para transit alternatives to off peak bus service

The Northern Virginia Transportation Commission

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Project Director: John J. Protopappas
Assisted by: David Erion, Richard Hawthorne, Diane Meier and Robert E. Johnson

CP

TAXI PROJECT

REVIEW OF PUBLISHED REPORTS

AUTHOR: NVTC

TITLE: Paratransit Alternatives to Off Peak Bus Service

DATE: 1978

DESCRIPTION: Study of Paratransit options, existing services in No Va, regulatory environment, proposals for initiating new service

COMMENTS: Provides info on taxi industry in N.V. which needs to be updated (p 35-40). Description of Alexandria's E+H taxi program indicates (p. 41) discount was given to program for "consistent business". Appendix XII provides analysis of alternative sites.

This report highlights need to clarify what current regulatory environment is. See Sec III + Appendix VI.

DOCUMENT PROVIDES INFORMATION ON:

Yes Fare & Accounting Procedures out of date

Yes Productivity Measures, but the year out of date

REVIEW DATE: 8/10/84

PARATRANSIT ALTERNATIVES TO OFF PEAK BUS SERVICE

JUNE 1978

NORTHERN VIRGINIA TRANSPORTATION COMMISSION
2009 NORTH 14th STREET
ARLINGTON, VIRGINIA 22201

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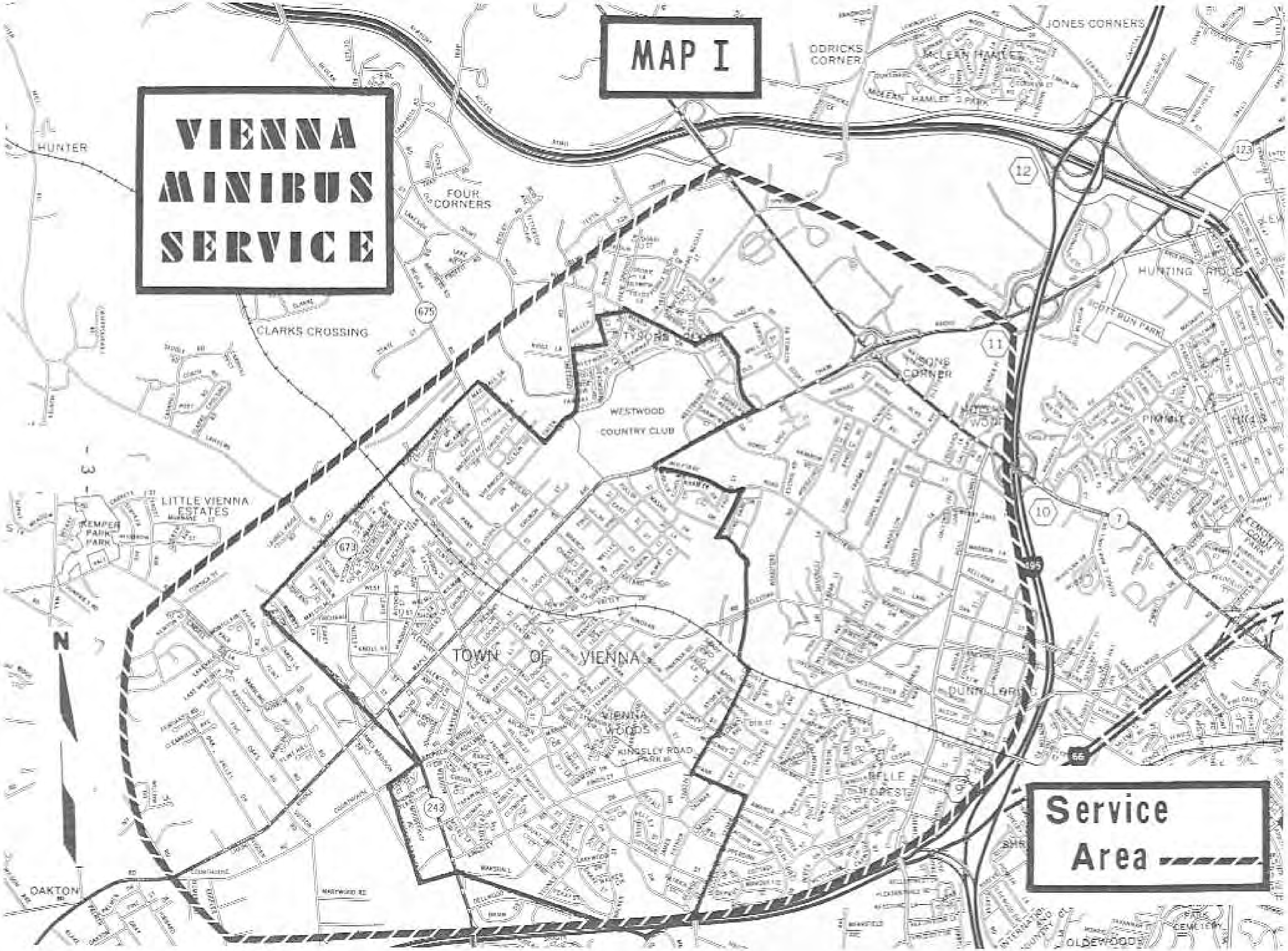
INTRODUCTION

This report summarizes the major findings and recommendations of the "Paratransit Alternatives to Off-Peak Bus Service" study for Northern Virginia, conducted by the Northern Virginia Transportation Commission. The study has been reviewed by and received valuable guidance and input from the staffs of the local jurisdictions and private industry.

The study provides an overview of the current thinking on paratransit systems, in terms of innovations, legality, and possible areas for its use. This information supplies the base from which new paratransit systems can be developed for various areas in Northern Virginia and establishes the precedent that paratransit systems can be an economical and efficient alternative to the traditional fixed route bus systems.

Several areas in Northern Virginia were looked at for implementation projects. Although the Tysons Corner area was chosen for the first project, two other areas are worthy of note. They are the Springfield area, which is growing at a rapid rate, and Old Town Alexandria where NVTC has recently completed a study. Both areas have large commercial and business areas and sufficient population densities to support some type of increased neighborhood transit service.



MAP I
VIENNA MINIBUS SERVICE
Service Area
HUNTER
FOUR CORNERS
CLARKS CROSSING
ODRICKS CORNER
JONES CORNERS
McLEAN HAMLET
HUNTING RIDGE
SCOTT RUN PARK
TYSONS CORNER
WESTWOOD COUNTRY CLUB
LITTLE VIENNA ESTATES
KEMPER PARK
TOWN OF VIENNA
VIENNA WOODS
KINGSLEY ROAD PARK
BELLE FOREST
DUNN LORING
OAKTON
PIMMIT HILLS
OLDEWOODS
N
123
12
11
10
7
495
66
675
673
243

The jitney loops would circulate through the neighborhoods on a fixed route and interface with Metrobus routes at Tysons Corner and along Route 123. Patrons of the system would hail the bus much like one hails a taxicab. Running this type of operation, with two vehicles, would allow the system to operate on one-half hour headways.

The lunch time shuttle, operating from 11:30 to 1:30, would circulate in and around the areas of Westgate, Westpark and Tysons Corner. The shuttle would operate with specific stops at each major installation and at the Tysons Corner Shopping Center. In addition to providing good lunch time service, it would benefit the entire system by increasing the number of passengers using the system and reducing the overall cost per passenger.

During the course of this study several privately operated paratransit systems were examined. From this analysis it appears that large scale unsubsidized paratransit systems are not economically feasible. However, the analysis did show that private enterprise can operate systems more economically than government run systems. Combined with sufficient backing by local governments, in the form of marketing and coordination, private operations are an attractive option when compared to WMATA or local government.

It is proposed here that Fairfax County enter into a contract with one of the privately owned and operated transportation companies in the area to provide the desired paratransit service and that this service be under Fairfax County's direct control.

An alternative to Fairfax County contracting for the service would be for NVTC to act as the contracting agency. This, however,

would only be desirable if an outside source of funds were found to operate paratransit services in Northern Virginia.

There are several ways in which contracting for services can be done. What is important is that the contract must give the private operator an incentive to increase productivity and on the other side give the local government the greatest control in keeping service standards high.

Advantages to Contracted Service

1. Increased Local Control Over Operations

   Since the private company would be under contract to the locality, exact services to be provided would be defined in the contract, as would the allowable costs associated with the operation.

2. Established Operations

   Hiring an already operating private company would insure that necessary trained management, maintenance, and operating staffs would be available.

3. Increased Transit Accessibility

   The neighborhood loops would bring transit closer to the public than today's system. In addition it would make the adjusted line haul service more accessible.

4. Experienced Operators

   A number of private operators already have experience with paratransit operations and would have no problem adding a new service to their operation.

5. No Capital Investments Needed

Since the contractor would supply their own vehicles, no public investment in equipment would be necessary to start the service.

6. Termination of Service

With a fixed term to the contract the local government would choose to end the service or change contractor if the service was not operating properly or up to expectations.

Disadvantages in Contracted Service

1. Costs and Profits

A private operator would include in his agreement a profit over the cost of providing the service.

2. Coordination Problems

In all the non-Metro options, the paratransit service would interface with Metrobus and rail services. This will require the coordination of headways and transfer procedures.

3. Fares

If a low fare, such as 25¢, were not adopted a fare structure would have to be developed to make the transfer to and from Metrobus an attractive alternative to the other modes of transportation.

Costs and Revenues

The annual operating subsidy for off-peak Metrobus service in the Vienna-Tysons corridor is estimated to be $299,000. This consists of

the costs for Routes 3V and 5W. The termination of the 5W route would reduce this amount by approximately $163,950 per year.

The current ridership level for the 5W, in the Vienna area, is six persons per trip, and 12 for the route overall. This ridership generates $22,800 a year in revenues, for an operating deficit of $163,950 per year.

If a two-vehicle jitney loop is substituted for the 5W service in the Vienna area, it can be expected to have an operating cost of $89,460 per year, with an estimated patronage of ten persons per trip; generating $17,680 in revenues, at a 25¢ fare level. The resulting operating deficit would be $71,780 per year. Compared to the current 5W Metrobus service this would be a decrease in subsidy of $92,170 per year.

Lunch Time Shuttle Service

The shuttle service envisioned here would operate from 11:30 A.M. to 1:30 P.M. Monday through Friday. It would, as a minimum, require one additional vehicle to provide 15-minute headways, eight trips during the service hours.

The additional operating expense would be approximately $12,000 a year, the exact cost being dependent on whether this service was part of an overall contract with an operator or a separate service. Estimated ridership is 15 persons per trip at a 25¢ fare level. This would result in revenues of $7,500 per year and an operating deficit of $4,500.

The combined operating costs and revenues for each of the systems are summarized below in Table A by year and in Table B over a five year period.

TABLE A

OPERATING COSTS, REVENUES AND DEFICITS

First Year

	Current Metrobus 5W	Jitney	Lunch Shuttle	Paratransit Total
Operating Costs	$186,750	$89,460	$12,000	$101,460
Revenues	22,800	17,680	7,500	25,180
Deficits	$163,950	$71,780	$4,500	$76,280

TABLE B

SUBSIDY LEVELS 5-YEAR PROGRAM*

	Metro 5W (40¢ fare)	Jitney (25¢ fare)	Lunch Shuttle (25¢ fare)	Paratransit Total
1 -	$163,950	$71,780	$4,500	$76,280
2 -	175,426	78,804	4,815	81,619
3 -	187,706	82,180	5,152	87,332
4 -	200,845	87,933	5,513	93,446
5 -	214,904	94,087	5,899	99,986

* Increases are based on 7% inflation factor with no fare increase.

It should be noted that the revenues suggested here do not take into account the increased patronage to Metrobus which may occur from transfers from the jitney, and lunch time shuttle service.

Advantages and Disadvantages of 25¢ Fare

Advantages

- 25¢ single coin
- Easy for passengers
- Encourages frequent trips
- Easy to administer
- Encourages short trip
- Establishes good image
- No need for complicated Metrobus transfer mechanism

Disadvantages

- Lower revenues
- May divert patrons from Metrobus
- Added cost for those transferring to Metrobus.

LEGAL OVERVIEW

The State of Virginia regulates paratransit activities through the State Corporation Commission (SCC), which is governed by the Motor Carrier Laws. These laws have evolved over the past 50 years from the Code of Virginia and numerous court cases which have interpreted the laws. These interpretations of the law have made many privately operated paratransit systems illegal. However, if the jitney system is operated only in one city or county, or is operated under contract to a city, county, or NVTC, it would be feasible since it would then be legal under current SCC regulations and NVTC enabling legislation.

TRANSPORTATION BROKER

In Northern Virginia there are a number of existing transit and paratransit systems. One of the problems with these systems is that many are unfamiliar or unknown to the prospective patrons. In addition, many of these systems are not coordinated, which leads to a duplication of effort and a waste of resources. The answer to these needs, as suggested here, is a Transportation Brokerage Service provided by NVTC.

The implementation of the Broker Service would initially involve a reorientation of current staff efforts toward more service directed work. This would include promoting van pooling, investigating areas for new services, putting together and distributing information flyers, lending assistance to groups to improve and establish paratransit services, and generally promoting transit and paratransit.

The following list are items that should be of particular emphasis for the Brokerage Service:

- Generate Increased Usage of Current Systems
  - In areas with little or no transit
  - In areas of low ridership
  - In employment centers
- Promote New Systems

  Introduce van pooling and promote the information matching service provided by COG.

- Funding

  - Increase awareness of funding mechanisms; promote new legislation that will help rather than hinder coordination of services.

  - Make full use of Federal, State and local funds which are already available.

This Broker concept would not involve any additional staff costs, but would probably involve an outlay of some monies for printing of needed materials.

In addition to the Brokerage Service, it is suggested that at some future date a Transportation Information Center be developed. This is not needed today, but as new systems are developed through the Brokerage Service and as Metrorail comes out to the suburbs, a need for such an Information Center oriented to Northern Virginia may develop.

PROGRAM FOR IMPLEMENTATION

The course to follow for implementation of this program involves the following steps:

First: NVTC should establish a Transportation Brokerage Service using inhouse personnel and summer interns.

Second: NVTC and the local jurisdiction, Fairfax County, should establish the exact routing for the jitney loop and lunch time shuttle.

Third: Determine if outside funds are available to fund the jitney loop. If no funds are available Fairfax County will have to determine if they wish to fund the system.

Fourth: Prepare a bid proposal and solicit bids from the private sector.

Fifth: Concurrently with #4, advertise the proposed changes in Metrobus service.

Sixth: Based on staff and public input decide a definite timetable to commence service.

Estimated Costs

Vienna jitney loop	$71,780
Lunch Time Shuttle	4,500
Transportation Broker	No new costs
Total Operating Subsidy	$76,280

Proposed Funding

Jitney loop - Fairfax County

Lunch Time Shuttle - Fairfax County

Current Metrobus Service

5W subsidy paid by Fairfax County - $163,950

Net reduction in subsidy = $92,170

INTRODUCTION

The current fixed route bus system in Northern Virginia is designed with the intended purpose of providing peak-hour commuter service to and from downtown work sites. Heretofore the improvements made in transit service have for the most part been made in the area of new or expanded radial routes serving the peak hour commuter. This commuter oriented type of transit service leaves "off-peak" service in the position of being a costly, often criticized, system of radial routes, largely ignoring the activity centers of the off-peak hours -- an UMTA official has suggested the following paratransit scenario as an alternative:

> In the morning a fleet of vans or minibuses delivers the resident of a low density suburban community to the local commuter rail station or express bus stop. During the day some of the same vehicles provide scheduled service from the community to the regional shopping, medical and other activity centers. Other vehicles provide demand-responsive shared-ride local transit service for children and adults without cars who wish to visit friends, go to the neighborhood swimming pool, the local library or other community centers. In the late afternoon the vehicles meet the commuter trains and buses and bring the returning commuters back to their homes. In the evening and on weekends part of the fleet doubles up as a local taxi system that responds to telephone requests for individual door-to-door transportation service. By adjusting the form of service to the changing temporal demand patterns, the paratransit fleet achieves a high rate of utilization and superior productivity, while providing at the same time a high level of service." 1/

In addition to being a more patron oriented transportation system, paratransit is also being looked at as an alternative to conventional fixed route Metro service because of its cost effectiveness. In the

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1/ Para-Transit: The Coming of Age of a Transportation Concept, C. Kenneth Orski, Associate Administrator for Policy and Program Development, UMTA, November 9, 1975, Williamsburg, Virginia.

suburbs, where there are low densities and dispersed travel patterns, paratransit systems can be considerably more efficient than fixed route service. The original experiments in paratransit had costs of from $1 to $3 per ride, which at the time seemed quite reasonable. However, since that time conventional service costs have risen to the same levels. "For example, a low density suburban Washington bus line showed an average cost of $2 per ride weekdays and over $12 per ride on Sundays;"[1/] the Washington system as a whole has an average cost of $.78 per ride",[1/] based on 1975 figures.[2/]

Paratransit systems on the other hand have begun to reduce their per rider cost. Montgomery County's Ride On service has a deficit of only 46¢, with an overall cost of 71¢ per rider. This system and others are described in Section II, Existing Paratransit Systems in Northern Virginia.

In a response to the need for reducing transit costs and improving transit productivity, this study was designed to evaluate and analyze Metrobus off-peak service in the Virginia suburba, and consider paratransit alternatives to this service.[3/] The study was divided into two phases; the first phase was an overview of the current status of existing paratransit systems, legal barriers to extended paratransit service, and a geographical delineation of possible areas for the implementation of paratransit service. The second phase of this study is an indepth analysis of one of the designated areas with defined paratransit options for implementation.

1/ Eldon Ziegler "Integration of Transit and Paratransit, 1977", TPB Conference Report.

2/ WMATA Non-Standard Bus Study, 1977, p.128.

3/ Appendix I

The first section of this study begins with an analysis of the paratransit systems available to Northern Virginia jurisdictions. The services examined include Hail or Phone services, Prearranged Ride Sharing, modified conventional Fixed Route bus service, CARTS (Community Auto Rapid Transit System), and a Transportation Brokerage system.

Section Two summarizes the current uses of paratransit modes in Northern Virginia, including the Reston RIBS, Vienna Jitney, Arlington's Metro Shuttle, and Alexandria's Shared-Ride Taxi.

Section Three is an overview and evaluation of the alternative paratransit modes in the context of what legal and institutional barriers exist, and suggests the means for overcoming these obstacles.

Section Four is an analysis of the various system management options and a discussion of the various funding mechanisms.

Section Five is a look at the ridership projections and system operating and capital costs.

Section Six is the analysis of five possible options for the Tysons Corner area. From these options, Option Three came to the forefront and was chosen as the recommended course of action. In addition, a transportation brokerage system was designed to complement the new paratransit system and to coordinate the existing transportation services in Northern Virginia.

SECTION I

CHARACTERISTICS OF THE VARIOUS PARATRANSIT SYSTEMS

In order to analyze a wide range of alternatives for providing local paratransit service in Northern Virginia, it is first necessary to detail the options that are possible. Fortunately, over the years the variety of options has greatly expanded; we are therefore, faced with a situation where variations and combinations of traditional and innovative systems can be integrated successfully. For the purposes of this study the options have been defined as follows:

- Hail or Phone Services
- Pre-arranged Ride Sharing
- Conventional Transit/Mini-Transit Systems

In an attempt to put these three types of service into proper perspective with the various other transportation modes available, the following table on the general service characteristics of each mode was designed by the Urban Institute.[1/] It has been made as simple as possible and is, therefore, limited in distinguishing between modes. Some of the service characteristics such as comfort, scheduling, reliability and safety are excluded from discussion.

In Section VI of this report several scenarios involving the grouping of these various services have been designed to illustrate how these modes can be blended together to create an overall increase in efficiency and service.

1/ See Figure I.

