

SECTION V
RIDERSHIP PROJECTIONS

The demographic analysis of the Tysons Corner, Vienna, McLean and Falls Church service areas has revealed the following data: There are population densities in the area of 4,000 to 6,000 persons per square mile, with concentrations of population of up to 10,000 persons per square mile.^{1/} An analysis of the population indicates that the net group of non-commuter transportation users is 75% of the population, with just under half of the households having one or no automobile. This leaves a very large group of individuals who are in need of off-peak transportation service for shopping, recreational and medical trips.

1976 traffic counts in the area range from 25,000 to 46,000 autos per day using the major arterials in and out of the Tysons Corner complex area.

Based on this data a ridership level of from 8 - 25 persons per bus trip was arrived at. The other factors entering into the projected ridership involve the fare structure, a 25¢ fare yields more ridership than 50¢, and the amount of marketing and advertising that is carried on to sell the new system.

The lower range of ridership, eight persons per trip, is a good indicator of the initial patronage to expect for a new system. As the system becomes known and accepted in the community, there will occur a gradual increase in patronage to the twenty persons per trip range.

^{1/} See Appendix XII for details.

TABLE VI
OPERATING COSTS & REVENUES 1ST YEAR
(8-10 PASSENGERS PER TRIP)

VEHS.	RIDERSHIP		REVENUE		TAXI .47	RIDE ON 1.15	WMATA 2.16	DEFICIT TAXI		DEFICIT 25c FARE		DEFICIT 50c FARE	
	.25	.50*	.25	.50				RIDE ON	WMATA	RIDE ON	WMATA	RIDE ON	WMATA
1	35,360	30,056	8,840	15,028	18,281	44,730	84,015	9,441	35,890	75,175	3,253	29,702	68,987
2	70,720	60,112	17,680	30,056	36,562	89,460	168,031	18,882	71,780	190,351	6,506	59,104	137,975
3	106,080	90,168	26,520	45,084	54,843	134,190	252,046	28,323	107,670	225,526	9,759	89,106	206,962
6	212,160	180,336	53,040	90,168	109,686	268,381	504,091	56,646	215,340	451,052	19,518	178,212	413,923

* Ridership is reduced 15% with 50c fare over 25c fare.

** Costs based on loops 11 miles long
12 hour day
8 hours Saturday

Total 748 miles per week x 52 weeks = 38,896 Revenue Miles

TABLE VII
OPERATING COSTS & REVENUES 1ST YEAR
(22-25 PASSENGERS PER TRIP)

VEHS.	RIDERSHIP		REVENUE		TAXI	RIDE ON	WMATA	DEFICIT 25c FARE		DEFICIT 50c FARE	
	.25	.50*	.25	.50				TAXI	RIDE ON	WMATA	TAXI
1	88,400	75,140	22,100	37,570	.47	44,730	84,015	22,630	61,915	7,160	46,445
2	176,800	150,028	44,200	75,140		89,460	168,031	45,260	123,830	14,320	92,890
3	265,200	225,420	66,300	112,710		134,190	252,046	67,890	185,745	21,480	169,335
6	530,400	450,840	132,600	225,420		268,381	504,091	135,780	371,490	42,960	338,670

* Ridership is reduced 15% with 50c fare over 25c fare.

** Costs based on loops 11 miles long

12 hour day

8 hours Saturday

Total 748 miles per week x 52 weeks = 38,896 Revenue Miles

Tables VI and VII - Operating Cost and Revenues 1st Year, give a breakdown of each ridership level in terms of revenues and deficits based on 25¢ and 50¢ fare levels.

OPERATING COSTS

The various management options have outlined who or what agency should run the particular operation. This section on Operating Costs will define current costs of each type of operation and review the revenue side of the operations.

