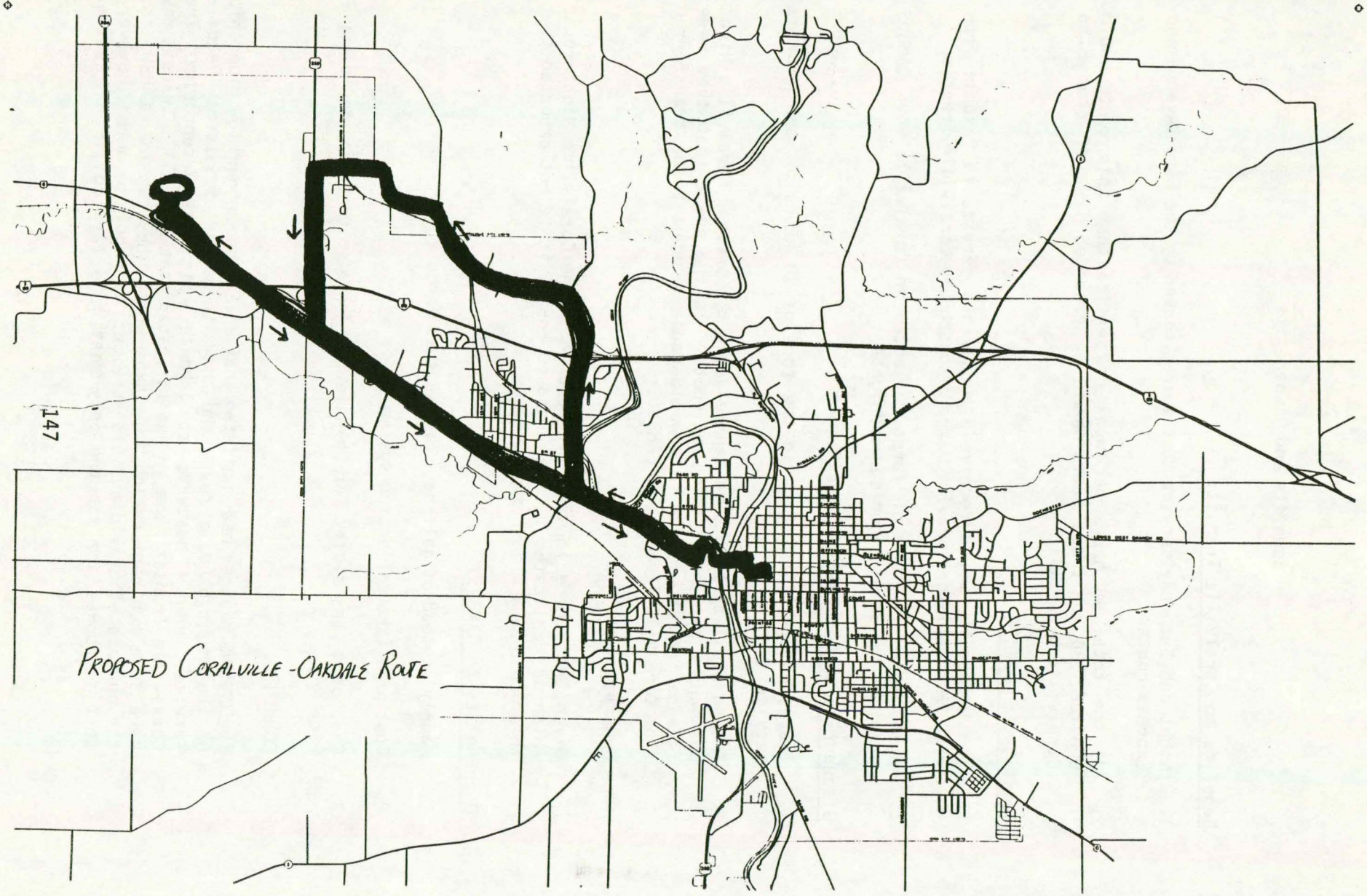
Coralville Transit operates a single night route which basically covers the area served by the Lantern Park and Tenth Street routes. This route has hourly headways and makes seven trips between 6:10 PM and 12:10 PM, Monday through Saturday. This route also runs all day Saturday, 6:15 AM to 6:00 PM. One bus on this route is the total service offered by Coralville Transit on evenings and Saturdays.