FIGURE I

GENERAL SERVICE CHARACTERISTICS BY MODE

Ride Characteristics	Para-Transit Modes							
	PRIVATE AUTO	HAIL OR 'PHONE SERVICES				PRE-ARRANGED RIDE SHARING SERVICES		CONVENTIONAL TRANSIT
		CARTS	Taxi	Dial-a-Ride	Jitney	Car Pool	Subscription Bus	
Direct route (DR) or Route deviations (RD)	DR	RD	DR	RD	RD	RD	RD	RD
Door to Door	Yes	Maybe	Yes	Yes	No	Yes	Maybe	No
Travel time spent as passenger (P) or driver (D)	D	P	P	P	P	P/D	P	P
Ride shared (S), or private use (P)	P	P/S	P/S	S	S	S	S	S
System routes fixed (F), semi-fixed (S), or variable (V)	V	S	V	V	S	S	S	F
Access determined by prior arrangement (A), fixed schedule (F), telephone (P), street hailing (H), or at user's discretion (U)	U	H	H/P	P	H	A	A	F
Vehicle parking required (yes or no)	Yes	Yes	No	No	No	Yes	Yes/No	No
Convenient for baggage	Yes	Maybe	Yes	Maybe	Maybe	Maybe	Maybe	No

Source: Kirby "Para-Transit", p. 8.

HAIL AND PHONE SERVICES

The major systems covered under this heading are taxis, dial-a-ride operations and jitneys. The taxi has been around for the longest time and continues to play a significant role in supplying a necessary transportation mode to many areas of Northern Virginia.

Taxi Service

Taxi operations are owned and operated by the private sector, with heavy regulation by State and local governments. The recent history of taxi operations in Northern Virginia has seen a major shift from one-owner fleet operations to single cab ownership and lessor operations. This has evolved from unfavorable financial conditions arising out of recent Federal tax rulings. This shift has had the benefit of giving each operator more say on how to run his particular taxi, but it has the concurrent effect of decreasing the fleet manager's authority. In all, the taxi market is in need of rejuvenation because of market demand which is decreasing, first because of continually higher fares and, second, because of competition from the public sector. It is for this reason that many taxi operators are increasingly interested in providing new and additional transportation services to increase their profits and productivity. In Section II (Existing Paratransit Systems) of this report a detailed description of Northern Virginia taxi operations is presented.

Jitney Service

Jitneys are a unique hybrid transit service, half a taxi, service that can be hailed from the street, and half conventional transit since they operate over the same fixed route daily.

The typical jitney service has the following characteristics:

- A small van or bus, with a seating capacity of from 5 to 20+ passengers.
- Operating over a fixed route with no permanent stops.
- Short headways and no fixed schedule.
- Able to deviate on demand from the fixed route.

(Figure I briefly summarizes the typical service characteristics.)

The flexibility of the jitney is what made it a very popular mode of travel early in this century. Trolley lines were slowly extending out over fixed routes from the central cities and at the time were very overcrowded. During this period private jitney operators came on the scene to capitalize on the excessive demand. Eventually, as the route structure of the trolleys became more sophisticated, the jitneys came to be looked on as more of a problem by the trolley operators because they were taking away business. To put a halt to this "unfair" competition extremely repressive laws were promulgated which effectively put a halt to almost all jitney operations in the United States. This is the heritage we are faced with today in Virginia. Jitneys are by definition in the Motor Carrier Laws, illegal. However, in many of the Northern Virginia suburbs jitney operations would be viable where low densities cannot support peak hour fixed route bus routes. They could also be used to replace off-peak fixed routes where patronage is too low to support the bus route. For it is generally accepted that jitneys would attract ridership in low density areas because of their superior service characteristics.

In summary, jitney operations are well suited for the areas of Northern Virginia where gaps exist in the current fixed route bus system, for replacing little used off-peak bus service and for increasing the general mobility of the captive rider groups, the elderly, handicapped, teenagers, and one-auto households.

Dial-a-Ride (DAR)

Dial-a-Ride (DAR) service, or Demand Responsive Service (DRS), is designed to provide door-to-door service on demand to anyone in a defined service area. The service is usually initiated by telephone and is available to a number of users with different origins and destinations. DAR's usually involve a small fleet of vehicles, taxis, vans, or minibuses that are radio-dispatched. While traveling from origin to destination the user shares the ride with others who are traveling in the same general direction or neighborhood. During the course of the trip the vehicle will make small detours to pick up and drop off passengers, as well as packages. These deviations are usually limited by the dispatcher to keep travel times down to a minimum. The ride-sharing aspect is meant to increase the efficiency of the vehicle while still providing demand responsive service.

There have been a number of systems of this type set up all over the country, with varying degrees of success and costs.

One such system was developed and operated in Fairfax City, but failed for a number of reasons which are further described in Section II.

Up until recently all these operations have been run by government agencies; however, as of late private taxi operators have begun to contract for these services. These private operations have proven to be much more economical than the public operations, which gives hope that new DAR systems may be developed.[1/]

The potential for dial-a-ride systems is quite broad. These systems can be used as feeders to line haul transit; as replacement service for conventional transit in low density areas or at periods of low demand; and providing specialized services for the elderly and handicapped.

CARTS - Community Auto Rapid Transit System

CARTS, which is a concept developed to relieve peak hour auto congestion is based on a simple idea: Turn some of the commuter automobiles into shared-ride vehicles that pick up and discharge passengers on a relatively fixed route.

Basically this is how the system works: Dirvers who wish to participate in the CARTS program are first screened for their safety record, police record and insurability. They are then issued a decal and flag for their automobile which identifies them as CARTS drivers. The decals are color coded to indicate the vehicle's destination for both home-to-work and work-to-home trips. The drivers than make one pass through a designated pickup route in their neighborhood or job site to search for passengers, passengers flag any vehicle heading for their destinations. Fares are paid directly to the driver but are fixed by a local regulatory agency. A fixed-schedule conventional bus service would pick up straggler passengers.

1/ See Appendix II, (ITA Taxi Cab Management Magazine)

This system could also be used to feed existing bus and rail terminals.

Since this is a program for peak-hour commuters, I am not going to go into any more detail about CARTS. If the reader wishes more information, I refer them to the Mitre Corporation's publication "An Outline of a Proposal to Test Community Auto Rapid Transit Systems (CARTS), 1975.

PREARRANGED RIDE SHARING SERVICES

Subscription Bus Service

This service is designed to guarantee a seat to travelers of a particular neighborhood from their door, or defined pick-up points, to line-haul transit or to some other common set of destinations. This prearranged ride-sharing service has great diversity among operating modes, e.g., company-sponsored van pools, company sponsored bus service, neighborhood cooperatives, school buses with volunteer drivers, chartered buses as in Reston, and even shared-ride taxicabs.

This type of operation has been particularly successful in the distant suburban areas where there is limited fixed route transit service, or little patronized bus service.

Subscription service in the Washington area has been successfully applied where large businesses have supported efforts to promote the use of the subscription service, thereby cutting down on the number of parking spaces required and reducing peak-hour congestion and in areas where there is strong community interest in such a service.

In Virginia, Colonial Transit has subscription service from Reston and Fredericksburg to downtown Virginia, District of Columbia locations, and to the Pentagon, and Gray Line has service to and from Mantua, Greenbriar, Sterling Park, and Fairfax City.

Car Pools/Van Pools

The typical carpool may have between two and six regular members, and usually rotates drivers and auto.

Participants either meet at one common point and depart from there to a common work site, or they rotate picking up members of the pool and then proceed to work. Van pools have the same basic concept of ride-sharing, but use a company-owned or participant owned van to travel to and from a common work site. The usual arrangement in a company-sponsored van pool program is such that one individual, the driver, is assigned the vehicle and has free use of it so long as he or she drives a set number of fellow employees to and from work. The riders in the van pool pay the expenses of running the van and the driver is responsible for maintenance.

In privately operated van pools numerous arrangements are made up by the participants based on their company's sponsorship or lack thereof. The operational aspects are similar to company run programs.[1/]

1/ For more information on Van Pooling see VDH&T report titled Organizing and Operating a Van Pool Program, September 1976.

CONVENTIONAL TRANSIT/MINI-TRANSIT SYSTEMS

When we speak of conventional transit systems, we are referring to scheduled, fixed route, fixed fare, line-haul types of systems, using the standard type bus vehicle. In the Washington area Metrobus is our conventional transit system.

Mini-transit systems are also fixed fare and fixed route, but employ a much smaller vehicle and are confined to a small service area. Reston Virginia operates such a system, it is described in detail in Section II, Existing Paratransit Systems.

Mini-transit systems are able, because of their smaller sized vehicles, to reach into neighborhoods where the large conventional buses would not be readily accepted by the residents. These smaller vehicles can be set up in a number of different configurations. (See Figure II.)

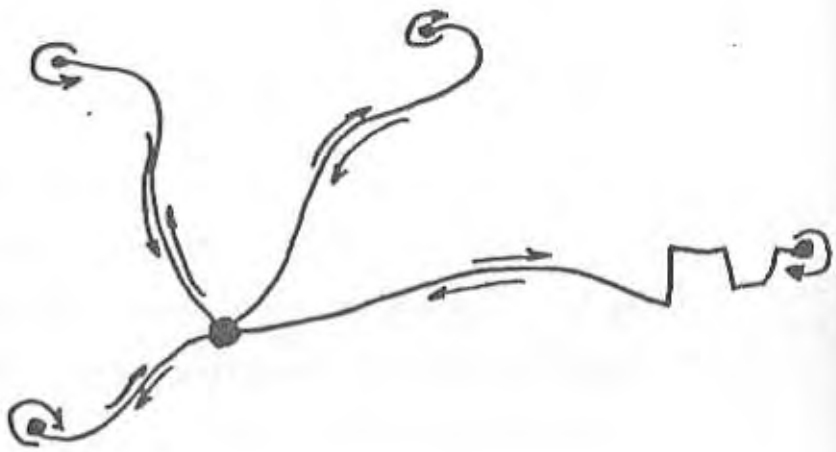
- Conventional Routing, radial in nature going to a high sensity activity center.
- Partial Loops, navigating through a neighborhood before heading for a terminal point, and
- Full Loops, minibuses circling through a neighborhood with a terminal for transferring to another neighborhood loop.

The main objective gained by using a mini-transit system is the flexibility of the smaller vehicles versus that of the large conventional buses.

FIGURE 2

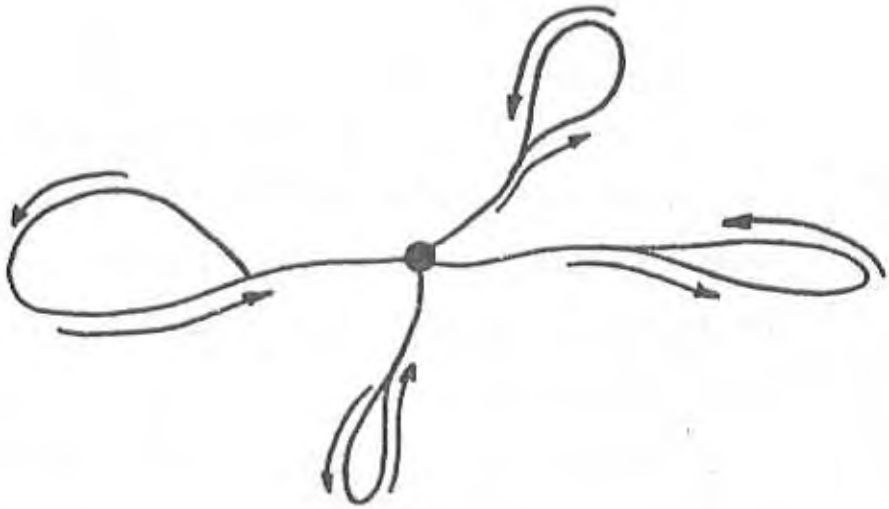
ROUTE SYSTEMS

1. Conventional Metrobus Routes and Subscription Service



2. Partial Loop Routes

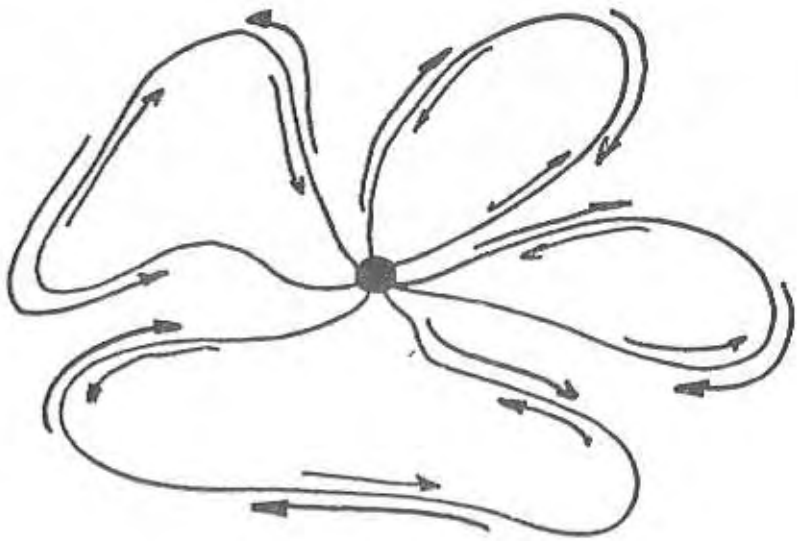
Jitneys and mini-buses.



3. Full Loop Routes

Jitneys

Minibuses



TRANSPORTATION BROKERAGE

In Northern Virginia there are a number of existing transit and paratransit systems. One of the major problems with these systems is that they are not coordinated. In addition many are unknown or unfamiliar to the prospective patron. An answer to this problem is the "ride-sharing brokerage" system. This concept would be implemented at a regional or local level. It involves some agency assuming the role of marketing and coordinating transportation services. In this role the agency designated aggressively seeks out available transit and paratransit services, subscription buses, van pools, car pools, shared-ride and exclusive use taxis, and elderly and handicapped paratransit services, as well as potential riders. It would then match these two elements to provide a viable alternative to dependence on the automobile.

There are great variations as to how such a service would be developed. In the Washington area one Maryland County has a Transportation Information Center which gives information out to perspective users of all the forms of transit available, but does not actively seek out patrons. On the other side of the spectrum is Norfolk, Virginia, where not only is information about transportation available, but the City also solicits business and is designing paratransit systems to meet the latent demand for services.

SECTION II

EXISTING PARATRANSIT SERVICES IN NORTHERN VIRGINIA

Presently, Northern Virginia has six major paratransit systems in operation and has experimented with three types of paratransit service over the past few years. The taxi has been the most longstanding service, having begun in the early part of this century. For this reason, this section begins with a thorough analysis of the taxi industry in Northern Virginia. From that point of departure, a jurisdictional analysis of each of the other paratransit systems will be presented.

THE NORTHERN VIRGINIA TAXI INDUSTRY 1977

The taxicab industry in Northern Virginia is typical of the industry throughout the country and similar to that of the surrounding suburban areas in Maryland; it is however, completely different from the industry in the District of Columbia. In Northern Virginia, each jurisdiction has set a limit on the number of taxicabs it will license; in addition, each taxicab is required to have a fare meter. The District of Columbia, on the other hand, operates under a "free entry" system; that is, there is no legal restriction on the total number of taxis that can be licensed. The City is also unique in that the taxis operate under a fare zone system[1/] versus fare meters. This difference offers transportation planners and officials an excellent opportunity for comparison of the two different systems.

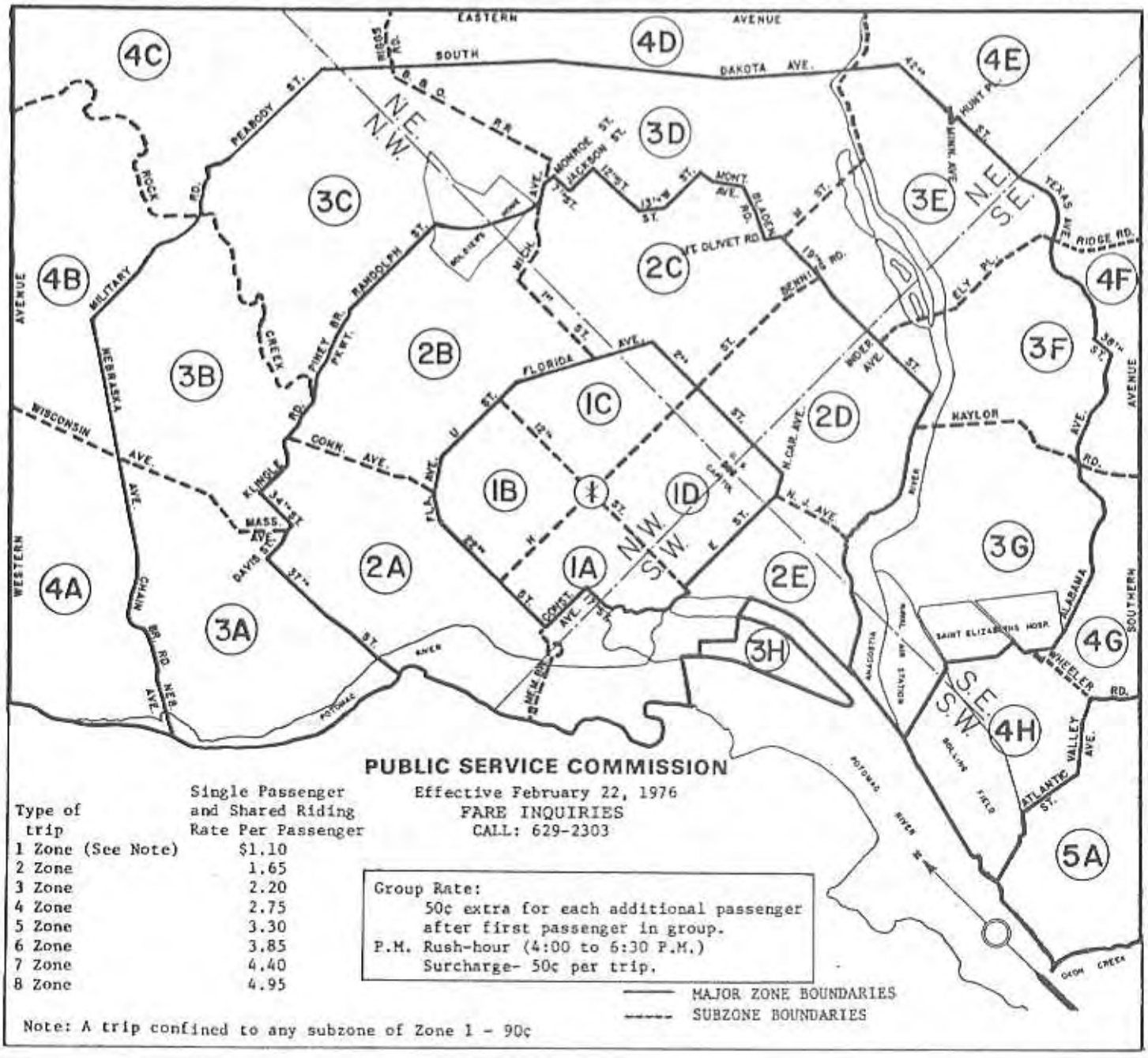
1/ See Map II for zones and fares in the District of Columbia.

MAP II

D.C. TAG NO.

TAXICAB ZONE MAP

APPENDIX A TO ORDER NO. 5769



PUBLIC SERVICE COMMISSION

Effective February 22, 1976
FARE INQUIRIES
CALL: 629-2303

Type of trip	Single Passenger and Shared Riding Rate Per Passenger
1 Zone (See Note)	$1.10
2 Zone	1.65
3 Zone	2.20
4 Zone	2.75
5 Zone	3.30
6 Zone	3.85
7 Zone	4.40
8 Zone	4.95

Group Rate:
50¢ extra for each additional passenger after first passenger in group.
P.M. Rush-hour (4:00 to 6:30 P.M.)
Surcharge- 50¢ per trip.

——— MAJOR ZONE BOUNDARIES
----- SUBZONE BOUNDARIES

Note: A trip confined to any subzone of Zone 1 - 90¢

Characteristics of Taxi Operations

In Virginia, the State Legislature has given the localities in Northern Virginia the powers necessary to regulate taxi operations in their respective jurisdictions. The only qualification to this is when taxi operations cross jurisdictional boundaries, the State's Motor Carrier Laws dictate that taxi operators must be licensed by the State Corporation Commission. The licensing procedure is basically proforma once a local jurisdiction approves a taxi operation.