The 1978 Operating Costs for each type of operation are as follows:

WMATA

Incremental Peak - \$1.24/Revenue Mile plus
\$30.25/Revenue Hour
(\$3.26 per mile at 15 mph)

Base Day - \$0.80/Revenue Mile plus
\$20.35/Revenue Hour
(\$2.16 per mile at 15 mph)

Local Government Operations (Ride On)

All Day - \$0.50/Revenue Mile plus
\$11.20/Revenue Hour
(\$1.15 per mile at 15 mph)

Contracted Service (Reston's RIBS)

All Day - \$0.56/Revenue Mile plus
\$9.86/Revenue Hour
(\$1.22 per mile at 15 mph)

Taxi Service (Arlington)

- \$0.30/Revenue mile plus
\$2.49 Revenue Hour
(\$0.47 per mile at 15 mph)

These costs were used as estimates for each of five options.

On the revenue side, ridership and revenues were calculated at 25¢ and 50¢, as well as deficits and patronage.

Tables VI and VII give a complete picture of the effect of each fare on ridership and revenues, as well as the cost implications for each type of management operation.

CAPITAL COSTS

In most cases the options offered for consideration do not involve capital expenditures. The exception to this would be options 3 and 5, if a local government were to establish a jitney system rather than contract with a private operator for this service.

At the present time costs range from a low of \$6,500 for a twelve passenger Van, to \$55,000 for a heavy duty 32-passenger bus. The vehicle that would best suit the jitney loops would be a twenty-five passenger minibus. These vehicles range in cost between \$22,000 and \$30,000. Table VIII gives the cost for various vehicles and Table IX gives the life span of the various types.

In order to accommodate the elderly and handicapped, who require the use of a wheelchair, lifts would have to be installed in the vehicles. These lifts can be manual or automated. The costs range from two to four thousand dollars per vehicle, in addition to the base price of the vehicle.

The addition of the lift also decreases the seating capacity of the vehicle. This has the implication of requiring a larger vehicle to carry the projected ridership.

TABLE VIII
SUMMARY OF SMALL VEHICLE COSTS 1977

Model	Manufacturer	Seating Capacity	Approximate Cost
<u>Vans</u>			
Club Wagon	Ford	12	\$7,000
Sport Van	Chevrolet	15	6,500
Model 2231	Volkswagen	9	6,300
Sportsman	Dodge	15	7,200
<u>Light Buses</u>			
Grumman	Grumman, Inc.	19	22,000
Argosy	Airstream, Inc.	19	22,000
Winnebago Series 19	Winnebago Industries	19	21,000
<u>Medium Duty</u>			
25' Carpenter Cadet (Diesel)	Carpenter Body Works	25	27,000
25' Carpenter Cadet (Gasoline)	" " "	25	22,000
30' Carpenter (Diesel)	" " "	35	29,000
Mercedes 0309D (Diesel)	Mercedes Benz	23	30,000
<u>Heavy Duty</u>			
Blue Bird Diesel	Blue Bird Corp.	32	55,000
Cutdown GMC	GMC/AC Transit	32	54,000

TABLE IX
EFFECTIVE LIFE CYCLE CAPITAL COST PER REVENUE MILE
OF ALTERNATIVE TRANSIT VEHICLES

<u>Vehicle Type</u>	<u>Purchase^{1/} Price</u>	<u>Service Life In Total Miles</u>	<u>Service^{2/} In Years</u>	<u>Capital Cost/ Revenue Mile</u>
Std. Transit Bus	\$80,000	420,000	12.0	\$0.39
Light Duty Small Bus	22,000	140,000	4.0	0.25
Med. Duty Small Bus	27,000	175,000	5.0	0.25
Heavy Duty II Small Bus	55,000	280,000	8.0	0.36
Vans	6,700	120,000	3.0	0.07

^{1/} Total ten year capital cost calculated at 8% interest using capital recovery analysis.

^{2/} Based on 35,000 total service miles per year.

WMATA Non-Std. Bus-1977
 NVTC 1978