CAMBUS Night Oakdale Route

CAMBUS operates this route Monday-Friday from 6:30 PM to 11:30 PM, maintaining half-hour headways all evening. The route operates between the CAMBUS trailer and Oakdale campus. There is one bus on this route, although several others operate throughout the CAMBUS system during the evening. After 8:00 PM this route is not heavily utilized. There is no bus service to Oakdale on Saturday.

PROPOSED SERVICE:

A new combined Coralville-Oakdale route is proposed, which would operate weeknights and all day Saturday. This route would operate over the area served by the Coralville First Avenue and Express routes, as well as provide service to Oakdale. CAMBUS would operate this route weeknights from 6:30 PM to midnight instead of the Night Oakdale route. Coralville Transit would operate the route on Saturday from 6:00 AM to midnight in addition to their regular Saturday route. See diagram of proposed route. In keeping with the fare structure of each system, Coralville riders would pay a fare and Oakdale passengers would not.


147
PROPOSED CORALVILLE - OAKDALE ROUTE

Benefits and Disbenefits

Benefits to Coralville Transit:

1. Night and Saturday service to the area served by the First Avenue and Express routes.

2. Of the total 48 hours per week of service that this route would provide, 30 of these hours would be provided free of charge to Coralville by CAMBUS.

Benefits to CAMBUS:

1. The University would receive Saturday bus service to Oakdale from 6:00 AM to midnight provided free of charge by Coralville Transit.

2. Revenue in the form of fares collected in Coralville when CAMBUS provides the service during weeknights.

Disbenefits to Coralville Transit:

1. Increased operating costs in the form of 18 hours of new Saturday service.

2. The possibility that some people using the present Coralville Night bus would switch to this new route. In the event that they were fare-paying passengers this would cause revenue to be transferred from Coralville Transit to CAMBUS.

   COMMENT:

   Given that there is very little area of the Coralville Night route which is duplicated by the proposed route, it is not expected that this would be a significant problem.

Disbenefits to CAMBUS:

1. Hourly instead of half-hour headways at Oakdale.

2. Cost of a fare collecting system.

3. Cost of a pass system for Oakdale residents so that they could still ride free.

   COMMENT:

   The CAMBUS manager has indicated that given the current low ridership on the Night Oakdale route and the alternative of Saturday Oakdale service, hourly headways at Oakdale are quite acceptable. The Coralville Transit Manager has indicated that Coralville Transit may have some non-registering fareboxes which they can loan CAMBUS for the purpose of providing this service. It should be noted, however, that fareboxes are not the only cost in a fare collection system.

There is also the cost of emptying the fareboxes, counting the receipts, depositing the receipts, and the accompanying security arrangement which becomes necessary in a money handling operation.

Time Trial of Proposed Route

Location	Elapsed Time
Pentacrest	:00
N. Hospital	:04
First Ave./6	:09
Holiday/High Country	:15
N. Ridge	:18
Oakdale	:22
Shell Station/218	:26
Knollridge Gardens	:27
Shell Station/218	:28
W. Hills #1	:33
W. Hills #2	:35
Bustad Toyota	:41
Rocky Shore	:44
N. Hospital	:46
EPB	:50
Pentacrest	:53

Total Elapsed Distance: 15.6 mi.

COMMENT:

Time Trial was run Friday, November 20, 1981. A full-size transit bus was used, and stops were made at various points along the route. It appears that there is adequate time to run this route and stay on a schedule of one hour headways.

ESTIMATED EXPENDITURES FOR PROVIDING PROPOSED SERVICE

Coralville

There are two indicators which can be used to estimate the cost of providing transit service: cost per hour and cost per mile. Since the proposed new service involves quite a bit of highway mileage, it can be assumed that the speed of a bus on this route would be faster than the average speed of a Coralville Transit bus, which is 12.5 mph. For this reason, it will be more accurate to use cost per mile in estimating what it will cost to provide this service.