With respect to regulation and monitoring operations, each jurisdiction in Northern Virginia has a different approach. As can be seen in Table I, there are 17 different arms of government regulating taxis in Northern Virginia. Table II, Taxi Fares, indicates that Fairfax and Arlington have adopted the same fare structure, while Alexandria has recently increased their fares.

What this has lead to in the past is a domino type effect. When one jurisdiction approves a new fare structure, usually a higher one, the taxi operators use this as a precedent to show their localities that there is a need for a rate change.

Although taxi fares are similar in Northern Virginia, what is not comparable is the amount of service available. Table III shows the relationship between population and service availability. Comparing Arlington and Alexandria, which have roughly the same population densities, Alexandria has twice the number of cabs per person compared to Arlington, and three times the number of cabs per intra-jurisdictional employment.

Comparing the above to Fairfax is difficult because the population densities are much lower overall; however, if you look at where the taxicab companies are located, Falls Church and Springfield, and compare their service areas with those of Arlington and Alexandria, it can be seen that all the companies service similar population densities. This is due to the general trend of more taxi patronage in downtown central business district-type areas.

TABLE I

AGENCIES REGULATING TAXI INDUSTRY

Arlington County

County Board
County Manager's Office
Police
Arlington Transportation Commission
Office of Consumer Affairs

Alexandria

City Council
Chief of Police
Traffic and Parking Board
City Finance Office

Fairfax County

Board of Supervisors
Chief of Police
Director of Finance
Taxicab License Review Board
Department of Consumer Affairs (Consumer Protection Commission)

Vienna

Town Finance Office
(Business License Only)

Falls Church

City Council
(Regulation coordinated with Fairfax County)

Fairfax City

No regulation, city operators conform to regulations of Fairfax County.

Virginia

State Corporation Commission
(Permit for intrastate operations)

TABLE II

TAXI FARES IN NORTHERN VIRGINIA

	ARLINGTON	ALEXANDRIA	FAIRFAX 1/
First drop	60¢ (2/7 mile)	60¢ (2/8 mile)	60¢ (2/7 mile)
Thereafter	10¢ (1/7 mile)	10¢ (1/8 mile)	10¢ (1/7 mile)
Extra Passenger	60¢	6-12 years old 25¢ 13+ yrs. old 50¢	60¢ 1st/25¢ over 2
Waiting Charge	$7.20 hour	$8.00 hour	$7.20 hour
Baggage Charge	20¢ each after 2	20¢ each after 2	20¢ each after 2
Total 1st mile	$1.10	$1.20	$1.10
Additional Miles	70¢	80¢	70¢

1/ Includes Falls Church and Fairfax City

TABLE III

JURISDICTIONAL DEMOGRAPHIC DATA

	Arlington	Alexandria	Fairfax[1/]
Population (thousands)	157	117	589
Area (square miles)	26	15	418
Employment (thousands)[2/]	140	49	175
Population Density (thousands/sq.mi.)	6.0	7.8	1.3
Number of taxis	445	441	149
Taxis/thousand population	2.2	3.8	0.3
Taxis/square mile	17.1	29.4	0.4
Taxis/thousand employment	3.1	9.0	0.9

1/ Includes Falls Church and Fairfax City

2/ 1975 data, all other is 1976

* * * * * *

TAXI DRIVER STATISTICS

	Arlington	Alexandria	Fairfax[1/]
License Duration	2 years	1 year	1 year
License fee - original	$9.00	$8.00	$5.00
License fee - renewal	$9.00	$3.00	$3.00
Maximum driving time permitted per day	13 hours	13 hours	13 hours
Agency issuing "face"	Police	Police	Police
Written exam required	Yes	Yes	No
Number of drivers	2,183	907	1,250
Number of taxicabs	445	441	149
Drivers Per Cab	4.4	2.0	7.9

1/ Includes Fairfax City and Falls Church

Table IV is an overview of the industry and regulations imposed.[1/] Of significance here are the number of "hack inspectors"[2/] in each jurisdiction and the insurance requirements. These "hack inspectors" are the sole enforcers of regulations regarding actual operations. This fact helps to explain the difficulties encountered in getting accurate data about cab operations. One or two individuals trying to keep up with reviewing applications for prospective drivers, the same individuals to review required driver manifests and to inspect vehicles. This obviously is an impossible situation.

The second point mentioned in Table IV is the insurance requirements of 100/300/10. This amount of insurance costs between from $600 to $2,000 a year per vehicle; the exact cost is dependent on type of operation -- a driver owner, driver renter, etc. Superimposed on top of this insurance requirement is a reluctance on the part of insurance companies to insure taxi operations. To some extent, this is mitigated in Virginia by an assigned risk pool. This requires insurance companies operating in Virginia to accept a specified number of taxi operators.

Availability of Taxi Service

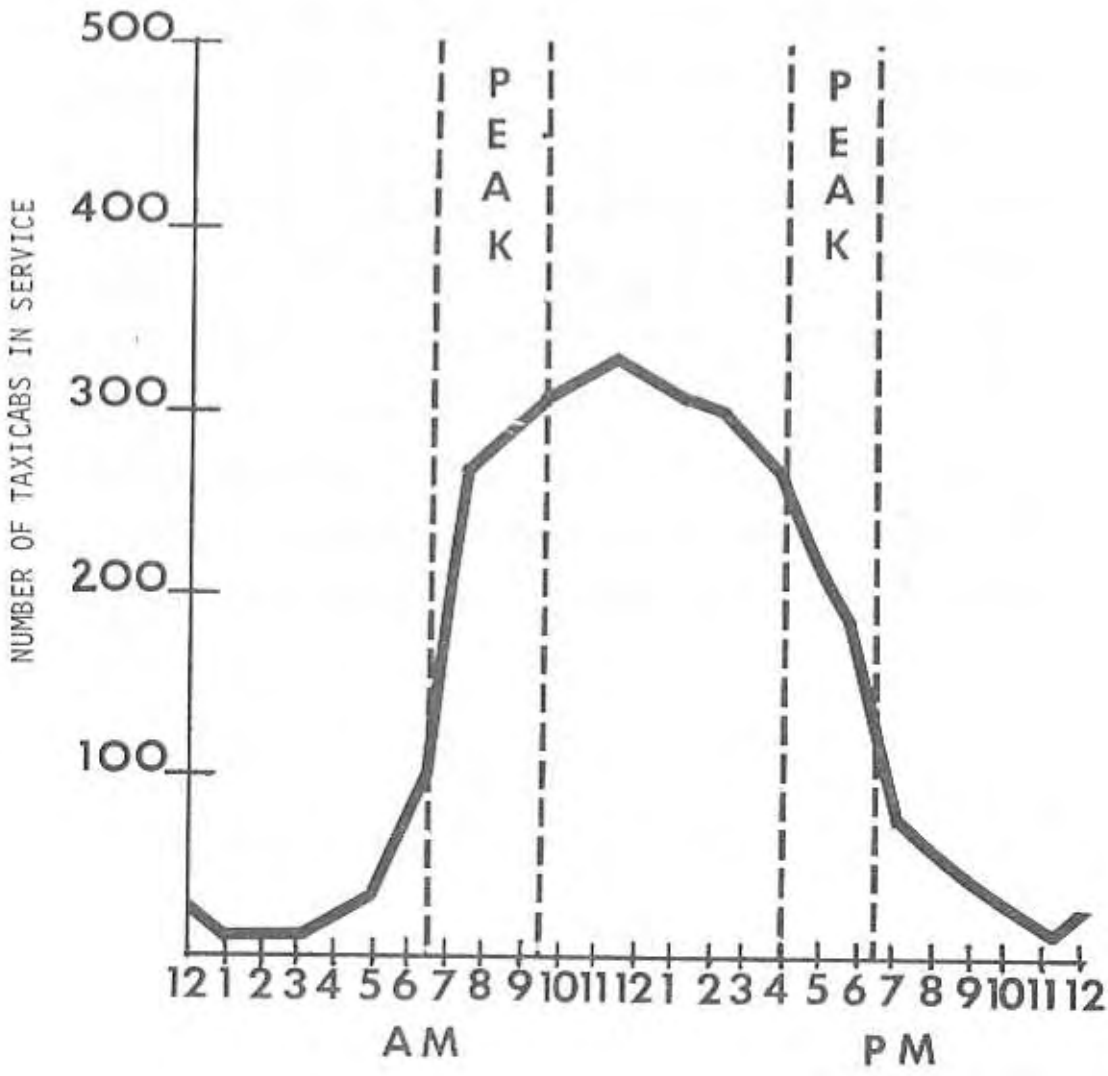
The two most frustrating things for the normal patron is the wait time and no-show of taxis. It has been said that in Northern Virginia the latter is not a problem, but try and get a taxi during the peak of rush hour and you become acutely aware of the typical operating characteristics of taxis. Figure III gives the typical number of taxicabs in

1/ See Appendix III for National Airport Regulations.
2/ See Glossary of Terms for explanation of this term, Appendix IV.

FIGURE III

NUMBER OF ARLINGTON COUNTY TAXIS ON THE STREET
BY TIME OF DAY

1976



Source: Arlington County Public Service Commission May 1976.

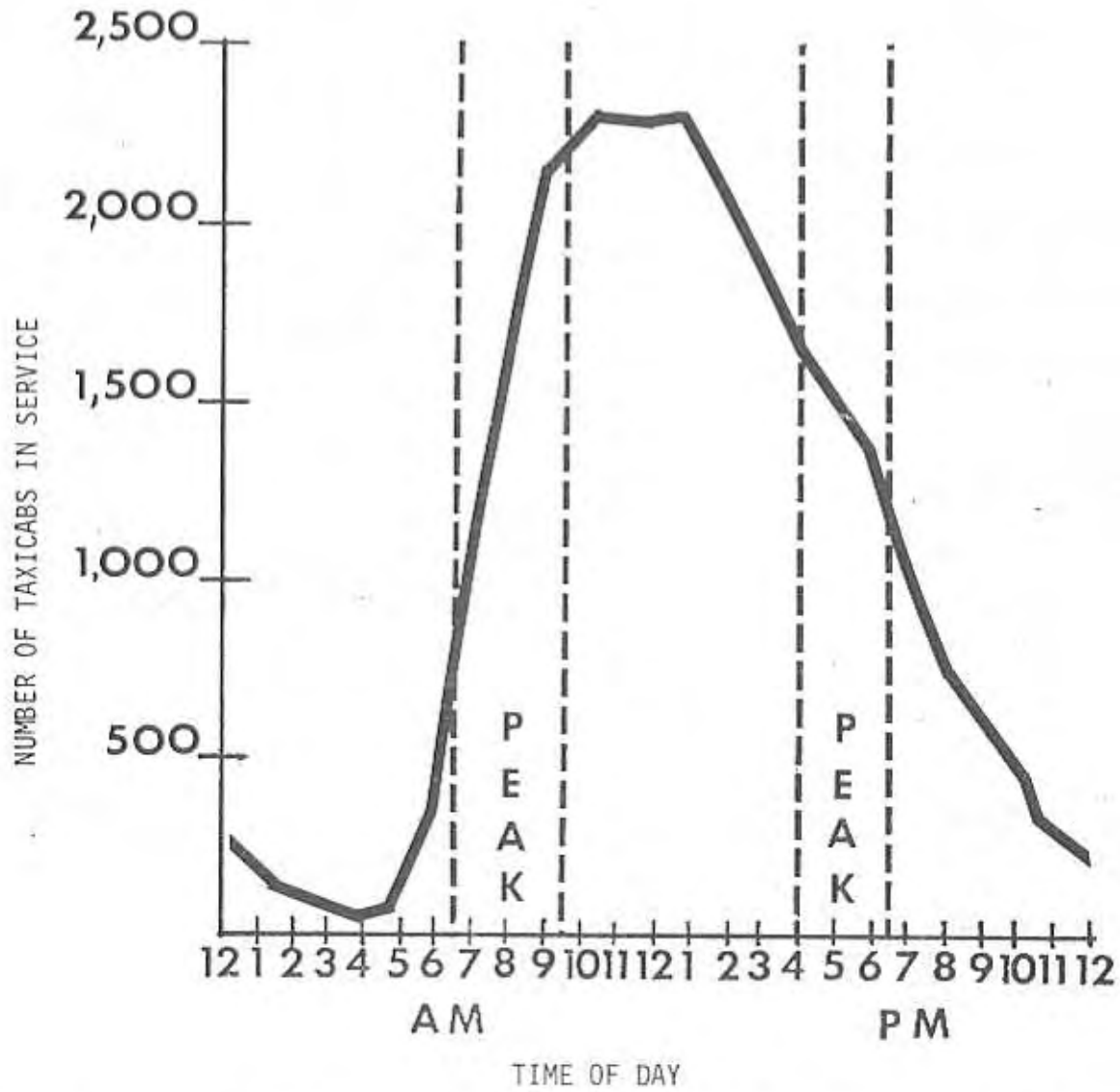
operation on a weekday in Arlington. The peak availability is during midday, indicating the taxi industry's great ability to provide mid-day off-peak service. The graph also shows the industry's lack of interest in operating at other times either because of lack of demand, or low profits because of rush hour traffic.

This peaking of service availability leaves a great surplus of taxicabs, which can be presumed to be a possible resource for better, more comprehensive transportation services to area residents.

For comparison purposes, Figure IV is enclosed illustrating taxicab availability in the District of Columbia. Although the absolute numbers are much higher, the shape of the curve and the hours cabs are available is very similar. During interviews with various operators and owners of taxicabs in Northern Virginia it became obvious that they are more than willing to expand their services if given sufficient backing. They also reaffirmed our own data which indicated that they have sufficient resources to handle increased paratransit services.

FIGURE IV

TAXICAB AVAILABILITY BY TIME OF DAY IN THE DISTRICT OF COLUMBIA



Source: Characteristics of Taxicab Service in the District of Columbia, WMCOG July 1970, page 3.

TABLE IV

PUBLIC VEHICLE PERMITS/VEHICLE DATA

	ARLINGTON	ALEXANDRIA	FAIRFAX COUNTY
Limit on number of permits 3/	445	441	---
Number of permits issued	445	441	149 1/
Number of vehicles	440	441	141
Number of vehicles with two-way radios	347	441	146
Number and types of vehicle inspections required annually	2 state 1 county	2 state 1 city	2 state 2 county
Number of "Hack Inspectors"	2 (part time)	1	2
Age limit on vehicles (years)	5	7	6
Mileage limits	200,000	No limit	300,000
Number of cab companies	8	8	4
Insurance requirements	100/300/10	100/300/10	100/300/10
Agency issuing permits	County Manager 2/	Traffic and Parking Board	Taxicab License Review Board
Minimum hours of operations for each cab company	---	24 hrs./day	24 hrs./day

1/ Includes 98 cabs in Falls Church area.
2/ On the recommendation of the Arlington Transportation Commission.
3/ See Appendix V for number of cabs per company

NVTC
1/10/78

CURRENT PARATRANSIT ACTIVITIES OF TAXI OPERATORS

Although it is the current thinking among taxi operators and decision makers alike that there is a greatly untapped transportation resource in the taxi industry for expanded paratransit services, there exists in Northern Virginia very few such operations. Notably among those employed is one in Alexandria, a subsidized taxi service to senior citizens and another in Arlington, Metro Shuttle Service.

Alexandria's Subsidized Taxi Service

The Senior Citizen Employment Services of Alexandria, a non-profit social service agency, currently has a user subsidy program underway in Alexandria, Virginia, using one of the major taxi operators in the City.

To use a taxicab for medical or shopping purpose an elderly individual must make a reservation one day in advance. The user pays 50¢ per trip, the program pays the rest of the charge, less a 15% reduction the taxi company gives for the consistent business.

The program is funded until Title III of the "Older Americans Act of 1965 as amended", and is therefore restricted to the elderly.

During the second year of operation this service had a total of 9,053 passenger trips.

Alexandria also has a Senior Trolley service, which employs one Grumman minibus. This service to the elderly carried 7,048 passengers during 144 days of operation in 1977.

Arlington County, Virginia, Metro Shuttle Service

Arlington County, in cooperation with the local taxicab operators, has recently begun a Metro Subway Feeder Service, using shared-ride

taxis. The establishment of this service results from a year long study by the County on the feasibility of such a service and the cooperation of the local taxi operators in taking the initiative to institute such a service.

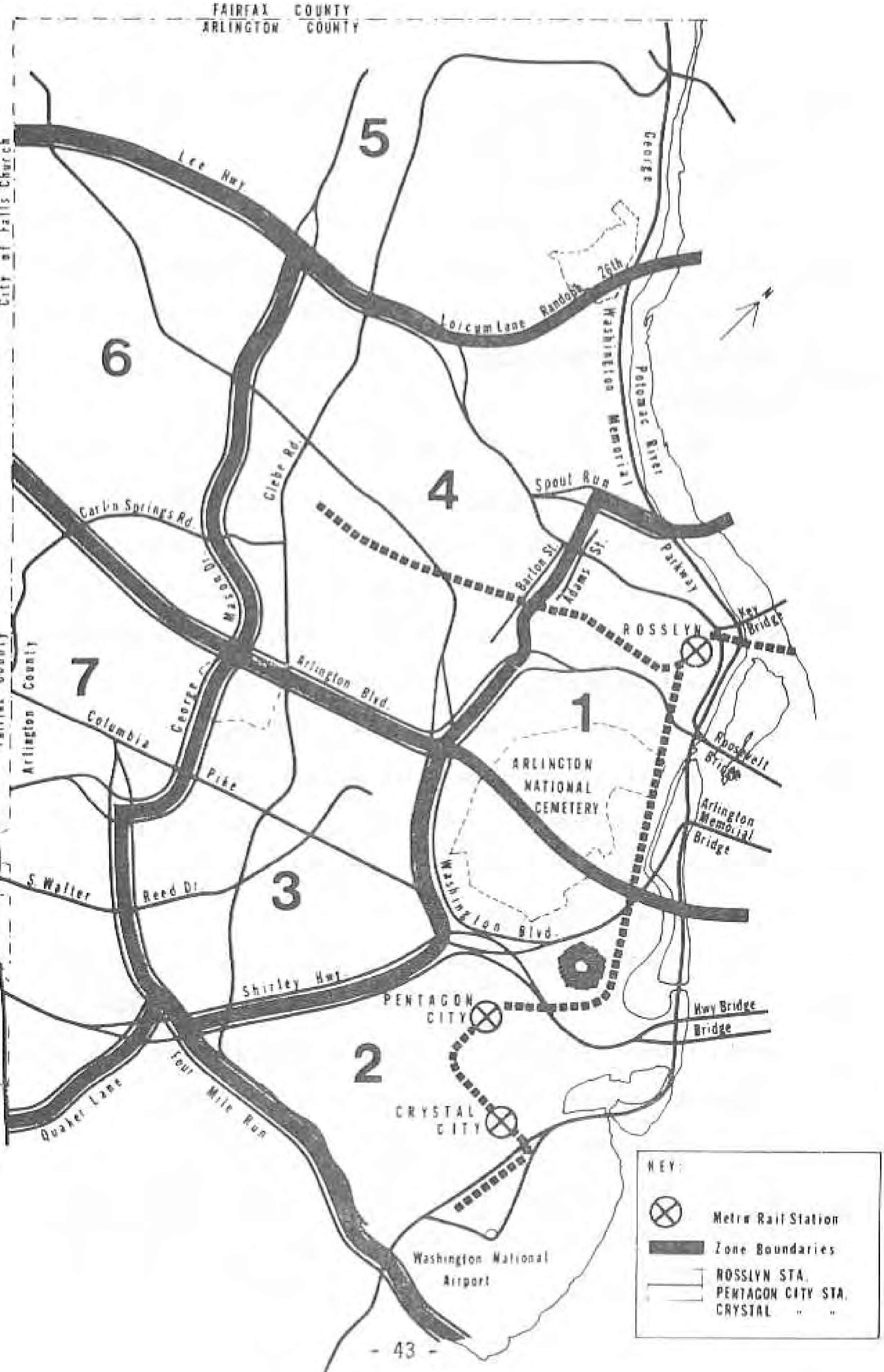
The Metro Shuttle provides service in the County to and from the Rosslyn, Pentagon City, and Crystal City Metrorail stations, with limited service on request to Arlington Cemetery and the Pentagon. This service if offered Monday through Friday with the exception of holidays between the hours of 6:30 A.M. to 9:30 A.M. and 3:30 P.M. to 6:30 P.M.

Passengers requesting service to the Metrorail stations are provided with service within one hour of the request, or on a subscription basis. Passengers requesting service from a Metrorail station are provided with service within ten (10) minutes after boarding.

Fares are based on a three zone system and vary from 90¢ to $1.95; see Map III for the location of the zones and Metro stations.

Although it is still too early to determine how successful this service will be, there does appear a commitment on the part of the County to support this system. Marketing will be an extremely important factor in shaping the public acceptance, and this, too, has been properly recognized by the County's staff and the private operators.

MAP III



FAIRFAX COUNTY
ARLINGTON COUNTY
City of Falls Church
Lee Hwy
5
6
4
7
1
3
2
Glebe Rd.
Spout Run
Carlin Springs Rd.
Arlington Blvd.
Columbia Pike
George
Parkway
Potomac River
Washington Memorial
Barton St.
Adams St.
ROSSLYN
Key Bridge
Roosevelt Bridge
ARLINGTON NATIONAL CEMETERY
Arlington Memorial Bridge
Fairfax County
Arlington County
S. Walter Reed Dr.
Washington Blvd.
Shirley Hwy.
PENTAGON CITY
Hwy Bridge
Bridge
City of Alexandria
Quaker Lane
Four Mile Run
CRYSTAL CITY
Washington National Airport
KEY:
Metro Rail Station
Zone Boundaries
ROSSLYN STA.
PENTAGON CITY STA.
CRYSTAL " "

OTHER PARATRANSIT SYSTEMS IN NORTHERN VIRGINIA

Fairfax County, Virginia

There are two prominent paratransit systems in Fairfax. The County, through its Area Agency on Aging, has contracted dial-a-ride, "Assist", services for the elderly, and Reston citizens operate a minibus circulation system.

"Assist"

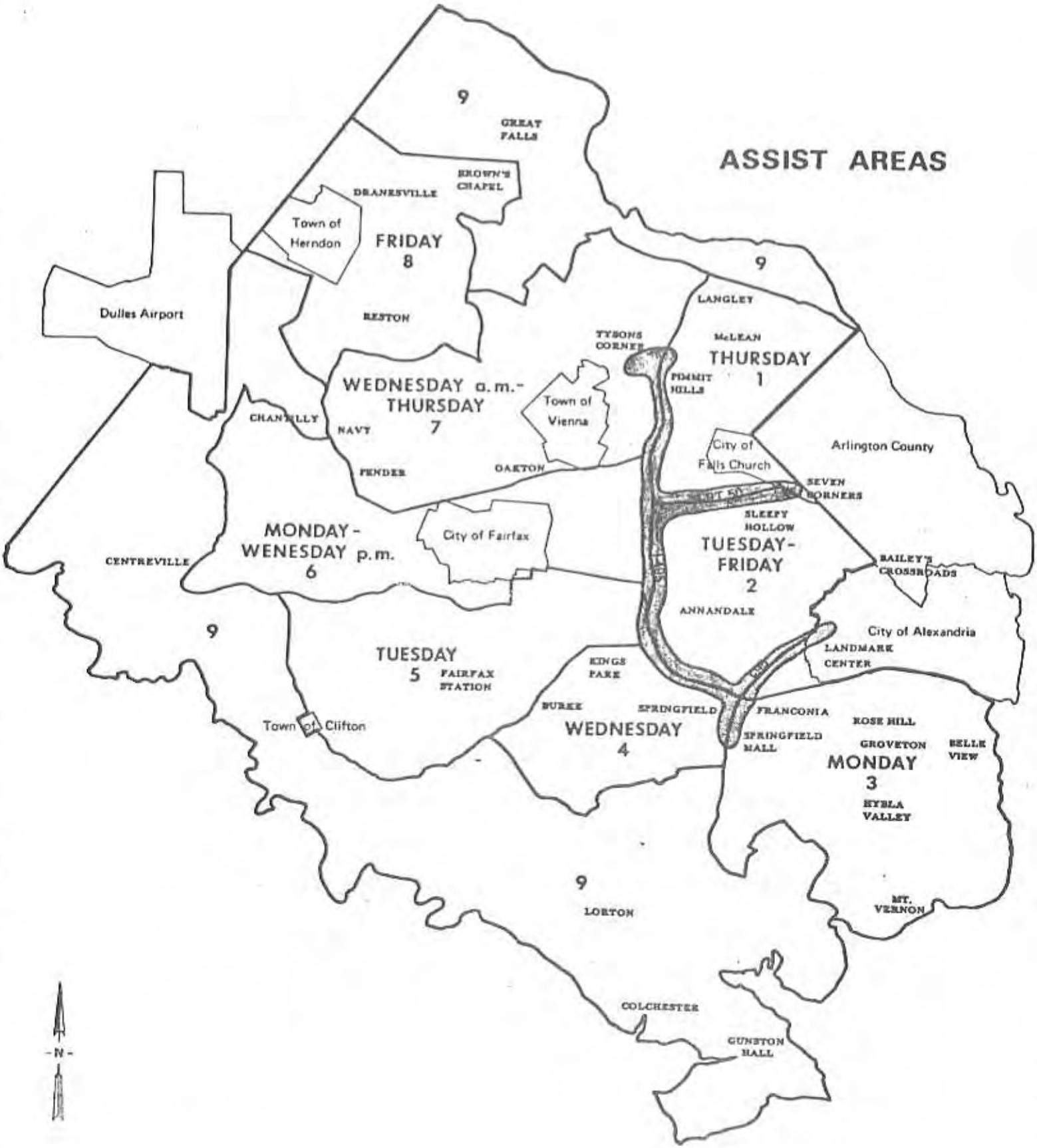
The Assist program is a new low cost shared-ride transportation system which is available Monday through Friday 9:00 A.M. to 5:00 P.M. to the elderly residents of Fairfax County. This program, on a rotating zone basis, supplies the elderly with a DAR or subscription service two to three days a week. In the words of the program outline, "Assist is designed to increase the mobility of senior citizens who need transportation for the following: Shopping, medical and dental care, business and other essential trip purposes".

Assist uses vans, without lifts, but drivers are under instructions to help all patrons in need of help into or out of the vans. The driver also helps with packages.

Map IV indicates the nine zones where service is available. Also on the map is the major transportation corridor. The map also indicates when service is available in each zone. The patron may ride anywhere in his or her zone and into any of the designated travel corridors. The fare is an optional 25¢.

The Assist program has been in existence since October 1977. In this time the ridership has increased from an initial 399 person trips per month to a current high of 810 person trips per month.

MAP IV


ASSIST AREAS
9
GREAT FALLS
BROWN'S CHAPEL
DRANESVILLE
Town of Herndon
FRIDAY 8
Dulles Airport
RESTON
9
LANGLEY
TYSONS CORNER
McLEAN
THURSDAY 1
PIMMIT HILLS
WEDNESDAY a.m.- THURSDAY 7
Town of Vienna
CHANTELLY
NAVY
FENDER
OAKTON
City of Falls Church
Arlington County
SEVEN CORNERS
RT 50
SLEEPY HOLLOW
MONDAY - WENESDAY p.m. 6
City of Fairfax
CENTREVILLE
TUESDAY - FRIDAY 2
BAILEY'S CROSSROADS
ANNANDALE
City of Alexandria
LANDMARK CENTER
9
TUESDAY 5
FAIRFAX STATION
KINGS PARK
BURKE
SPRINGFIELD
FRANCONIA
ROSE HILL
Town of Clifton
WEDNESDAY 4
SPRINGFIELD MALL
GROVETON
BELLE VIEW
MONDAY 3
SYBLA VALLEY
9
LORTON
MT. VERNON
COLCHESTER
GUNSTON HALL
-N-

Reston Internal Bus System

Reston is currently the only Northern Virginia community served by a minibus system. RIBS, the Reston Internal Bus System, Inc., is a second-generation system created after the termination of the Common Ground minibus service.

The Common Ground system was established by Reston Episcopalians, The Common Ground Foundation (CGF), in an attempt to answer the new town's transportation needs. In April 1972, the CGF inaugurated service with two small buses drive by volunteers along a double-loop route; the two loops reflect the town's being sliced in the middle by the Dulles Access Highway.

Twelve round trips of 24 miles each were completed on an hourly basis each weekday starting at 7 A.M. Passengers could hail the bus at any location along the route. An average of 120 passengers per day or 30,000 per year rode the minibuses.

The initial no-fare policy was soon replaced by a charge of 25¢ per passenger. Advertising on the buses and donations by local businesses and civic groups provided additional financial support. Although transit's major operating expense was avoided for a year by the use of volunteer drivers, the problems of recruitment and reliability forced CGF to hire drivers in 1973. The labor costs increased the financial strain on the system. Several times cessation of operations was prevented only by desparate fundraising efforts of the community. Finally, in April 1977 even funds from Fairfax County could not postpone the demise of the system. The vehicles became unusable and the Common Ground System was terminated.

RIBS initiated service on September 6, 1977. The $20,000 cost for each diesel minibus was paid with State grant monies. The buses had been used as demonstrators for Mercedes, and had mileages of 15,000 and 25,000 when RIBS obtained them.

RIBS is managed by a seven member Board of Directors appointed by the Reston Homeowners' Association (RHOA) which is subsidizing the system with a $17,500 grant for FY 1978. The RHOA grant has been matched by an equal allocation from Fairfax County, for a total first year operating subsidy of $35,000.

RIBS service operations have been contracted to Reston Mobility Services, Ltd. (RMS). The contract includes financial incentives and disincentives to encourage high performance. The contract standards relate to on-time performance, driver performance, vehicle cleanliness, and the month submission of an operations report.

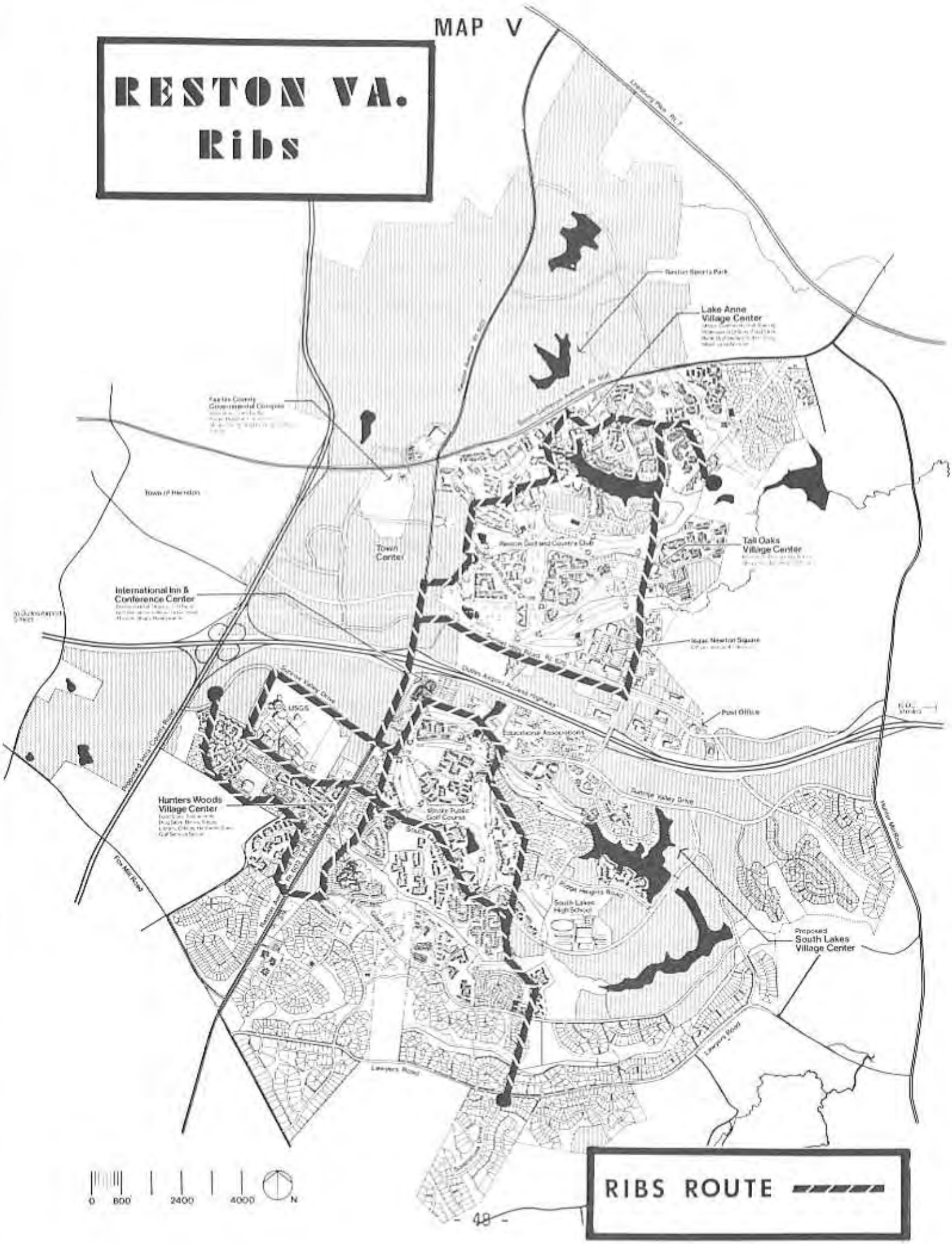
The RMS in-house incentive program increases the hourly wage by 10% for drivers who receive no complaints from passengers. Despite the relatively low base pay of $3.00 an hour, the driving jobs are attractive to local residents, especially women, because of the RMS policy of hiring only part time drivers; of the seven drivers, five are women.

RMS devised routes and schedules which differ significantly from the Common Ground bus system.[1/] Sixteen round trips are completed daily by RIBS buses. During the peak hours each bus makes four trips, while one bus makes all eight off-peak trips. The operating hours are 7:00 A.M. to 7:00 P.M., Monday through Friday.

1/ See Map V.

MAP V

RESTON VA.
Ribs



The Northbound peak trip consists of 18 miles from the Southern residential areas to all of the town's employment centers and back to the Southern sector. The southbound peak trip consists of 19 miles from the northern residential areas to all employment centers and back to the northern section.

Both peak and off-peak trips provide service to the following places:

1. The five subsidized low and moderate income housing projects;
2. Commercial and industrial areas;[1/]
3. Metrobus stops in the northern sector (Metrobus doesn't serve the southern sector).

According to RMS manager, Mike James, RIBS policy is to provide the best service to the residents of the subsidized projects and the apartment complexes because these persons tend to be transit-dependent. Originally, RIBS provided no service to large sections of Reston where single-family homes predominate. Complaints from residents of those neighborhoods prompted the addition of minimal service to that area during off-peak hours. RIBS' impressive average of 20 mph results from this policy, but at the expense of good service for all segments of the community.

At the end of 1977, RIBS was carrying an average of 110 persons daily. Average per mile ridership on the 308 passenger miles traveled per day is .36, as compared to .4 on the CGF system. Ridership has been increasing constantly, having started at seventy-four persons per day.

1/ Only peak hour buses stop at the U.S. Geological Survey complex.

Expense per mile for the Common Ground bus system was $.43, of which $.26 was actually paid by CGF. The rest came from donated services. RIBS cost per mile is $.56. While the cost per revenue vehicle hour for CGF was $9.60, the RIBS cost is $9.80.

Reston Commuter Services

Reston is served by two other public bus systems -- the Reston Commuter Bus (RCB) service and the Washington Metropolitan Area Transit Authority (WMATA). The RCB serves about 1,400 daily passengers between Reston and Washington with approximately 18 runs each way. The RCB is supervised by a volunteer organization, and membership in either the Reston Homeowners Association, the Deepwood Homeowners Association, or the Reston Community Association is required to utilize the commuter bus operation. Service is provided during morning and evening peak hours and operates on a subscription basis with tickets available on a daily or weekly basis.

Metro also provides bus service to Reston. Metro Route 5S/ serves the Lake Anne Section, and Route 3X serves the USGS area via the Dulles Access Highway. However, Metro does not provide service between the Lake Anne and the Hunters Wood Sections or within the Hunters Woods Section of Reston.

Vienna Jitney Service

The area's first privately operated non-commuter paratransit service was operational from December 1, 1975 to November 18, 1976 when it terminated. The service was performed by a taxicab company in Vienna which

assigned two minibuses (16 and 19-seat capacities) to the shuttle service within Vienna and between Vienna and the Tysons Corner shopping and business district.

Fixed jitney routes extended along Maple Avenue (Route 123) between Tysons Corner and downtown Vienna and through residential neighborhoods on either side of this arterial. The jitneys ran seven days a week between 7:00 A.M. and 10:00 P.M., picking up passengers who hailed them. The service was considered by some local officials as providing the needed in-town local transportation which the also-discontinued Fairfax City Dial-a-Ride was also designed to furnish. These officials thought that the effect of the service in reducing traffic congestion and air pollution outweighed any adverse impact it might have on Metrobus ridership in the area.

Ridership and Cost

The service failed because of excessive costs not covered by revenues, amounting to about a $50. per day deficit. Fares were collected from an average of 120 passengers each weekday, with triple that number riding on weekends. The fares were 35¢ within Vienna and 50¢ to Tysons Corner.

The private operators anticipated overcoming the deficit conditions by enlarging the service with the addition of more minibuses and the extension of routes all the way from George Mason University in Fairfax City to the CIA headquarters in McLean. The minibuses would proceed through residential areas as far as a mile and one-half on either side of Route 123. The Northern Virginia Transportation Commission was requested to grant the necessary authorizations to extend

the service into the Fairfax City area, and also to issue authorization to operate a charter service in Northern Virginia. These requests had the support of the Vienna Town Council, which expressed the need for a minibus service in and through the Vienna area.[1/]

However, NVTC was not able to grant the authority Vienna Jitney requested because of problems with defining the legal regulatory powers of NVTC inside Transportation Districts versus SCC powers. The question of competition with Metro was also raised.

This problem with defining NVTC's authority, in relation to paratransit operations is one that is discussed in Section III of this report. It is a problem that will have to be resolved before any other private paratransit systems are put into operation. Unfortunately for Vienna Jitney, these problems could not be resolved before the operation closed down because of excessive costs and low ridership.

It is important to point out that the per ride deficit was only 35¢, considerable lower than that generally attributed to Metrobus service and only slightly higher than Reston's Common Ground system run by a non-profit organization. Reston's Common Ground and the Vienna Jitney carried approximately the same number of riders per day.

Fairfax City Dial-a-Ride, 1974-1975

Fairfax City, in cooperation with the Northern Virginia Transportation Commission, operated a dial-a-ride system from June 1974 to April, 1975.

1/ WMCOG Para-Transit Report, p. 25

The system initially utilized three seventeen seat buses, and one van as a spare vehicle, later on these were replaced by twenty-three seat buses. The service to a patron was initiated by telephone and then relayed by a dispatcher to the particular bus in the vicinity of the calling patron. In addition to this demand responsive service which operated during the off-peak hours, subscription service was offered during peak periods. Hailing from the street was allowed during all hours of operation.

The service operated from 6:00 A.M. to 7:00 P.M. weekdays and from 10:00 A.M. to 3:00 P.M. on Saturdays. The fare was 25¢, but a book of ten tickets could be purchased for $2.00.

Rider reaction to the service was generally favorable with regard to comfort, driver responsiveness and the low fare of 25¢ per ride. It was unfavorable with regard to the unreliability of the service due mainly to mechanical failures. The taxpaying citizens of Fairfax City frequently reacted adversely to the service because it was not seen as benefiting the wage earner (who normally drives or uses Metrobus to get to work) as much as the transit dependent person, such as the young, the aged, and the handicapped.

During 1974 about 31,500 riders used the service, yielding an average weekday ridership of 200 passengers. The estimated ridership when planning the service was 300 passengers per weekday. In the first quarter of 1975, weekday ridership climbed slowly to about 260. However, by this time, the cost overrun connected with the service had prompted the City administration to search for alternative service and finally to discontinue the experiment.[1/]

1/ MWCOG Para-Transit Report 1977, p. 21.