Coralville Transit's costs can be broken down into three categories: Administration, Operating and Maintenance, and Capital. Administration and Capital costs will remain the same whether the new service is provided or not; they are fixed costs. However, most Operating and Maintenance costs are variable, if more service is provided, more cost will be incurred. Operating and Maintenance costs can be broken down further:

Insurance	9%
Operating Taxes	7%
Operations Supervision	1%
Maintenance	9%
Transportation*	61%
Servicing and Cleaning	6%
Purchasing and Inventory	4%
Marketing	2%
Accounting	1%
TOTAL	100%

*Includes Drivers Wages and Diesel Fuel.

Of these operating and maintenance costs, Insurance, Operations Supervision, and Accounting will not increase if the proposed service is provided. These fixed operating and maintenance costs are 11% of total O & M costs. If we can estimate what the increase in the remaining variable operating and maintenance costs will be if the proposed service is provided, then we can estimate Coralville Transit's marginal cost for providing the service:

FY80 operating and maintenance cost per mile for Coralville Transit = $1.57

The Coralville Transit budget increased 19.5% from FY80 to FY81.

1.57 x 1.195 = 1.88

FY81 O & M cost per mile = $1.88

Since we are interested in variable costs, and they are 89% of total O & M costs:

$1.88 x .89 = $1.67 = variable O & M costs per mile.

The mileage of the proposed route is 15.6 miles. If Coralville Transit provides the service all day Saturday:

15.6 mi. per trip x 18 trips per day = 281 mi. per day

281 mi. per day x 52 days per yr. = 14,612 mi. per year.

14,612 mi. per yr. x $1.67 O & M cost per mi. = $24,402

$24,402 = Estimated cost to Coralville Transit for providing the proposed service.

CAMBUS

Since CAMBUS would be providing the proposed service instead of the current night Oakdale service, there would be no increase in operating cost, and in fact would be a cost savings. The proposed service would entail CAMBUS operating the same number of vehicles (one), over the same time period (6:30 PM - Midnight approx.), the same number of days per week (Mon.-Fri.). The differences would be in number of trips per night: 6 instead of 11, and the mileage per trip: 15.6 instead of 12.0.

Under the current Night Oakdale service:

11 trips per night x 12.0 miles mi. per trip = 132 mi. per night

132 mi. per night x 255 nights per yr. = 33,660 mi. operated per year.

Under the proposed service:

6 trips per night x 15.6 mi. per trip = 93.6 mi. per night

93.6 mi. per night x 255 nights per yr. = 23,868 miles operated per year.

33,660 - 23,868 = 9,792 less miles operated under proposed service.

Fuel economy for CAMBUS on the night Oakdale route is approximately 5.5 mpg.

9792 divided by 5.5 = 1,780 gallons of fuel saved under proposed service

1,780 gallons of fuel x $1.14 per gal. = $2,029 saved under operation of proposed service.

There might also be a small savings in vehicle lubricants.

SAVINGS TO CORALVILLE FROM CAMBUS

If Coralville Transit were to provide the weeknight part of the proposed service:

23,868 miles per year x $1.67 operating and maintenance cost per mile = $39,859

$39,859 = Operating and maintenance cost savings to Coralville for service CAMBUS would provide.

SAVINGS TO CAMBUS FROM CORALVILLE

Using the same formula that was used for Coralville Transit, we can get a rough idea of the variable operating and maintenance costs for CAMBUS.

FY80 CAMBUS O & M cost per mile = $1.30

$1.30 x 1.195 = $1.55 = approx. FY81 O&M cost per mile

$1.55 x .89 = $1.38 = variable O&M cost per mile

14,618 miles of Saturday service per year x $1.38 = $20,173.

$20,173 = operating and maintenance cost savings to CAMBUS of service Coralville would provide.

This figure of $20,173 is a minimum figure, since CAMBUS does not currently operate on Saturdays. There would be considerable additional cost to setting up a support network of dispatchers, mechanics, and cleaning personnel for Saturday service.