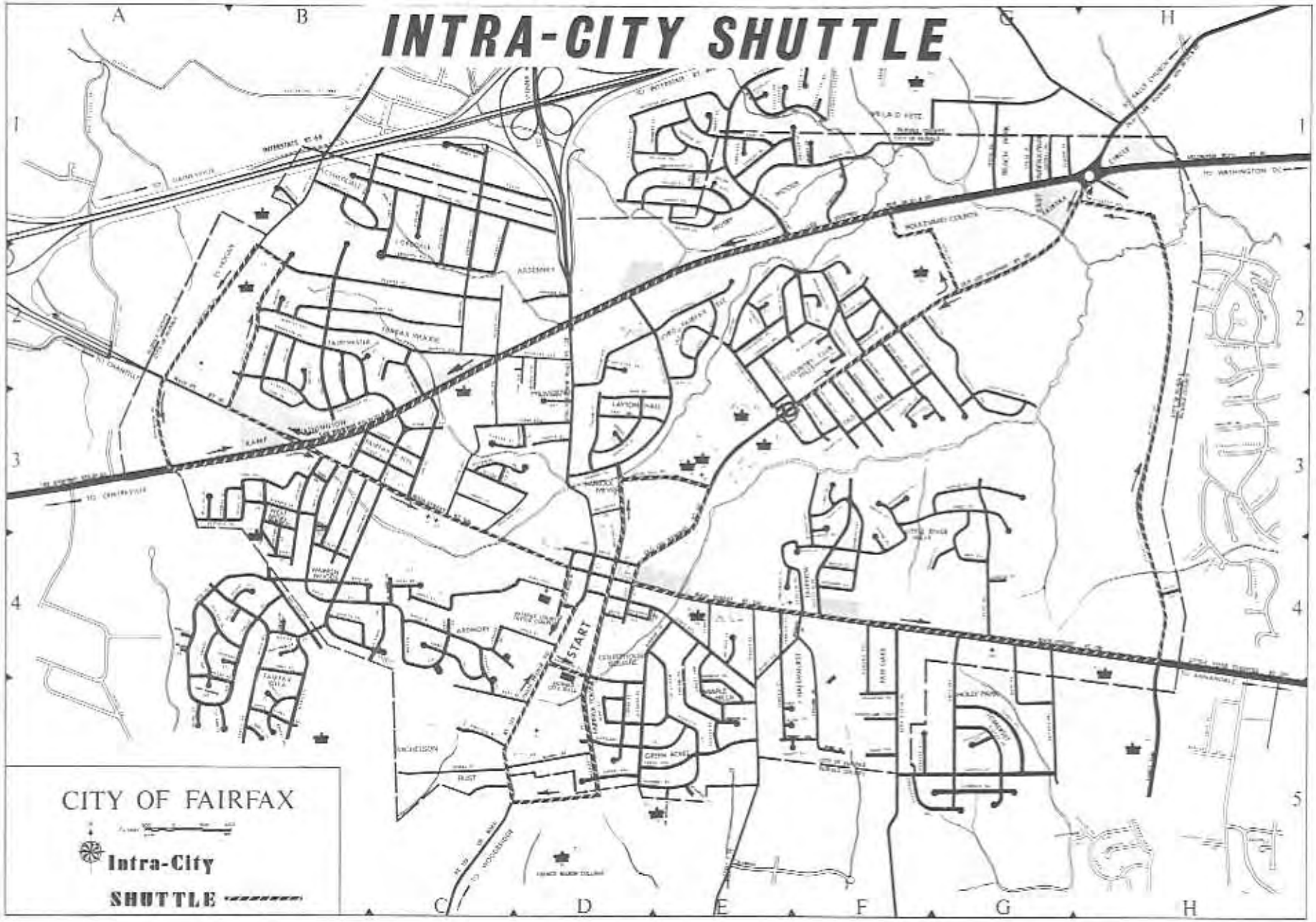
Fairfax City: Intra-City Shuttle Bus Proposal

In late 1977 Fairfax City withdrew from participation in WMATA. At that time the City staff felt this might prompt the WMATA Board to curtail Metrobus service in the City. As a result of this conclusion the City asked for proposals from private operators to run a minibus shuttle system in the City of Fairfax.

The proposed shuttle service, which has yet to be implemented, would operate in the City Monday through Friday with service commencing at 8:00 A.M. and ending at 6:00 P.M. along the route described on Map VI. This route was times at fifty (50) minutes not including a planned layover at City Hall, so in essence the service would have one-hour headways on the hour. The passenger fare would be 25¢, except for senior citizens displaying a pass which could be purchased at a reduced fare at City Hall.

The company of Assist, Inc., entered the lowest bid. Their bid was $17,402 for a five-month demonstration project and included a contribution of $104.40 per month toward a promotional campaign for the shuttle service. Table V gives a complete breakdown of the costs.

At this time it is uncertain as to whether this system will be implemented since the WMATA Board has yet to curtail Metrobus service in the City.


INTRA-CITY SHUTTLE
START
CITY OF FAIRFAX
Intra-City
SHUTTLE

MAP VI

TABLE V

FAIRFAX SHUTTLE
CHARGE FOR SERVICES

A - Demonstration Period

Monthly Cost to Assist	(5 months) Total
$3,480.40	$17,402.00

Monthy Charge to City of Fairfax	
$3,480.40	$17,402.00

B - 1st Year Extension

Monthly		Totals Yearly	
1 Vehicle	2 Vehicles	1 Vehicle	2 Vehicles
$2,319.62	$6,639.24	$43,435.44	$79,670.88

C - 2nd Year Extension

Monthly		Totals Yearly	
1 Vehicle	2 Vehicles	1 Vehicle	2 Vehicles
$3,764.40	$7,028.80	$45,172.80	$84,345.60

SECTION III

LEGAL OVERVIEW OF PARATRANSIT

This section is an attempt to bring together the Federal, State, and local laws and regulations relevant to paratransit systems, to analyze their effect on establishing different types of paratransit systems, and to make recommendations for legislative changes necessary to make paratransit systems legal.

It is important to spend time on such an analysis of the laws because the State laws in particular appear to be extemely cumbersome and vague as to how they apply to paratransit systems. The laws are, therefore, open to various interpretations. In a number of reports issued by local, State and private agencies, conflicting interpretations of the Motor Carrier Laws and the Transportation District Act have emerged. This analysis has therefore been done in the hope of bringing some clarity to the multitude of laws and regulations that currently exist.

FEDERAL LAWS AND REGULATIONS

The Federal legislation regarding paratransit operations is divided into two distinct areas, funding legislation and operating regulations. Funding legislation will be covered in a separate section of this study on financing paratransit systems. The Federal regulations, for operating paratransit systems, fall under the jurisdiction of the Interstate Commerce Commission (ICC). In general all transportation services that cross interstate boundaries must conform to the licensing procedure of the ICC.

Interstate Commerce Commission

Federal regulations should not be an issue in the implementation of paratransit services, because the Washington Metropolitan Area Transit Regulation Compact, under "Consent Legislation", transfers the powers of the Interstate Commerce Commission and the Public Utilities Commission of the District of Columbia to the Washington Metropolitan Area Transit Commission. It is stated that:

> Notwithstanding any provision of this section to the contrary, the jurisdiction of the Public Utilities Commission of the District of Columbia and of the Interstate Commerce Commission over all carriers and persons subject to the provision of the Washington Metropolitan Area Transit Regulation Compact are hereby transferred, as and to the extent provided therein, to the Washington Metropolitan Area Transit Commission.1/

Specifically, the regulatory powers over public carriers possessed by the ICC have been transferred to the Commission. The issue of regulatory restrictions on paratransit vehicle use in the Northern Virginia area appears to lie with the State Motor Carrier Laws rather than with ICC regulations.

STATE LAWS AND REGULATIONS

The State of Virginia regulates paratransit activities through the State Corporation Commission (SCC), which is governed by the Motor Carrier Laws. These laws have evolved over the past fifty years from the Code of Virginia and numerous court cases which have interpreted the laws. These interpretations of the law have made many paratransit systems illegal. This section is a system-by-system analysis of how the State Laws effect each system's feasibility.

1/ Washington Metropolitan Area Transit Regulation Compact, Consent Legislation, Section 3.

Jitneys

Jitneys are a cross between a taxi, having route deviation capabilities and no fixed stops, and a fixed route transit system, with stops and headways. This puts jitneys under two possible categories in the Motor Carrier Laws. If the jitney is considered a taxi or other vehicle performing a taxi service, it is by definition (see App. VI - Motor Carrier Law Definitions) illegal to operate over a regular route or between fixed terminals and must use a vehicle with a maximum seating capacity of six passengers. If the jitney is considered a common carrier, the possibility of route deviation is eliminated, again by definition, but a larger vehicle could be used. To sacrifice any of these characteristics would negate the inherent flexibility of a jitney system, in effect making it a bus or a taxi. However, if the jitney system operated only in one city or county it would be feasible, since it is not necessary to obtain a license from the SCC if the transportation service does not cross jurisdictional lines. In addition, VDH&T has interpreted the Transportation District Act in a way which allows various paratransit systems to exist if they operate in a Transportation District. This will be discussed further under local laws.

In Virginia under recent legislation (See App. VII, Section 15.1, 1-37.3:3 of the Virginia Code, page A17) taxicabs can now be used as paratransit vehicles in other than normal taxi configurations such as jitneys, DAR shared ride, and point to point. This makes jitneys legal under SCC regulations if a taxi vehicle is used.

Dial-a-Ride

Like the jitney, dial-a-ride operations face problems under the existing Motor Carrier Laws. If they are considered to operate as a taxicab, they are by definition limited to six passenger vehicles. The vehicle which is most appropriate for such DAR operation is a minibus or van. On the other hand, if the dial-a-ride were considered a common carrier, it would be illegal to operate over irregular routes. (See Motor Carrier Law Definitions, App. VI, page A11.) In either case the positive characteristics of a DAR system are negated.

CARTS

It does not appear that there are any legal barriers to overcome to institute a CARTS system. However, should the SCC rule that these vehicles are acting as common carriers, there would be licensing requirements.

Subscription Bus

The future of the subscription bus is a little more encouraging, at least when applied as a high density home-to-work carrier. Section 56-274, paragraph (5) of the Motor Carrier Laws covers serviced used exclusively for tranporting employees directly to and from the plant, factory, or place of like nature where all are employed, provided a permit is obtained from the SCC (See Appendix VI for Section 56-274, page A11). This is exactly the type of arrangement which companies have instituted in Northern Virginia so successfully, and described in Section I of this report. One example of this service is run by Colonial Transit, Inc., a privately owned and operated bus company

which currently provides an "employee-haul" subscription service to the Pentagon and downtown from several Virginia communities.

Another attractive aspect of this section of the Law is that the SCC does not require the operator of the vehicle to secure insurance to cover personal injury and property damage for the persons being transported. This means that the operator is relieved of the great expense of purchasing high premium insurance. It does, however, leave the patron of the service in the position of having to collect Workmen's Compensation monies, if he or she is injured while riding in the bus or van, instead of collecting from the operator's insurance company.

Taxi

The taxicab faces no such identity problems, for it is a well established form of public transit. It is not, however, without its organizational drawbacks, the primary ones being user cost and inefficiency. Since the cab companies are privately owned, they must pass on the ever increasing cost of equipment and overhead to their clientele. Consequently, the fares are beyond the means of many prospective users, particularly if on a regular basis. In suburban neighborhoods with low ridership densities and diffuse travel patterns, the choice is not between taxicabs and transit service, but taxicabs or no service. In some cases, even the taxicab is not available. Also the physically handicapped are sometimes spurned by the taxi driver who is unwilling or unable to provide the individual attention necessary.

LOCAL LAWS AND REGULATIONS

Because of the embryonic nature of most paratransit operations, the local jurisdictions have only recently begun to deal with the complexities involved in trying to authorize and regulate paratransit systems.

The notable exception to this is taxi operations. Each of the major jurisdictions in Northern Virginia has taxi regulations and procedures for the operation of taxicabs in their locality. These regulations are outlined in the taxi section of this report.

Based on the Transportation District Act of 1964,[1/] NVTC, as well as the separate jurisdictions has transportation related responsibilities and regulating authority over paratransit systems. As stated in the Transportation District Act, under Article 4, Section 15.1-1357 "Regulations of Fares, Schedules, Franchising Agreements and Routing of Transit Facilities", NVTC has the authority to authorize jitneys and demand responsive systems by public and private operators. On the other hand, it is the opinion of the SCC that NVTC does not have this regulatory authority over private operators, but does have the authority to run and contract for such systems.

The SCC's position is based on court rulings which interpret jitneys and DAR operations as illegal competition to established fixed route systems. It does, however, remain hazy as to exactly what regulatory authority NVTC actually does have.[2/]

To add to the complexity of the situation, recent legislative changes to the Sanitary District Act give these districts the power to authorize, contract for, or operate any form of transportation system when they are acting as a Sanitary District. (See Appendix IX, Chapter 161 of the Acts of Assembly, as amended, March 2, 1977.)

1/ See Appendix VIII Transportation District Act of 164, Excerpts.

2/ See Appendix XIII Attorney General's Position on Transportation Commissions' Powers.

WHERE DOES THIS LEAVE PARATRANSIT?

In order to have paratransit services, it is necessary for NVTC and the local jurisdictions to cooperate in exercising their collective authority, as stated in the Transportation District Act, Sanitary District Act, and local regulations, and authorize paratransit systems by private operators contract for service, or run the systems themselves.

This is not to say this would not cause conflict with the SCC, WMATA and the taxi operators. The SCC might well institute litigation under the instigation of WMATA or the taxi operators, if they are not involved. One way around this problem would be to have each of the jurisdictions involved authorize jitney and/or demand responsive service and at that point request SCC approval to cross jurisdictional boundaries. This action would make it difficult for the SCC to disapprove it, and relieve NVTC from regulatory control of the operation. NVTC could, however, retain control over routing and fares, which appears to be possible under its enabling legislation.

The other alternative is to request substantive legislative changes in the Motor Carrier Laws to specifically authorize and regulate paratransit service. This would include dial-a-rides, jitneys, and variable routing of buses. In this way the SCC, which has the mechanism established for licensing and regulation could set up standard procedures for such operation.

In addition, the Transportation District Act of 1964 needs to be amended to specifically define what NVTC's powers and responsibilities are in the field. As was stated earlier, there exist hazy

areas of jurisdiction over paratransit activities, which can only lead to agency conflicts.

The probable result of inaction will be actions similar to allowing Sanitary Districts to establish transportation systems. This is merely coming through the back door when the front door has been locked.

SECTION IV

SYSTEM MANAGEMENT OPTIONS

In the field of transportation there are three major management choices in the Washington area: 1) WMATA; 2) a local jurisdiction; and 3) a private operator. There are obvious pros and cons to each. This section will describe the choices and through a definition of the implications of each define which paratransit system or group of systems can be managed best.

WMATA to Operate Service

This option would be a modification of the status quo, with WMATA continuing to operate and maintain the vehicles to be used. The operating costs would vary depending upon whether standard size buses were used or a smaller size bus. These detailed costs would be in the range of $2.16 per revenue mile for a small bus during off-peak service hours.[1/]

Advantages:

1. WMATA and its predecessor companies have been in the transit business for a number of years and have already established the management, operational and maintenance functions necessary for the provision of transit service. Therefore, no start-up costs would be required.

   In addition, WMATA currently operates the "Downtowner" service in the District of Columbia which is similar in concept to the proposed paratransit system.

1/ This cost is from the WMATA Non-Standard Bus Study 1977.

2. Existing Maintenance and Other Facilities. The maintenance and administrative facilities necessary for the operation of the proposed paratransit system already exist.
3. Availability of Federal Funds. Metro is an eligible recipient for both capital and operating assistance grants from the Urban Mass Transportation Administration.
4. Coordinated Transit System. Operation of the paratransit system by WMATA would insure the coordination of the services with the other Metrobus routes in the area and the Metrorail system if it reaches out to Tysons Corner or Vienna. Such coordination is an UMTA requirement for federal funding.
5. Reduced Capital Costs. Similar localized transit services are being considered in other parts of the Metropolitan area. WMATA has just completed a study for the expansion of their bus fleet to include a mixture of vehicle sizes and types. This could result in a substantial demand for mini-midi-buses and mean lower per vehicle capital costs.

Disadvantages

1. Delays in Service Initiation. Although the administrative process exists within Metro to initiate such a specialized service, the process is cumbersome and major institutional delays might be encountered.
2. Less Local Control. With WMATA operating the service, the other local jurisdictions in Virginia, Maryland, and the

District of Columbia would, as is the present case, have to approve WMATA's annual capital and operating budgets. This could cause undesirable service changes in the area based upon systemwide revenue and cost considerations.

3. Operating Cost Increases. WMATA's rapidly increasing operating deficit is resulting in financial difficulties for the local jurisdictions in meeting their payments. This problem shows no sign of abeyance in the near future and it may become too expensive for a local government to provide anything except the minimum of transit service which is absolutely necessary.

4. High Operating Costs. WMATA's non-standardized Bus Study concludes that for an area such as Tysons Corners and the vicinity, a combination of taxis and a local jurisdiction's mini-bus system are more economically feasible.

Local Government Run Paratransit System

With this option a local government would own and operate the paratransit system. There is one major system of this type in the Washington area, located in Montgomery County, Maryland, "Ride On".

This system was totally funded with local monies. The initial system consisted of 21 mini-buses, 14 operating in the Silver Spring area on two loops, and 5 operating on two routes in the town of Gaithersburg.

The 1977 operating costs were as follows:

0.40¢/Revenue Mile + $11.20/Revenue Vehicle Hour

The Ride On system in Silver Spring has recently been expanded to forty buses to feed the new Metrorail station. It is, therefore, uncertain what the present operating costs are.

The Ride On costs for 1977 reflect the maintenance and operating performance of the Grumman Minibus, which has been prone to a high percentage of down time, with a driver rate of $4.20 per hour. These rates also include fringe benefits, office overhead, and drivers uniforms. Some of the planning and management costs are absorbed by Montgomery County and are not allocated to the bus operations. Thus the bus operating costs include all of the costs attributable to the bus service, but the bus services do not have to bear the full overhead that would normally be associated with a free standing operation. However:

> "The key reason that local jurisdictions can potentially provide bus service at lower rates than WMATA is that they can employ personnel at lower labor rates than WMATA. For example, in Montgomery County, the bus drivers are County Employees on County pay scales rather than union negotiated rates." 1/

If this continues to be true it seems reasonable to assume that local government will be able to offer transportation at lower cost levels than WMATA.

Advantages

1. Maximum Local Control. With the locality directly responsible for all phases of the paratransit operation, local control over routings, service levels, fares, etc., would be at a maximum.

1/ WMATA Non-Standard Bus Study, 1977.

2. Reduced Operating Costs. The use of non-union and part time employees would result in lower driver salaries, as compared to Metro.
3. Flexible Financing. The local government could use local, state, or federal funds. Although the latter would have to take possible Metro objections into account.

Disadvantages

1. Start-up Costs. The initiation of a paratransit system would require a substantial outlay of funds for capital and operating costs prior to the start of revenue service. The capital costs would include the acquisition of suitable buses and service vehicles, possible maintenance facilities, and other ancillary equipment. Initial operating costs would also include the hiring and training of the management, maintenance and operating personnel necessary to run the system.
2. Coordination Problems. In all the options the paratransit system would interface with Metrobus and rail. This interface will be more difficult in the coordination of headways and transfer procedures if run by a local government rather than WMATA.
3. Fares. A fare structure will have to be initiated to make transfers from and to Metrobus economically attractive and simple in order to attract ridership.
4. Wage Scale. The use of federal funds would require a higher wage scale, similar to WMATA's. The reverse would be true if only local or state funds were used.

Contracted Service with a Private Operator.

In Phase I of this study, several privately operated paratransit systems were examined. From this analysis it appears that large scale unsubsidized paratransit systems are not economically feasible. However, the analysis did show that private enterprise can operate systems more economically than government run systems.[1/] This, combined with sufficient backing by local governments in the form of marketing and coordination, makes private operations a viable option when compared to Metro and local government operations.

This management option is for the local government to enter into a contract with one of the privately owned and operated transportation companies in the area to provide the desired paratransit service.

There are several ways in which this could be done. What is important is that the contract must give the private operator an incentive to increase productivity and on the other side, give the local government the greatest control in keeping service standards high.

Reston's "RIBS" system is an example of a contract arrangement in Northern Virginia. The RIBS system, which operates over two routes in Reston, Virginia, employs two minibuses. This system has been in operation 8 months and has operating costs of .56¢/Revenue Vehicle Mile + $9.86/Revenue Vehicle Hour.

This bus service is owned by the Reston community but the operation is on a contract basis to a private operator. This operator employs part time and full time drivers, and this has helped to keep costs down. This system has raised no objections from WMATA or any other established

1/ See Section II.

carrier, because of the small scale of operation. If this were a large scale operation labor would become more of a cost factor.

Advantages

1. Increased Local Control over Operations. Since the private company would be under contract to the locality, exact services to be provided would be defined in the contract, as would the fare level associated with the operation.
2. Established Operations. Hiring an already operating private company would insure that necessary trained management, maintenance, and operating staffs would be available.
3. Increased Transit Accessibility. The neighborhood loops would bring transit closer to the public than today's system. In addition, it would make the adjusted line haul service more accessible.
4. Experienced Operators. A number of private operators already have experience with paratransit operations and would have no problem adding a new service to their operation.
5. No Capital Costs. Since the contractor could supply their own vehicles, no public investment in equipment would be necessary.
6. Termination of Service. With a fixed term to the contract the local government could choose to end the service or change contractor if the service was not operating properly or up to expectations.

Disadvantages:

1. Costs and Profits. A private operator would have to be guaranteed a profit, at least initially, to provide the service.
2. Coordination Problems. In all the non-Metro options, the paratransit service would interface with Metrobus and rail services. This will require the coordination of headways and transfer procedures.
3. Fares. If a low fare, such as 25¢, were not adopted a fare structure would have to be developed to make the transfer to and from Metrobus an attractive alternative to other modes of transportation.

Privately Run Paratransit System

In at least one of the paratransit options listed this type of operation is suggested. In Arlington, Virginia, a shared-ride taxi service to feed Metrorail stations is currently offered. This has been described earlier. This service is offered at about half the taxicab rate, but at twice the rate of the bus ride.

The current operating costs for taxi service in Northern Virginia, based on the Arlington Shared-Ride Taxi Study, are estimated to be 30¢ per revenue mile plus $2.49 per revenue hour. These costs are an average for normal taxicab operations with radio dispatching capabilities.

Advantages:

1. Low Start-up Costs. Relatively low implementation and program operating costs would be involved. A taxi operator would only have to redistribute his equipment.

2. Little or No Government Subsidy. Because this would be based solely on profit no direct government subsidy would be required.
3. Local Control. Since this service would be regulated by the locality some control could be exercised.
4. Short Start-up Time. Once a decision is reached to institute a service virtually no start-up time is required if the operator is an established one.

Disadvantages:

1. High Fares. Since this service would be profit motivated a high fare would have to be charged.
2. Opposition from WMATA. If the service expanded to any large degree there could be opposition from WMATA to the SCC for competing service.
3. Little Local Control over Termination. If the private operator found that a profit could not be made it would be in his power to terminate the service.

FUNDING

There are four sources for funding to establish and operate public transit systems:

Federal Monies, consisting of Section 6 funds for Research, Development, and Demonstration Projects, Sec. 3 for Capital and Operating subsidies.

State Funds, which are monies allocated yearly to the Northern Virginia area. These vary from year to year. Any new system would have to compete with existing problems and systems for funding.[1/]

Local Funds could be locally generated or a reallocation of federal monies.

System Generated Funds, consisting of farebox revenues, advertisements, and business support.

With the selection of any of these methods there will be some overlap. Any federal funding requires matching funds by the local government; state funds might not be adequate and the same for locally generated funding. Funding therefore becomes a mixed bag depending on a variety of sources to complete a package large enough to support a new system.

Federal Funding Implications

One of the major expenses associated with any transit system is labor. It is for this reason that many jurisdictions are becoming reluctant to use federal monies to establish paratransit systems. This is because federal funding has a number of strings or regulations attached,

1/ Past funding from the State has only been in the form of capital assistance.

which have the potential for making the long range costs much higher, versus the use of only local funds.

The major obstacle to overcome is Section 13(c) of the Urban Mass Transportation Act of 1964. This Section specifies that:

> It shall be a condition of any assistance under Section 3 of this Act that fair and equitable arrangements are made, as determined by the Secretary of Labor, to protect the interests of employees effected by such assistance. Such protective arrangements shall include, without being limited to, such provisions as may be necessary for (1) the preservation of rights privileges, and benefits (including continuation of pension rights and benefits) under existing collective bargaining agreements or otherwise; (2) the continuation of collective bargaining rights; (3) protection of individual employees against a worsening of their positions with respect to their employment; (4) assurances of employment to employees of acquired mass transportation systems and priority of reemployment of employees terminated or laid off; and (5) paid training or retraining programs. Such arrangements shall include provisions protecting individual employees against a worsening of their position with respect to their employment which shall in no event provide benefits less than those established pursuant to Section 5(2) (f) of the Act of February 4, 1887 (24 Stat. 379), as amended. The contract for the granting of any such assistance shall specify the terms and conditions of the protective arrangements. 3

What this means in practical terms is that any transit system that uses federal funds is subject to the same negotiated labor contracts that are in effect in the rest of the area. Thus, if a local jurisdiction or NVTC established a paratransit system with federal funds, the existing job structure would have to remain intact. While this at first glance would seem to make federal funding more trouble than its worth, there is an opportunity to turn this around. This can be arranged by using the federal funds to contract for service from an established operator. This is also in line with the latest UMTA policy guidelines for paratransit systems.

As late as December 1977, Lawrence L. Schulman of UMTA reaffirmed UMTA endorsement of paratransit and stated that "Organized labor has supported paratransit service and permitted the more flexible work rules and different wage rates necessary for efficient delivery of this service. It has also in many cases recognized a role for private operators in providing services."[1/]

The use of existing operators for paratransit services also make "the best use of existing systems and knowledgeable operators of transportation systems, versus an entirely new staff and operation. In addition,with the profit motivation left intact, more efficient type operations will take place."[1/]

1/ "UMTA Official Calls for Cooperative Partnerships", Taxicab Management, December 1977, p. 24

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 .25	RIDERSHIP .50*	REVENUE .25	REVENUE .50	TAXI .47	RIDE ON 1.15	WMATA 2.16	DEFICIT 25¢ FARE TAXI	DEFICIT 25¢ FARE RIDE ON	DEFICIT 25¢ FARE WMATA	DEFICIT 50¢ FARE TAXI	DEFICIT 50¢ FARE RIDE ON	DEFICIT 50¢ FARE 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	150,351	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 50¢ fare over 25¢ 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 .25	RIDERSHIP .50*	REVENUE .25	REVENUE .50	TAXI .47	RIDE ON 1.15	WMATA 2.16	DEFICIT 25¢ FARE TAXI	DEFICIT 25¢ FARE RIDE ON	DEFICIT 25¢ FARE WMATA	DEFICIT 50¢ FARE TAXI	DEFICIT 50¢ FARE RIDE ON	DEFICIT 50¢ FARE WMATA
1	88,400	75,140	22,100	37,570		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 50¢ fare over 25¢ 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
Vans			
Club Wagon	Ford	12	$7,000
Sport Van	Chevrolet	15	6,500
Model 2231	Volkswagen	9	6,300
Sportsman	Dodge	15	7,200
Light Buses			
Grumman	Grumman, Inc.	19	22,000
Argosy	Airstream, Inc.	19	22,000
Winnebago Series 19	Winnebago Industries	19	21,000
Medium Duty			
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
Heavy Duty			
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

Vehicle Type	Purchase Price[1/]	Service Life In Total Miles	Service[2/] In Years	Capital Cost/ Revenue Mile
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

SECTION VI

TRANSIT OPTIONS FOR TYSONS CORNER AND VICINITY

The Tysons Corner area has been identified as a prime employment center in Northern Virginia, having an employment level of 21,000. The residential areas surrounding Tysons have densities of from 4,000 to 10,000 persons per square mile. In addition, a major retail shopping center is located at Tysons, and each of the surrounding neighborhoods has a local shopping district. There is also a smaller shopping complex, Seven Corners, located at the fringe of the proposed service area.

It is for these reasons, along with high peak hour traffic and steady off-peak activity centers, that the Tysons area and surrounding neighborhoods[1/] have been chosen as the most likely area for a program for a paratransit services.

Five alternatives or options are offered for this area, together with estimates of costs, revenues, and patronage.

Option I All Metrobus

- No change

Option II All Metrobus

- Neighborhood loops base day
- No change incremental peak periods

Option III Partial Metrobus/Partial Local System

- Neighborhood loops locally operated
- No change incremental peak periods

1/ See Appendix XII for complete demographic analysis.

Option IV Partial Metrobus/Shared-Ride Taxi

- Neighborhood loops by taxicabs
- No change incremental peak periods

Option V Metrobus/Supplemental Carriers/Neighborhood Service

- Neighborhood loops locally operated
- Incremental peak service by Metro
- Metro shuttles to Rosslyn and Farragut Square
- Supplemental carriers for express bus service

Each of these proposed options have been designed to serve the general population of the service area. It has been estimated that 20 percent of the population is transit dependent, the elderly, handicapped, teenagers, and autoless households. Of this number approximately 30 percent are able to use transit service as it currently exists. If this percentage is to increase, by any of the outlined transit or paratransit services, modifications to the system's equipment will have to be made to accommodate these individuals. In addition, some route deviation capability would be warranted to make the system more accessible.

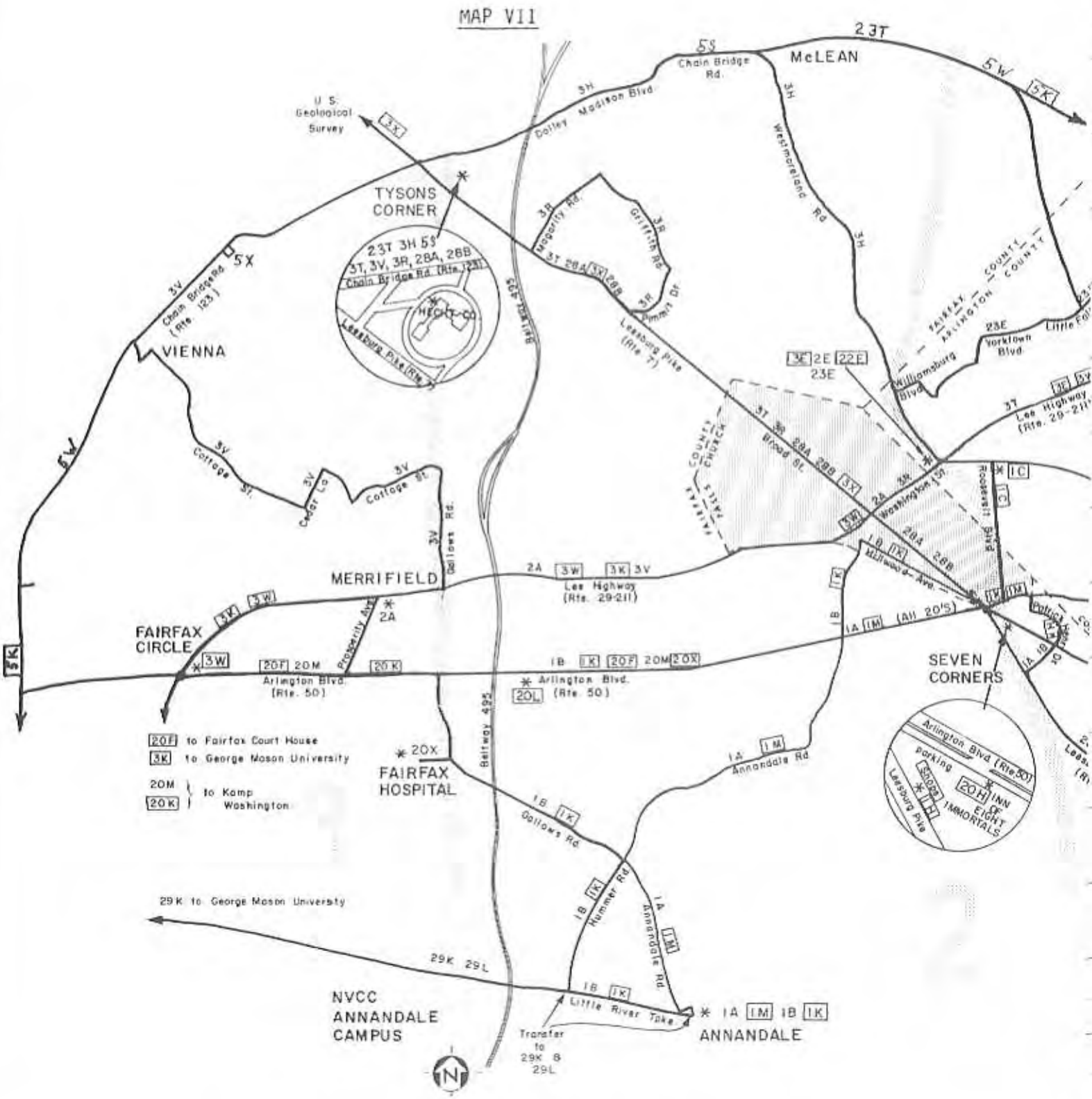
Option I - All Metrobus

The first option to consider is the existing Metrobus system.

As is shown in the accompanying maps and tables, a significant amount of transit service is offered in the major travel corridors of the proposed service areas. However, this service is radial in nature, supplying transportation to the downtown CBD and Rosslyn Metro Station.[1/]

The current operating cost, per week and year, for this service is as follows:

1/ See Map VII for bus routing.



Metrobus Routes

LEGEND

* TERMINAL STAND

[ ] RUSH HOUR SERVICE ONLY

FARE ZONE BOUNDRIES (Zones G, 1, 2, & 3)

Map Courtesy of
City of Falls Church
Planning Department

TABLE X [1/]

	PEAK	BASE DAY	WEEKEND	TOTAL
Total Cost-Day	$5,851	$3,918		
per week	$36,169	$19,593	$4,387	$60,149
per year	$1,808,450	$979,650	$219,350	$3,007,450
Fairfax Cost-Day	$3,533	$1,868		
per week	$17,665	$9,342	$1,003	$28,010
per year	$883,250	$467,100	$50,131	$1,400,500
Falls Church Cost-Day	$279	$171		
per week	$1,397	$854	$661	$2,912
per year	$69,850	$42,708	$34,367	$146,925

1/ Costs are gross costs of operating the Metrobus service.

The WMATA service, at an estimated operating cost of $1,400,500 provides 115 trips at an average headway of 25 minutes for each route during the incremental peak, and average headways of 45 minutes for 191 trips during the base day, over five routes in and out of the Tysons Corner area.

The present routes average 5.19 boarding and alighting (B/A) overall, at the Tysons Corner terminal, 9.45 B/A during the incremental peak periods at 4.16 B/A during the base day. These figures are further defined by route in Table XI.

TABLE XI

RIDERSHIP AT TYSONS CORNER

Breakout by Route
Tysons Corner
April 15, 1977

ROUTE	BOARDING	ALIGHTING	B/A TOTAL	TOTAL TRIPS	B/A PER TRIP
1	66	88	154	38	4.05
3	178	202	380	84	4.52
5	301	215	516	60	8.60
23	115	115	230	57	4.04
28	158	89	247	55	4.49
TOTALS	818	709	1,527	294[1/]	5.19

1/ Scheduled trips between 8:28 A.M. - 10:58 P.M., less those left after 10:10 P.M. (307-13 = 294)

Option II - Rerouting of the Metrobus During the Off-Peak Hours.

- Line Haul transit during morning and evening rush hours.
- Off-peak loop service to medical, shopping, recreation centers, and Metro bus terminals in one defined service area.
- All systems run by Metro.

The present routing of Metrobuses is for the most part geared to the rush hour radial corridors to downtown, giving little emphasis to off-peak activity centers such as shopping, medical, and recreation centers.

What is proposed here is to reroute those Metrobus lines with low patronage during off-peak hours and days to serve nonwork activity centers.

This is, of course, not a new idea, but a re-emphasis, set by the example of already existing bus service to the major shopping centers.[1/]

In the Washington Metropolitan area a large percentage of off-peak trips are shopping trips. While these trips may at first glance appear to be more dispersed than work trips, there are areas in Northern Virginia that can be easily defined as major activity centers, as well as major shopping centers, notably Tysons Corner, Loehman's Plaza, downtown Falls Church, Seven Corners, and the center of McLean.

The other aspect of this proposal is the well-defined and specialized market the program could be geared to during the off-peak hours, the shopper.

The service designed would have the regional shopping center as the collection and distribution center, with a system of bus loops routed through the surrounding neighborhoods.

1/ See Appendix XI (Metrobus route map.)

Other special features of the system would include frequent bus stops in the neighborhoods to minimize walking distances; attractive central boarding facilities at the shopping centers, to eliminate the long walk from parking lots to the malls, special areas for packages on the buses; and a transfer system permitting users of the shopping service to make stops along the route and reboard another bus with little or no charge would make such transit service an attractive option to the automobile.

Currently there are 11 minute headways on the Metrobus routes at the Tysons Corner shopping center to and from the Rosslyn Metro station and downtown Washington. Option two suggests that this service be reduced to one-half hour headways during the base day. The surplus service potential would then be used as neighborhood loops, serving the Vienna and McLean areas on one-half hour headways.

This could be accomplished by discontinuing service on routes 3H, 5W, and 3R in Fairfax County. These reductions in Metrobus service would amount to a reduction in operating subsidy to Fairfax County of $224,680 per year. The projected operating subsidy level for the Metrobus loops would be $287,973 for the first year of operation, which amounts to a $63,293 increase in subsidy.

The estimated costs and revenues for the proposed Metrobus loops are defined in Tables XII and XIII; the costs for the current Metrobus service are defined in Table XIV.

TABLE XII

METROBUS NEIGHBORHOOD LOOP COSTS/REVENUES

4 vehicles at 1/2 hour headways = $336.062 per year operating cost.

	Per Trip	
	8 Passengers	22 Passengers
Cost	$336,062	$336,062
Revenues	48,089	120,022
Deficit	287,973	216,040
Deficit per passenger	$2.40	0.72¢
Ridership at 40¢	120,224	300,056

TABLE XIII

SUBSIDY LEVEL 5-YEAR PROGRAM[1/]

	Per Trip	
	8 Passengers	22 Passengers
1st Year	$287,973	$216,040
2nd Year	308,131	231,162
3rd Year	329,700	247,343
4th Year	352,779	264,657
5th Year	377,473	283,181

1/ Based on 7% per year inflation factor with no fare increase. (Costs based on 0.80¢ per revenue mile + 20.35 per revenue hour) at 15 mph = $2.16 per revenue mile. Service would run Monday through Friday, 9:30 AM - 3:30 PM/6:30 P.M. - 11:30 PM; Saturday 10 AM - 10 PM.

TABLE XIV

Operating Costs, Revenues and Subsidies; Current Off-Peak Metrobus Routes in Service Area.

Route 5W (Off-Peak)

95 trips per week

12 Passengers, average per trip

$186,750 Operating cost per year

22,800 Revenues per year

$163,950 Subsidy per year paid by Fairfax County.

Route 3H (Off-Peak)

70 trips per week

12.3 passengers, average per trip

$39,750 Operating cost per year

17,220 Revenues per year

$22,530 Subsidy per year, paid by Fairfax County

Route 3R (Off-Peak)

150 trips per week

5.3 passengers per trip, Falls Church

5.7 passengers per trip, Fairfax County

$33,700 Operating cost, Falls Church

37,500 Operating cost, Fairfax County

$15,900 Revenue, Falls Church

17,100 Revenue, Fairfax County

$17,800 Subsidy paid by Falls Church

20,400 Subsidy paid by Fairfax County

$38,200 Total subsidy per year.

$224,680 Total subsidy per year (Rtes. 5W, 3H and 3R Off Peak)

Option III - Metrobus Peak Service - Metro and Local Base Day Service

This option is similar to Option II, in that the incremental peak service would remain the same. However, in this proposal more Metrobus base day routes are altered and locally operated minibus loops would be established in Vienna, Falls Church, and McLean, with Tysons Corner as the focal point. These areas are defined on Map VIII.