POTENTIAL FARE REVENUE FROM PROPOSED SERVICE

The present Coralville Transit Saturday route serves the area normally served by the Lantern Park/Tenth Street routes. Ridership on the Saturday route is 5.3% of Lantern Park/Tenth Street ridership. Using these same proportions:

Total ridership on First Ave. and Express routes (1980) = 100,728

100,728 x .053 = 5,339

5339 = Potential Saturday ridership

However, the present Coralville Transit Saturday route only operates until 6:00 PM. Coralville would operate the proposed Saturday service until midnight. Coralville Transit's night service, which operates Monday - Saturday over the same route as the Saturday service, has ridership which is 13% of Lantern Park/Tenth Street ridership. Using the same proportions for the proposed service:

100,728 x .13 = 13,095

If this 13,095 figure is divided by the six nights of the week, 2182 might seem a reasonable estimate of yearly Saturday night ridership. However, night ridership is not evenly distributed throughout the week. It is higher Monday - Thursday than Friday and Saturday. A better estimate of potential yearly Saturday night ridership probably would be 1500. So:

5,339 + 1,500 = 6,839 = Potential Saturday Ridership for Proposed Service

13,095 - 1,500 = 11,595 = Potential Night Ridership for Proposed Service

The average fare on Coralville Transit in 1980 was 30 cents. Since the base fare increased from 35 cents to 50 cents in 1981, it can be estimated that the average fare is now approximately 40 cents.

6,839 x 40¢ = $2,736 = Potential Revenue for Coralville Transit

11,595 x 40¢ = $4,638 = Potential Revenue for CAMBUS

Concluding Remarks

The idea presented in this document is something which has never been tried before in the Iowa City area: the sharing of a single route by two different transit systems. The proposed route means different things to the two systems involved. For CAMBUS it means replacing one route with another. For Coralville Transit it means adding a new route to their present service.

From a strict benefit/cost perspective, it appears that the proposed service is worthwhile for both systems involved. It would not be practical for either system to provide all of the proposed service. The idea is feasible only as a cooperative venture.

Additional details would need to be discussed if a decision is made to implement the service. For example: CAMBUS provides a reduced level of service during interim periods (when University classes are not in session). Would this be appropriate on the cooperative route?

The ultimate decision of whether or not to begin this service rests with the policy makers from the University and Coralville. While feasible from a benefit/cost perspective, there may be political considerations which preclude its implementation.

Prepared by Jeff Davidson, Assistant Transportation Planner

bdw/sp

APPENDIX IV
NORTHRIDGE SUBD. TRANSIT EXTENSION

Johnson County Council of Governments
410 E. Washington St. Iowa City, Iowa 52240

EXAMINATION OF PROVIDING TRANSIT SERVICE TO THE NORTHRIDGE SUBDIVISION IN CORALVILLE, IOWA

Purpose:

To aid the Coralville City Council in their consideration of expansion of transit service to the Northridge Subdivision in northern Coralville.

Location:

Northridge area along Twelfth Avenue Extended north of Holiday Road, (Figure 1).

Number of dwelling units which would be served:

67 dwelling units (a duplex counts as two units) are either currently completed or under construction. In forthcoming years considerable residential expansion is projected to occur.

Number of commercial establishments which would be served:

None.

Nearest currently available service:

The First Avenue route of Coralville Transit presently travels west on Holiday Road and turns south on Twelfth Avenue. This service is provided 6:30 AM until 6:30 PM Monday through Friday. Northridge residents are required to walk as much as three-quarter mile to the corner of Holiday Road and Twelfth Avenue. There is no transit service to this area after 6:30 PM and all day Saturday.

Possible service provision arrangement:

Transit service to the Northridge area could be provided by directing the First Avenue route to turn north on Twelfth Avenue at Holiday Road and loop in and out of Northridge Drive and return south on Twelfth Avenue (Figure 2). Service into Southridge Drive is not possible at this time due to lack of a turnaround or outlet. This route configuration would provide service to all Northridge and Southridge Drive residents as well as those along Twelfth Avenue north of Holiday Road.

Additional vehicle mileage required:

1.3 miles per trip x 10 trips per day x 255 days = 3,315 miles annually.

Additional time required:

6 minutes per trip

Additional operating cost:

Since the First Avenue route currently has a 15 minute layover downtown after each run, no additional labor costs would be incurred. Costs which would be incurred include only those which have actually to do with the operation of a bus - fuel, oil, tires, maintenance. Some one-time initial expenses would be incurred in order to print new schedules, publicize the new service, and install bus stop signs.

According to our calculations, it costs Coralville Transit approximately 74¢ per mile to operate a bus. This DOES NOT include any labor costs (except mechanics) or overhead costs such as bus barn utilities. The 74¢ per mile DOES INCLUDE such items as fuel, oil, tires, mechanic's labor, spare parts, and cleaning.

Therefore, expansion of the First Avenue route to the Northridge area would cost approximately: 3,315 miles x 74¢ per mile = $2,453 annually.

One time cost (schedules and signs): $200.

Additional operating revenue:

Projecting ridership is very difficult in newly developing areas, however an "educated guess" on ridership and resulting revenue is attempted. During 1980 each Coralville resident averaged 56.8 trips on Coralville Transit. However this rate includes apartment dwellers and college students who often do not have any other form of transportation available other than walking or riding a bicycle. It is felt that residents of the Northridge area are likely to own at least one automobile and therefore their transit usage rate would be lower, perhaps closer to forty trips per capita (average of ten roundtrips from Northridge per day).

Assuming an an average of two residents per dwelling unit in each of the 67 units currently complete or under construction, this would result in 134 residents in the Northridge area.

The average fare of Coralville Transit users in 1981 is projected to be 40¢ per passenger.

Therefore projected operating revenue is: 134 residents x 40 trips/resident/year x 40¢/trip = $2,144 annually.

Other positive and negative impacts of this service expansion:

Positive impacts -

1. Provision of transit service to a developing area currently without any service.

2. Availability of transit service could increase attractiveness of this area in the eyes of developers and home seekers.

3. Ridership increase on the currently least utilized Coralville Transit route.

4. Residents along Valley View Drive who miss the bus could catch it at Holiday Road on the return loop from Northridge.

5. Expansion of transit service is viewed in a positive manner by state and federal funding agencies.

6. Productivity of drivers would be increased by eliminating a portion of the layover downtown.

Negative impacts -

1. Transit patrons who board the bus before Holiday Road and Twelfth Avenue would be required to board six minutes earlier and ride the bus six minutes longer.

2. During peak hours additional riders would be required to stand and occassionally some may have to be passed by.

3. Precedent of extending service to an outlying subdivision.

4. Non-transit users living in the Northridge area could be offended by having a bus travel past their home.

Conclusion:

Expansion of transit service to the Northridge area of Coralville could be accomplished without a large increase in operating costs to the City. Initial ridership could be low due primarily to dwelling units non-occupied or under construction. Northridge service could be initiated or terminated with little impact on the rest of the First Avenue route.

Prepared by:

John A. Lundell, Transportation Planner

N
Village or City Boundary
MILE
University of Iowa, Oakdale Campus
Iowa River
SEE FIG. 2