The Route 5W would be eliminated at a cost saving of $163,950 per year. Routes 3H, 3R, and 3T would be truncated in Arlington, which would result in a subsidy level reduction of $77,880 to Fairfax and Falls Church. The total savings in subsidy would be $241,830 per year.

This would leave Routes 5S, 3V, 23T and 28 to serve the Tysons Corner area with Metro service to Seven Corners, Alexandria and downtown Washington. In addition, convenient transfer points at Seven Corners, as well as Tysons Corner would be available for transfer to Routes 1, 2, 3, 4 and 20 buses.

The jitney loops defined herein would be privately operated, under contract to Fairfax County. Table XVII, Loop Characteristics, defines the service as six vehicles running at one-half hour headways over three routes, one each in McLean, Falls Church, and Vienna.

The operating cost for the first year of the service is estimated to be $1.15 per revenue mile, which translates in $268,381 per year. Revenues, at 25¢, would be $53,040 per year. The operating subsidy would be $215,340 per year. This results in a $22,690 per year cost savings over today's subsidy level. These costs and revenues are detailed in Table XV for the first year and in Table XVI for a five year period.

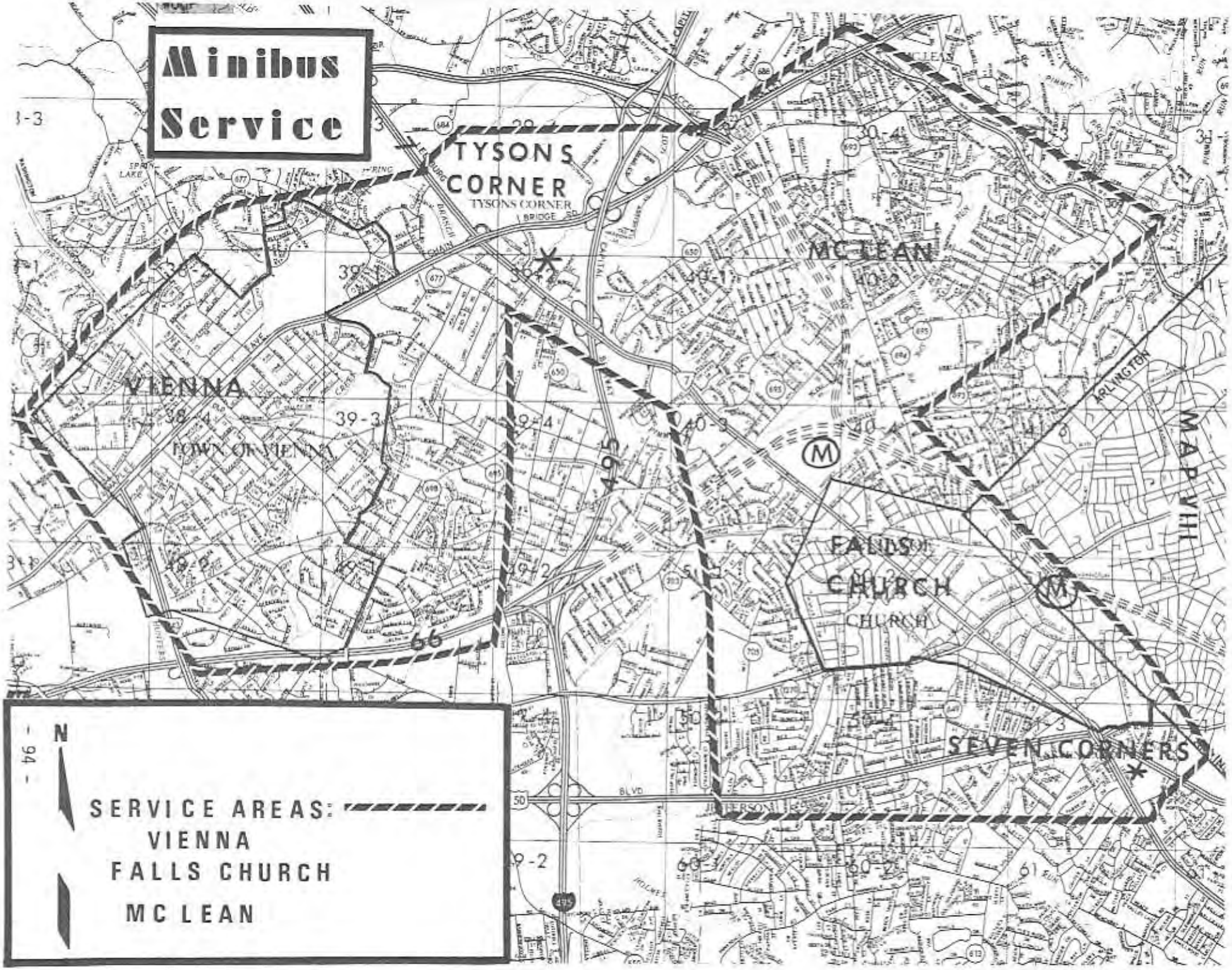

Minibus Service
TYSONS CORNER
TYSONS CORNER
MC LEAN
VIENNA
TOWN OF VIENNA
FALLS CHURCH
SEVEN CORNERS
ARLINGTON
N
SERVICE AREAS:
VIENNA
FALLS CHURCH
MC LEAN

TABLE XV

OPERATING EXPENSES/REVENUES

1st Year of Operation

(Loop Systems: McLean, Vienna, and Falls Church)

	8 to 10 PERSONS PER TRIP		22 to 25 PERSONS PER TRIP	
	3 vehicles	6 vehicles	3 vehicles	6 vehicles
RIDERSHIP				
25¢ Fare	$106,080	$212,160	$265,200	$530,400
50¢ Fare	90,168	180,336	225,420	450,840
REVENUE 25¢	$26,520	$53,040	$66,300	$132,600
50¢	45,084	90,168	112,710	225,420
OPERATING COST				
Taxi 0.47¢ mi.	$54,843	$109,686		
$1.15 per mi.	134,190	268,381	$134,190	$268,381
$1.75 per mi.	204,204	408,408	204,204	408,408
WMATA - $2.16	$252,046	$504,091	$252,046	$504,091
DEFICIT 25¢ Fare				
$0.47	$28,323	$56,646		
$1.15	107,670	215,340	$67,890	$135,780
$1.75	177,684	355,368	137,904	275,808
$2.16	225,526	451,052	185,745	371,490
DEFICIT 50¢				
0.47¢	$9,759	$19,518		
$1.15	89,106	178,212	$21,480	$42,960
$1.75	$159,120	318,240	91,494	182,988
$2.16	$206,902	413,923	169,335	338,670

TABLE XVI

SUBSIDY LEVELS 5-YEAR PROGRAM*

(Jitney Loops with 6 Vehicles)

	25¢ Fare	50¢ Fare
1st year	$215,340	$178,212
2nd year	230,414	190,686
3rd year	246,543	204,034
4th year	263,801	218,526
5th year	282,267	233,822

* Based on 7% inflation factor with no fare increases.

TABLE XVII

LOOP CHARACTERISTICS

	VIENNA	FALLS CHURCH	MCLEAN
ROUTE LENGTH	11 miles	11 miles	12 miles
TRAVEL TIME:			
No Layovers	44 minutes	44 minutes	48 minutes
Layovers	54 minutes	54 minutes	54 minutes
AVERAGE SPEED	15 mph	15 mph	15 mph
HEADWAYS:			
2 vehicles	30 minutes	30 minutes	30 minutes
OPERATING HOURS:			
Weekday	10 AM - 10 PM	10 AM - 10 PM	10 AM - 10 PM
Saturday	10 AM - 6 PM	10 AM - 6 PM	10 AM - 6 PM

Option IV - Shared-Ride Taxi-Metrobus

This option, which is similar to Options Two and Three in concept, would offer three neighborhood loops through McLean, Vienna, and Falls Church, but in this case taxicabs would be used to circulate through the neighborhoods on regular routes, instead of vans or minibuses.

Six taxis would be necessary to supply one-half hour headway service to serve the three areas. The service would be offered six days a week from 7 A.M. to 7 P.M., Monday through Friday, and 10 A.M. to 6 P.M. on Saturday.

The cost for running this service would be in the $6.00 an hour range, or 0.47¢ per revenue mile. This translates into an annual cost of $109,686. If the service ran with eight patrons per trip, at a 50¢ fare, there would be revenues of $90,168 per year. This would result in a deficit of $19,518.

These three taxi loops would replace current Metrobus Routes 5W, 3H, 3R, and 3T and leave the 23T, 5S, 3V, and 28 in place for an annual savings to Fairfax County and Falls Church of $241,830. The difference in operating subsidy would amount to a $221,512 savings for the two jurisdictions. The drawback to this option is the small size of the vehicles, six passengers or less. This would curtail the growth of the system unless larger vehicles were employed. At that point the costs would increase to the $1.15 per mile range which is what Option III details.

TABLE XVIII

SUBSIDY LEVEL 5-YEAR PROGRAM*

(Shared-Ride Taxi) 50¢ Fare

1st Year	$19,518
2nd Year	20,884
3rd Year	22,346
4th Year	23,910
5th Year	25,584

* Based on 7% inflation factor with no fare increase.

Option V - Metrobus/Supplemental Carriers and Neighborhood Service

This is the most radical proposal of the five, since this option involves a complete revamping of the current transit system in the service area. The proposal is made up of the following elements:

Base Day Service -- Supplied by WMATA to Rosslyn Metro, neighborhood service supplied by the local government or private contractor.

Peak Hours -- Express bus service from selected fringe areas and Tysons Corner to Rosslyn Metrorail. Service to be supplied by Metro and supplemented by private carrier to reduce the peak demand on Metrobus.

This use of a supplemental carrier will allow an overall reduction of the number of Metrobuses and Metrobus drivers needed. In addition, the elimination of circuitous neighborhood service will reduce the size of the fleet necessary.

- Neighborhood and feeder service to express buses would be supplied by taxis, vans, and minibuses, depending on demand and density.

The Metrobus routes to be eliminated would be the 5W, 5X, 5Z, 3H, and 3R, leaving the 5S, 5K, 3T, 3V, 23T and 28 serving the Tysons Corner area.

These eliminated routes would be replaced by a supplemental carrier, supplying service on a subscription basis only.

Table XIX gives a cost breakdown of the present service.

TABLE XIX

INCREMENTAL PEAK SERVICE REDUCTIONS

(ESTIMATED COSTS/REVENUES AND SUBSIDIES)[1/]

	Operating Cost		Revenues		Subsidy	
	Per Day	Per Year	Per Day	Per Year	Per Day	Per Year
5X - two trips morning and evening from Vienna to Pentagon (4 trips total)	$241	$60,255	$180	$45,000	$61	$15,250
5Z - 8 trips morning and evening from Tysons Corner to Farragut Square (16 trips total)	$676	$169,080	$507	$126,750	$169	$42,250
3H - 5 trips morning and evening (7 reverse flow trips) (10 peak trips total)	$292	$73,007	$90	$22,500	$202	$50,500
3R - 6 trips morning - 4 afternoon (10 reverse flow total)	$510	$127,500	$404	$101,000	$106	$26,500
5W - 5 trips morning peak (2 reverse flow) 3 afternoon peak (1 reverse flow)	$625	$156,250	$468	$117,000	$157	$39,250
Totals:	$2,344	$586,000	$1,649	$412,250	$695	$173,750

Total trips: 48

Cost per trip: $49.00

Subsidy per trip: $14.48

1/ Operating cost based on $1.20 per revenue mile + $30.35 per revenue hour. Revenues based on 1977 ridership checks - average ridership per trip for all routes - 27 passengers per trip.

The operating cost for the same service provided by a supplemental carrier is estimated to be $67.50 per trip. This would result in a yearly operating cost of $810,000. The revenues projected for the service are $400,000, at the same fare level as Metrobus, leaving a projected deficit of $410,000 per year.

This subsidy combined with Option III's off-peak jitney service amounts to a subsidy level of $625,340, the current subsidy is $411,780, for an increase of $213,560, making this the most expensive option available. Table XX details the subsidy level for a five-year program.

TABLE XX

SUBSIDY LEVEL 5-YEAR PROGRAM[1/]

Charter Service	Jitney (25¢ Fare)	Total
1st Year - $410,000	$215,340	$625,340
2nd Year - 438,700	230,414	669,114
3rd Year - 469,409	246,543	715,952
4th Year - 502,678	263,801	766,069
5th Year - 537,837	282,267	819,694

1/ Based on 7% inflation factor with no fare increases.

Fares

Using a supplemental carrier, for the incremental peak, would necessitate a new prepaid system, similar to Reston Commuter Bus and Fairfax City's.

This fare card or pass could be sold on a weekly, monthly, or even yearly basis. The latter is how the Westport, Connecticut, Minnybus system operates.

Since all these routes would be serving Fairfax County, the County could sell the fare passes through its offices, banks, and the carrier's offices. For simplicity's sake this pass would allow free transfer between the neighborhood feeder service and the line haul carrier and vice versa.

Supplemental Carrier Costs and Revenues

Revenues/Peak Service:

$1.00 fares - Home to Rosslyn (Round Trip Fare $2.00)

$1,600 per day at $1.00 fare level each way

$8,000 per week

$400,000 for 250 days or 50 weeks.

- A $1.00 fare would be 10¢ per trip cheaper than Metro without a rail transfer. With a rail transfer the total price would be 30¢ more expensive. This could be adjusted on a monthly or yearly basis.

$.90 fares - Home to Rosslyn (Round trip fare $1.80)

$1,440 per day

$7,200 per week

$360,000 per year

- This would amount to a 10¢ fare increase for a trip downtown.

$.80 fares - (Round trip fare ($1.60)

$1,280 per day

$6,400 per week

$320,000 per year

- This would be a 10¢ reduction over current costs, but would be offset if the individual used neighborhood feeder service to get to the express bus.

TRANSPORTATION BROKER

In Northern Virginia there are a number of existing transit and paratransit systems. One of the problems with these systems is that many are unfamiliar or unknown to the prospective patrons. In addition, many of these systems are not coordinated, which leads to a duplication of effort and a waste of resources. The answer to these needs, as suggested here, is a Transportation Brokerage Service provided by NVTC.

The implementation of the Broker Service would initially involve a reorientation of current staff efforts toward more service directed work. This would include promoting van pooling, investigating areas for new services, putting together and distributing information flyers, lending assistance to groups to improve and establish paratransit services, and generally promoting transit and paratransit.

The following list are items that should be of particular emphasis for the Brokerage Service.

- Generate Increased Usage of Current Systems
  - In areas with little or not transit
  - In areas of low ridership
  - In employment centers
- Promote New Systems

  Introduce van pooling and promote the information matching service provided by COG.

- Funding

  - Increase awareness of funding mechanisms; promote new legislation that will help rather than hinder coordination of services.

  - Make full use of Federal, State and local funds which are already available.

This Broker concept would not involve any additional staff costs, but would probably involve an outlay of some monies for printing of needed materials.

In addition to the Brokerage Service, it is suggested that at some future data a Transportation Information Center be developed. This is not needed today, but as new systems are developed through the Brokerage Service and as Metrorail comes out to the suburbs, a need for such an Information Center oriented to Northern Virginia may develop.

APPENDICES

"WHERE PEOPLE ARE FIRST IN TRANSPORTATION PROGRAMS"

Northern Virginia Transportation Commission

■ Arlington Executive Building ■ 2009 North 14th Street ■ Suite 300 ■ Arlington, Virginia 22201 ■ (703) 524-3322

September 10, 1976

STUDY OF PARA-TRANSIT ALTERNATIVES TO OFF-PEAK BUS SERVICE IN THE SUBURBS.

Purpose: To investigate alternative means of providing public transportation during off-peak hours in low-density suburban areas without the use of regular transit buses.

Costs associated with fixed-route transit have risen to the point where running buses on fixed routes in outer suburban areas during evening and some weekend times has become very expensive in relation to the number of riders. However, it is recognized that these buses perform a necessary social service in terms of work access and other needs for some persons. The problem is how to provide necessary transportation at a reasonable cost per rider. This study will concentrate on the tradeoffs between bus and para-transit and attempt to show steps needed to replace some bus service with equal or greater para-transit service at lower cost.

Objectives: The study will accomplish the following:

1. Identify possible para-transit systems that might be applicable to this situation.

2. Explore legal and institutional barriers to the use of para-transit, and develop means of overcoming them, if necessary.

3. Identify specific geographic areas in Northern Virginia where use of para-transit during off-peak might be most viable. Develop a plan, and estimate potential ridership and costs of the most feasible alternative systems for these areas.

4. Outline an implementation plan showing how para-transit could be coordinated with the Metrobus and rail system in the areas identified as most viable. Outline funding needs and sources. Make recommendations to NVTC, WMATA and the appropriate local jurisdictions.

Relation to Other Studies:

This study will build on the existing literature regarding para-transit, much of which is quite recent, and attempt to tailor the general concepts to Northern Virginia. The Arlington County study of shared-taxi service will be on-going and previous area studies that considered para-transit, such as the D.C. Corridor Studies, can provide a wealth of

related information. The study will supplement the current efforts to increase the efficiency of the bus system during integration with Metrorail, and will provide useful input to the NVTC Commissioners throughout the year as they consider off-peak service adjustments. It is also consistent with the TSM strategy of increasing the flexibility of public transit service through use of para-transit.

Time Frame:

The study will take one year, but recommendations for specific areas may be available before the end of the project.

Scope of Work:

A. Inventory and Evalutation of Para-Transit Systems -

This task involves a brief literature review to identify information available on the various types of para-transit. The systems that seem to offer potential will be evaluated in the framework of the Northern Virginia environment. Particular attention will be given to past and present operating experiences in this area, including taxis, jitney, and dial-a-rides. This step will include discussions with taxi company managers concerning their operations. It will be a "sorting out" of the systems that offer potential for use, and identification of their best applications.

B. Data Collection -

Available data on the existing and planned bus service, including detailed costs, and ridership will form the basis for estimates of savings. Demographic data on the suburban areas is also pertinent, and will be gathered.

C. Identification of Barriers, and Recommended Solutions -

Legal and institutional barriers to para-transit use must be identified, and means of overcoming them recommended to appropriate state and local officials.

D. Identify Potential Areas -

Using the data on bus service levels and costs, demographic data and literature estimates of para-transit potential use, geographic areas in the Northern Virginia region that could potentially support para-transit will be identified. A limited number of areas, representative of different residential-commercial categories will be chosen. Using these as typical, the effects of a para-transit system in each operating situation can be monitored.

E. Estimate Ridership, Costs for Para-transit in Selected Areas -

After identifying geographic areas, a particular system that seems best suited will be chosen and an operating concept outlined. The operating costs, potential ridership, and Metrobus changes will be estimated, so the overall costs can be identified. Detailed study of the effects of bus cut-backs on driver and bus costs will be made, to closely estimate savings.

F. Formulate Implementation Plan -

Detailed steps needed to bring the para-transit service into reality will be shown here. Capital costs, if any, and sources of funds for short-term operation will be outlined. Local political decisions, as well as technical procedures will be discussed.

Project Budget and Source of Funds (FY '77)

$60,000 total project costs (excluding COG administrative costs)
consisting of: $48,000 Federal (UMTA)
$12,000 Local (NVTC)

The project will predominately be done with NVTC staff, using some consultant assistance in technical areas. A detailed budget is attached.

Attachment

APPENDIX II

New Dial-A-Ride Concept In California

The Orange County Transit District, already touted as an industry "innovator" despite its youth, began another unique chapter in its history February 7 when Dial-A-Ride service was initiated in Fullerton, Calif., using both OCTD minibuses and Yellow Cab Co. of North Orange County sedans.

Unique both for the publicly-owned transit agency and Yellow Cab, a private enterprise, is the fact that the taxis were painted in OCTD colors, white with orange stripes, and display OCTD identification symbols as well as the Fullerton Dial-A-Ride seal and telephone number.

According to the officials involved, the new service arrangement is a "step forward in public agency relationships with private enterprise -- one that will be watched with interest throughout the country."

The unusual contract between the two parties derived through a series of negotiations under the direction of James Reichert, OCTD assistant general manager; Yellow Cab Co. of North Orange County executives Ed and Larry Slagle, and City of Fullerton officials.