FIG. 1

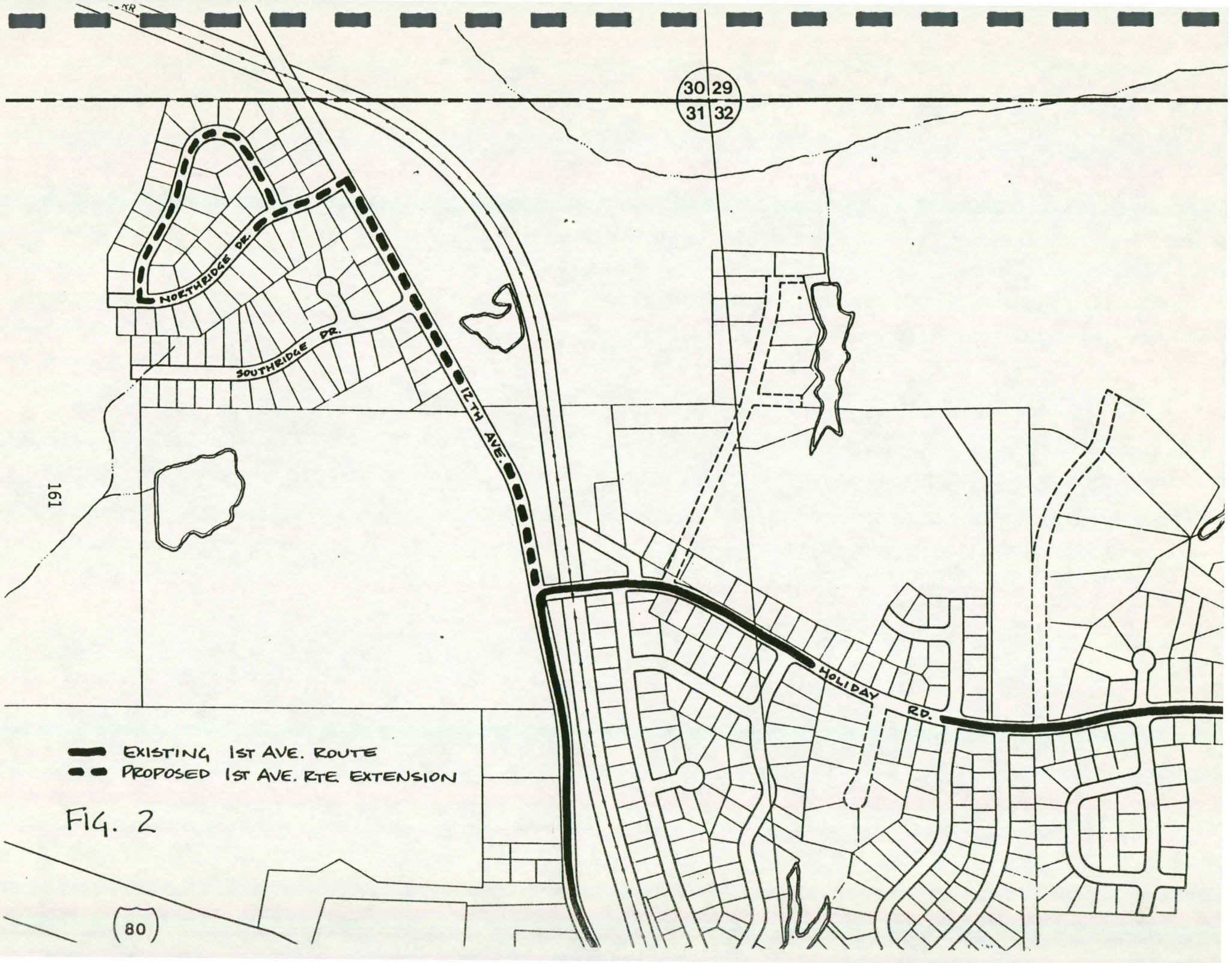

30 29
31 32
NORTHRIDGE DR.
SOUTHRIDGE DR.
12TH AVE.
HOLIDAY RD.
161
80
EXISTING 1ST AVE. ROUTE
PROPOSED 1ST AVE. RTE. EXTENSION

FIG. 2

APPENDIX V
ELDERLY & HANDICAPPED SPECIAL EFFORTS

Johnson County Council of Governments
410 E. Washington St. Iowa City, Iowa 52240

Date: February 17, 1982

To: JCCOG Board of Directors

From: John Lundell, Transportation Planner

Re: Elderly and Handicapped Transportation Subcommittee Recommendations

At your September Board of Directors' Meeting, a subcommittee was established to examine the transportation service provided to elderly and handicapped residents. Since September, the subcommittee has met five times to address this issue and formulate a set of recommendations to the Board. Handicapped individuals and representatives of agencies which deal with the handicapped were consulted and often present at the subcommittee meetings.

The impetus behind forming the subcommittee was the new federal policy on "special efforts" permitting local officials to choose their method of providing elderly and handicapped transportation. As a result of this new policy, Iowa City, Coralville and University of Iowa officials have deleted the wheelchair lift equipment from the full-size coaches currently on order from Neoplan, USA. Local officials have instead chosen to provide specialized paratransit service.

The current service being provided by Johnson County SEATS and the University of Iowa Bionic Bus were included in this area's certification of special efforts to the Urban Mass Transportation Administration, (UMTA). In responding to our certification, UMTA expressed concerns over the inclusion of the Bionic Bus service since it is currently restricted solely to University-related individuals and not the general public. UMTA stated that by law the University is required to serve the general public with the vehicle they have ordered using UMTA Section 3 funds. However UMTA will permit a priority reservation system which gives first priority to University-related persons.

The first few subcommittee meetings concentrated on reviewing the services currently being provided by SEATS and the Bionic Bus as well as other providers such as Systems Unlimited and Grant Wood Area Education Agency. The subcommittee reached the following conclusions about the existing services:

1. SEATS does a good job of serving the random trip needs of elderly and handicapped residents between the hours of 8:00 AM and 5 PM.

2. The City of Iowa City supplemental taxi contract satisfies a portion of the need elderly and handicapped Iowa City residents have which SEATS cannot serve.

3. The Bionic Bus does an excellent job of serving both the random and regularly scheduled trips of handicapped University-related individuals. However, during peak hours the Bionic Bus service is currently operating at maximum capacity.

4. SEATS does not have the capacity to accept any regularly scheduled trips, (i.e. someone in a wheelchair cannot have a standing reservation to go to work at 8 AM and return at 5 PM, that person must call in each day and hope that SEATS can serve the request).

5. Except for a small number of Iowa City residents who are able to use the supplemental taxi service, there is no specialized service after 5 PM unless you are University-related and thus eligible to use the Bionic Bus.

6. Both Systems Unlimited and Grant Wood AEA require their vehicles to serve their clients during the same peak hours when a need exists for additional specialized service to the general public.

7. A large number of wheelchair bound individuals do not object to accepting a ride in a taxi as opposed to a lift-equipped van. However individuals in electric powered wheelchairs are unable to use taxis since the chair cannot be folded up and placed in the trunk.

After reaching these conclusions, the subcommittee concentrated on developing options to recommend to the Board which:

1. Assure elderly and handicapped residents an opportunity to receive specialized transportation during the majority of hours the fixed route services operate.

2. Satisfy a portion of the demand which exists from non-University related individuals for regularly scheduled specialized transportation.

3. Alleviate the concerns UMTA has raised about the Section 3 funded Bionic Bus serving only University related persons.

4. Provide service which is flexible and can be adjusted as needed with minimal effort.

5. Are as inexpensive as possible and do not involve costly capital investments.

Three separate recommendations on how to improve specialized elderly and handicapped transportation services were developed by the subcommittee. None of the recommendations require additional capital investment and each provides flexibility so as to permit adjustments according to demand or funding constraints. Each

recommendation is completely separate from the other two; however the subcommittee feels that all three are necessary to adequately address the identified deficiencies in the existing services.

Recommendation A: Expand SEATS Hours of Service

The subcommittee recommends expanding the service hours of SEATS by two hours Monday through Friday. Instead of the current 8:00 a.m. to 5:00 p.m. schedule, service would begin at 7:00 a.m. and continue until 6:00 p.m. This expansion would enable handicapped persons to arrive at work by 8:00 a.m. and stay until 5:00 p.m. At the present time it is recommended that only one van be placed in service during these extended hours. By using one van it is estimated that as many as four handicapped persons could receive regular transportation to work. This number could increase if the persons were not wheelchair-bound, or if several persons needed transportation to or from a common work site.

Projected Costs of Recommendation A:

Based on the current operating costs of SEATS, to operate one van two additional hours for 255 working days would cost approximately $5,355. If an average of two persons made two trips each day and paid the requested donation of one dollar, this would total $1,020 in revenue resulting in a net cost of $4,335.

Therefore, based on the current split of SEATS urban ridership:

Iowa City's share (86.0%) -	$3,728
Coralville's share (14.0%) -	607
Total	$4,335

Recommendation B: Expansion of Taxi Contracts

The subcommittee recommends expanding the current Iowa City taxi contract to include all urban area residents. The advantages of using taxis are that service is provided during all of the fixed route transit system hours, and that all capital, operational, and maintenance responsibilities are borne by the taxi operator. In addition, the average taxi trip cost is considerably less expensive than the average trip cost of SEATS or Bionic Bus. Thus far in FY82 nearly 1,000 supplemental taxi trips have been made by Iowa City residents at an average cost of $2.82 per trip. The average donation has been 75¢ resulting in an average subsidy by Iowa City of $2.07.

A program could be established where the requested donation (or fare) was set at $1.00 with the Cities agreeing to subsidize the remainder of the fare up to some maximum amount, perhaps $6.00. The one dollar charge would discourage abuse of this program by the users.

Projected Costs of Recommendation B:

This service can be as extensive as desired. A policy should be set as to the hours of service (probably the same as the fixed route service) and eligibility (all trips when SEATS is not in operation; only school, medical, or work oriented trips during SEATS service hours). The proposed level of funding:

Current Iowa City Taxi Contract	$4,000 ÷ $2.82/trip =	1,418 trips
Proposed additional service	$2,000 ÷ $2.82/trip =	709 trips
Total Cost	$6,000 Total trips	2,127 trips
Proposed Coralville Taxi Contract	$1,000 ÷ $3.25/trip* =	308 trips

(*Average Coralville trip is longer resulting in higher average cost.)

Total trips:	Iowa City	2,127 trips (87.4%)
	Coralville	308 trips (12.6%)
	Total	2,435 trips (100.0%)

Recommendation C: Coordination between SEATS and Bionic Bus

The subcommittee recommends sharing of trip requests between SEATS and Bionic Bus when one receives a request they cannot serve. This alternative does not involve any increase in the current level of service being provided by SEATS or Bionic Bus, only a more effective use of the present service. Under the present arrangement, if SEATS receives a request from a non-University related person which they are unable to serve, there is no policy permitting Bionic to serve the request. This is true to a much lesser degree in the reverse situation since SEATS will serve a University related person providing they first attempted to use the Bionic service.

The subcommittee recommends that if SEATS receives a request they cannot serve, and if Bionic Bus has the capacity available, that SEATS refer the request to Bionic and that the University be compensated for providing that trip. Similarly, if the Bionic Bus cannot serve a trip request that SEATS can, that person will be referred to SEATS and SEATS will be compensated. At the end of every month the trips that each system has served for the other will be cancelled on a one-for-one basis.

If after the trips have been cancelled one system has provided more trips, those trips will be compensated at a rate of $2.50 per trip. It is felt that this amount is adequate to cover the cost of fuel and maintenance of the vehicle. There would be no additional labor costs since the service would already be in operation.

Projected Costs of Recommendation C:

Since it is anticipated that the Bionic Bus will provide more trips than SEATS under this arrangement, the costs of this recommendation will fall upon Iowa City and Coralville. An allocation of $750 from Iowa City would be sufficient for 300 trips and $250 from Coralville for 100 trips.

Conclusion:

The subcommittee feels that these three recommendations will satisfy a considerable portion of the deficiencies identified in the current service. The expansion of SEATS hours and coordination with the Bionic Bus will permit electric wheelchair users an opportunity for transportation via a lift-equipped vehicle. The remainder of the manual wheelchair users can take advantage of the subsidized taxi service. The coordination of SEATS and Bionic Bus will alleviate the concerns UMTA has raised about using the Section 3 funded vehicle to carry the general public. All of the recommendations are flexible enough to allow monitoring and fine-tuning as necessary.

The subcommittee recognizes that these recommendations may not serve the total demand for transportation from elderly and handicapped individuals; however, it is felt that they are a significant improvement of existing services. It is nearly impossible to measure the demand for this type of transportation until the service is actually provided. It is very likely that handicapped persons who previously could not obtain employment due to lack of transportation will now be able to maintain steady employment.

Total cost projections of these three recommendations are:

Recommendation	Iowa City	Coralville
A	$3,728	$ 607
B	2,000	1,000
C	750	250
Total	$6,478	$1,857

It might be useful to note that the total expenditures by Iowa City for specialized elderly and handicapped transportation ($52,000 - SEATS Contract, $4,000 - Taxi Contract, and $6,478 - Recommendations) represent 3.9 percent of Iowa City Transit's FY82 budget. Similarly, the expenditures by Coralville, ($7,500 - SEATS Contract and $1,857 - Recommendations) represent 2.1 percent of Coralville Transit's budget.

Since these specialized transportation improvements are meant to supplement the fixed route services, it seems logical that Iowa City

should assess the City of University Heights for a portion of the cost of these improvements.

I am certain that the Iowa Department of Transportation would look extremely favorably towards funding these improvements with State Transit Assistance beginning in FY83. The Iowa DOT is always attempting to fund "specific projects" of the transit system in lieu of general operating subsidies.

I would like to thank the members of the subcommittee, local transit managers, and members of the handicapped community who provided valuable assistance to the JCCOG staff in this effort. I am looking forward to discussing these ideas with you at our next Board of Directors meeting.

Thank you.

bdw/sp

cc: Don Schmeiser
Neal Berlin
Transit Managers