Reichert noted that use of taxis to supplement public transit is no longer unique in itself. The term "paratransit" is becoming more popular throughout the country as public transportation ridership increases rapidly and transit agencies are looking to private enterprise and other unconventional modes to help meet the demand for service.

He said, however, that in most cases the transit agencies simply are calling on the taxi firms or other privately-owned transportation companies to supply vehicles when and where needed.

Some of the Western cities where transit agencies are currently using or negotiating with taxicab firms to supplement service include Tacoma, Wash., Long Beach, Santa Cruz, San Mateo, Riverside-San Bernardino, El Cajon, La Mesa and Whittier in California.

Reichert added that the OCTD contract with Yellow Cab of North Orange County is unique in many ways, in addition to the fact that the taxis operating in Fullerton are painted in OCTD colors.

Among the innovative aspects of the new Dial-A-Ride service are:

Yellow Cab will keep all the fares it receives as an "incentive" to increase ridership and will receive from OCTD $9.65 for each service hour by the 10 vehicles. (Service hour is defined as the time an individual vehicle is going to or coming from a passenger delivery or pick-up.)

Yellow Cab will operate and maintain all vehicles from its facility in Anaheim, and will be responsible for hiring and supervising all personnel, including drivers, dispatchers, supervisors and maintenance employees.

Some of the Western cities where transit agencies are currently using or negotiating with taxicab firms to supplement service include Tacoma, Wash., Long Beach, Santa Cruz, San Mateo, Riverside-San Bernardino, El Cajon, La Mesa and Whittier in California.

Total cost to OCTD for implementing and monitoring the service will be $470,000 annually. The funds are derived from existing budgeted allocations. No capital investment is required by the OCTD.

The OCTD will monitor the efficiency of the operation to assure that the transit district service standards, safety, courtesy, and maintenance are followed.

OCTD will provide uniforms and will conduct initial training for all the drivers.

Yellow Cab will continue to provide 24-hour, seven days per week taxicab service in Fullerton. Dial-A-Ride operates Monday through Saturday from 6 a.m. to 7 p.m., with five minibuses, leased from the OCTD and five Yellow Cab sedans. The minibuses, capable of carrying 19 passengers each, are being used primarily during peak travel periods.

The transit district will continue to operate its same bus routes in Fullerton. The Dial-A-Ride operation is to meet community needs beyond the fixed-route service and offer convenient transfer points to existing fixed route service and the neighboring Dial-A-Ride operations in La Habra and Brea.

Because Fullerton is spread out and hilly in parts, it was determined that it would be difficult to cover the entire area with adequate bus service.

The OCTD-Yellow Cab agreement for the new Fullerton Dial-A-Ride was reached despite a still-unresolved court suit brought by the cab company against the transit district. Yellow Cab charged in the 1975 action that the OCTD was unfairly competing with the private taxi firm by operating a Dial-A-Ride service in the City of Orange.

However, both OCTD officials and taxicab management personnel believe the new Fullerton system will mark the beginning of a new era of cooperation between the public agency and private enterprise.

"I'm convinced that the Fullerton Dial-A-Ride will be an excellent example of how the transit district can work smoothly with private enterprise," according to OCTD Board Chairman and County Supervisor Ralph B. Clark, who has directed district staff to begin reevaluating its policies for reinstating or implementing Dial-A-Ride systems in other cities within the county.

"We have the opportunity here to prove that OCTD and private carriers can work together to solve transportation needs in Orange County. I am very enthusiastic," he said.

In terming the new Fullerton Dial-A-Ride agreement a real breakthrough in public agency-private enterprise relations, OCTD General Manager

Continued on page 17

DIAL-A-RIDE

Continued from page 6

Edward F. Loritz said the system "might be the best way to go. It appears to be the most cost-effective method that we have come up with so far."

"I'm convinced that the Fullerton Dial-A-Ride will be an excellent example of how the transit district can work smoothly with private enterprise," according to OCTD Board Chairman and County Supervisor Ralph B. Clark, who has directed district staff to begin reevaluating its policies for reinstating or implementing Dial-A-Ride syseems in other cities within the county.

Larry Slagle said his taxi firm, like many others across the country, is attempting to find new ways to stimulate ridership which results in increased profits for the private businesses.

Paratransit is becoming the mode of the future," he said, "and we are delighted to be in a position of working together with the OCTD."

Also pleased was OCTD Board Director Al Hollinden, mayor of Fountain Valley, Calif., and chairman of the newly-formed Orange County Transportation Commission, who said:

"It (Fullerton Dial-A-Ride) is an innovation that the whole country will be watching. The whole story in transportation today is to make use of existing facilities. This plan does not require capital investment (in buses and maintenance facilities) by Orange County taxpayers."

Starting April 16

Here comes the maxytaxy

Along with the minny, it takes you more places, more ways, more times!

First came minnybus . . . then maxybus . . . and now maxytaxy.
The minny has done wondrous things for Westport townfolk . . . and soon our new maxytaxy will go to work right alongside minnybus and maxybus, providing even more ways to travel more times of day. Eleven bright red, beautiful vans, each seating 12 passengers, will give you comfortable, caring dial-a-ride service at economical cost, with no tipping . . . a new and different kind of service.

The maxytaxy will take you door to door.
All you'll do is dial **226-9525** and maxytaxy will come to pick you up and take you where you want to go on a shared-ride, dial-a-ride basis. Complete details including fare information will be announced in two weeks.

maxytaxy
226-9525

Starts April 16.

The maxytaxy will help our elderly and handicapped neighbors to get around town.
The minny has already been a big help to our older townspeople. Now, with the addition of shared-ride, dial-a-ride maxytaxy at special rates for the elderly and handicapped, we'll be adding more services.

Two maxytaxys will be specifically equipped to give handicapped riders and their companions a safe, comfortable trip.

Starts April 25.

The maxytaxy and minnybus will carry more commuters.
With the addition of the maxytaxy, and working in cooperation with minny, we'll soon be meeting more morning trains at the Saugatuck Station . . . and we'll extend some of our present routes. Late-evening commuters to Westport will be able to ride maxytaxy for half-fare with a minny pass.

Starts May 9.

The maxytaxy and minnybus will offer late afternoon and weekend evening trips.
We will add regular route runs to 7 P.M. from Jesup Green so that those who work downtown or go to the "Y" or shop late can get a ride home. Merchants and their employees will be able to reserve rides on a regular basis. We'll also introduce Friday and Saturday evening maxytaxy shared-ride service at half-fare for passholders — to take you to dinner, to parties, to the movies, to special events.

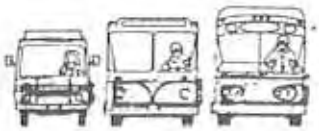
Starts week of May 16.

The maxytaxy will deliver packages.
Whether you come to town on the minny or maxytaxy to do your shopping — or call your order to the store — you can arrange to have maxytaxy deliver your packages home. Local merchants, business and professional people, or anyone moving small goods, information or packages will be able to count on maxytaxy to deliver door-to-door.

Starts June 6.

The beauty of it all is . . . that the maxytaxy will be a big help to the minny system as we continue to pioneer new ways to help you and your family do your local trips and errands more easily, efficiently and economically than you can in your own car. We plan to try other innovations too . . . including the arrangement of car and van pools to local offices. Before long we think you'll decide to give up one of your dollar-gobbling, gas guzzlers and let us take you where you want to go

Call our information center: 226-7171 for further details or to ask any questions. We want to help you all we can. And we plan to be your total transportation information center — meaning you can call us for schedules and prices on trains, inter-city buses, limousines, private ride taxis or rental cars.



Here comes the minny

Westport Transit District
311 Post Road East, Westport, Ct.
For information call 226-7171

Here Comes The MaxyTaxy

The Westport (CT) Transit District initiated on April 16 an UMTA support service and methods demonstration program which involves the provision of multiple transportation services under contract from a private transportation firm headed by the president of a local taxi firm. The services to be offered include shared-ride taxi, elderly and handicapped service, supplementary fixed route bus service, and small package goods delivery. Leo Keehan, president of Teddy's Taxi of Westport, heads the new firm.

The purpose of this demonstration is to show the ways in which public and private operators can integrate their services as well as the ways in which multiple modes of transit operators can be interrelated. The Westport Transit District presently offers fixed route service and carries over 50,000 passenger trips per month. Two local taxi companies have been operating four to five vehicles each using exclusive ride certificates. The new services will allow the transit district to expand significantly the transit options available to local citizens.

The new private firm headed by Leo Keehan, called Westport District, was awarded the contract to carry out these services as a result of competitive bidding. The company will provide drivers, dispatchers and management services for the new program. They will be paid for personnel costs, a management fee, and a profit incentive based on system productivities reflected in passengers-per-vehicle hours. The equipment to be used in the project, 11 twelve-passenger raised roof vans, was purchased under the grant and will be owned and maintained by the Transit District.

An UMTA Sec. 6 grant, totalling $610,000, which includes the cost of the equipment, will be used to support the project during two years. There is additional aid from state and local governments. It is expected that the data generated from the project will be used by Federal and State officials to clarify paratransit policies and to stimulate the expansion of these services through the development of an exemplary model.

DOT Proposes No-Fare Tests

No-fare public transit service and five other concepts are expected to be tested by the U.S. Department of Transportation.

DOT's Urban Mass Transportation Administration (UMTA) has invited local communities to submit letters of interest with respect to participating in experiments with transit service level and fare policies. The local responses are due May 31, 1977 in UMTA's Office of Service and Methods Demonstrations, which will handle the experiments. The six demonstration concepts are:

1. systemwide fare abolition with controlled service variations
2. systemwide fare reduction or abolition during offpeak hours
3. central area fare elimination
4. fare incentives as a promotional measure
5. experiments with various controlled service improvements, and
6. UMTA-sponsored independent evaluation of locally-initiated projects.

APPENDIX III

NVTC
December 21, 1976

NATIONAL AIRPORT TAXI OPERATIONS

1. 50¢ is charged for each taxi wishing to pick up passengers, unless the taxi has been requested prior to its arrival at the airport.

2. In order to operate at the airport a taxi must be licensed by one of the following jurisdictions:

   - The City of Alexandria
   - The City of Falls Church
   - Arlington County
   - Fairfax County
   - Montgomery County
   - Prince George's County
   - The District of Columbia

3. Arlington County restricts drop offs from National Airport to Arlington, Alexandria, or Fairfax taxis only.

4. If possible, airport dispatchers try to put patrons in the appropriate jurisdictional taxis.

5. Trip destinations from the airport generally follow the following trend:

District of Columbia	55%
Virginia	40%
Maryland	5%

   Average number of trips per month - 100,000

   37.5% of all airport trips are by taxicab;
   1.5 persons per taxi trip.

6. Fares - "A taxicab operator picking up a passenger for hire on DCA (National Airport) must charge the rates prescribed by his licensing jurisdiction if his taxicab has a meter, and he must charge those prescribed by the WMATC for interstate taxicab transportation if his taxicab does not have a meter."*

7. Recent regulations as briefly described above are specifically intended to exclude gypsy cabs.

* Federal Register VOL. 41, No. 94, Thursday, May 13, 1976.

APPENDIX IV

GLOSSARY OF TERMS

Captive rider - A transit passenger who does not have a driver's license or who does not have an automobile available for a specific trip.

Deadhead - Nonrevenue.

Demand-actuated service - Transit service in which a vehicle is dispatched or routed in response to a specific passenger request.

Demand-actuated transportation system - The facilities, equipment, personnel, and operating procedures used to provide demand-actuated transportation service.

Demand responsive - Demand-actuated.

Dial-a-bus - Demand-actuated shared-ride service provided by a bus or van.

Exclusive-use service - The traditional type of taxicab service under which a cab carrying one passenger will not pick up additional passengers except with the permission of the first passenger.

Fixed-route transit - Transit service in which vehicles follow a prescribed route.

ITA - International Taxicab Association, a trade association representing the taxicab industry.

Jitney - An individually-owned vehicle providing passenger service over a fixed route. In the United States today, the vehicle is a sedan or van charging a flat fare, is owner-operated, and competes with conventional transit service. Different definitions would be applicable in many foreign countries and in the United States prior to about 1940.

Line-haul - Many transit trips may be subdivided into line-haul travel and feeder/distributor travel. The line-haul portion is that which uses a relatively fast and direct service, while the feeder/distributor portion carries the rider between the line-haul mode and the origin or destination.

Many-to-one service - A type of demand actuated service in which all passengers are destined to or originate at a single point. Many-to-one service can typically handle more passengers per vehicle hour than many-to-many service.

Mode - A means of transportation. For purposes of this report, private automobiles, taxicabs, dial-a-buses, and conventional fixed-route transit are each considered to be a mode.

Non-revenue trip - A trip for which no revenue is received.

Paratransit - Those forms of intraurban passenger transportation which are available to the public, are distinct from conventional transit (scheduled bus and rail), and can operate over the highway and street system.

Passenger-mile - A measure of transportation usage equal to one passenger carried one mile.

Person-trip - A measure of transportation activity equal to one person completing one trip.

16(b)(2) Program - Section 16(b)(2) of the Urban Mass Transportation Act of 1964 authorizes federal funding of 80 percent of the cost of purchasing equipment to be used in transporting elderly and handicapped persons.

Revenue mile - Generally equivalent to revenue vehicle mile.

Revenue vehicle mile - The number of miles operated by a vehicle carrying paying passengers. For conventional transit operations, this figure includes mileage operated in regular service where paying passengers may be carried, even though none may be aboard.

Route-deviation service - A type of transit service in which the vehicle has a regular route but will leave it at the passenger's request to provide door-to-door service.

Service area - The area within which passengers may be picked up and dropped off.

Shared riding - A type of taxicab service in which two or more persons board the cab at different origins and travel to different destinations, each paying a separate fare.

Subscription service - A type of demand-actuated service designed to serve daily commuter trips exclusively. Passengers must make advance arrangements and must make the same trip nearly every day. Because routes can be planned in advance, this type of service can be more efficient than service which accepts individual telephoned requests for service.

Trip generator - A place which attracts people and is therefore the origin and destination for relatively high numbers of trips.

Zone fare - A system under which the service area is divided into zones, and the fare charged is related to the number of zonal boundaries between origin and destination.

APPENDIX V

ALEXANDRIA TAXIS

City Cab	26 cabs
Metro	14
Diamond	136
White Top	53
All American	31
King	37
Yellow	144
Total	441

ARLINGTON TAXIS

Crown	18 cabs
Diamond	90
Friendly	20
Hess	28
Red Top	189
Yellow	100
Total	445

Fairfax Taxis*

Springfield	29 cabs
Herndon	12
Falls Church Yellow cab	98
Ft. Belvoir	10
Total	149

* Includes Falls Church, Fairfax City

NVTC
1/10/78

APPENDIX VI

State Legislation and Regulations

The following are pertinent sections of the State Corporation Commission's Motor Carrier Laws of Virginia, Title 56, Chapter 12, pertaining to the regulation of public transportation services:

A. Article 1 - Section 56-273. Definitions

1. The term "common carrier by motor vehicle" means any person who undertakes, whether directly or by a lease or any other arrangement, to transport passengers or property for the general public by motor vehicle for compensation over the highways of the State, whether over regular or irregular routes.

2. The term "taxicab or other motor vehicle performing a taxicab service" means any vehicle having a seating capacity of not more than six passengers and not operating on a regular route or between fixed terminals used in the transportation of passengers for hire or for compensation, not a common carrier or restricted common carrier.

3. The term "broker" means any person not included in the term "motor carrier" and not a bona fide employee of any such carrier, who, as principal or agent, sells or offers for sale any transportation subject to this Chapter, or negotiates for, or holds himself out by, solicitation, advertisement, or otherwise as one who sells, provides, furnishes, contracts, or arranges for such transportation.

4. The term "minibus" means any motor vehicle having a seating capacity of not less than seven nor more than sixteen passengers and used in the transportation of passengers.

B. Article 1 - Section 56-274. Vehicles Excluded from Operation of Chapter 12

1. Motor vehicles employed solely in transporting school children and teachers;

2. Taxicabs, or other motor vehicles performing bona fide taxicab service, having a seating capacity of not more than six passengers, while operating in a city, town or county which has or adopts an ordinance regulating and controlling taxicabs and other vehicles performing a bona fide taxicab service, and not operating on a regular route or between fixed termini; provided, however,

that each operator of a motor vehicle performing a bona fide taxicab service shall file insurance as required under § 56-299 unless evidence can be shown the Commission that the operator is a self-insurer under an ordinance of the city or an ordinance of the county where the home office of the operator is located; and failure to keep insurance in force shall subject the operator to cancellation of any authority under this chapter;

3. Motor vehicles owned or operated by or on behalf of hotels while used exclusively for the transportation of hotel patronage between hotels and local railroad or other common carrier stations;

4. Motor vehicles owned and operated by the United States, the District of Columbia, or any state, or any municipality or any other political subdivision of this State, including vehicles used exclusively for handling United States mail;

5. Motor vehicles while used exclusively in transporting only bona fide employees directly to and from the factories, plants, offices or other places of like nature where they are employed and accustomed to work, provided that the operator of such vehicle shall first secure from the Commission a permit, and the necessary warrant for each vehicle so operated, neither of which permit nor warrant shall be issued by the Commission unless the applicant shall furnish the Commission at the time the application is made, with a statement in writing signed by the applicant setting forth the name and location of the factories, plants, offices or other places of like nature to and from which applicant proposes to operate, and that such applicant will transport only bona fide employees of such factories, plants, offices or like place to and from work ...

10. Any motor vehicle while transporting not more than twelve passengers in addition to the driver, if the driver and the passengers are engaged in a share-the-ride undertaking and if they share not more than the expenses of operation of the vehicle;

11. Motor vehicles while used exclusively in the transportation of passengers or property within the corporate limits of incorporated cities or towns; ...

15. Minibuses controlled and operated by a bona fide nonprofit corporation organized or existing under chapter 2 (§13.1-201 et seq.) of Title 13.1 of the Code of Virginia, or by a tax-exempt organization as defined

in §§501(c)(3) and 501(c)(4) of the United States Internal Revenue Code, as from time to time amended, while used exclusively in the transportation, for hire, for compensation, or otherwise, of members of such organization if it is a membership corporation, or otherwise, of members of such organization if it is a membership corporation, or of members of the community served by such organization if it is not a membership corporation; provided that such minibuses shall not be operated over the same or an adjacent route and on a similar schedule as a holder of a certificate of public convenience and necessity or as a public transportation authority; and provided further, that each operator of a minibus hereby excluded shall be issued an examption card and classification plate under § 56-304 and shall file insurance as required under §56-299 unless evidence can be shown the Commission that the operator is a self-insurer under an ordinance of the city or an ordinance of the county where the registered office of the operator is located; and failure to keep insurance in force shall subject the operator to cancellation of its exemption card and withdrawal of its classification plate.

C. Article 2 - Section 56-278. Required Certificates of Public Convenience and Necessity

No common carrier not exempted in Section 56-274 shall engage in operation without first having obtained from the Commission a Certificate of Public Convenience and Necessity.

D. Article 2 - Section 56-281. No Certificate to Issue When Service Already Adequate

No certificate shall be granted to an applicant proposing to operate over the route of any holder of a certificate unless and until it shall be proved to the satisfaction of the SCC that the existing service is inadequate to the requirements of public necessity and convenience, and should it be determined that it is inadequate, the existing carrier shall be given reasonable time and opportunity to remedy the inadequacy before a certificate will be granted to a new applicant.

E. Article 2 - Section 56-282. Consideration for Determination of Issuance of Certificate

In determining whether the certificate shall be granted, the Commission may, among other things, consider the present transportation facilities over the proposed route, the volume of traffic, the financial condition of the applicant, and the condition of the highway over the proposed routes.

F. Article 2 - Section 56-283. Occasional Deviations From Authorized Routes

A common carrier by motor vehicle operating under a certificate issued by the Commission may occasionally deviate from the route over which it is authorized to operate under a certificate, under such general or special rules and regulations as the Commission may prescribe.

G. Article 4.1 - Section 56-291.1. Permit Required for Taxicab Service

It shall be unlawful for any taxicab or other motor vehicle performing a taxicab service to operate on any public highway in this State outside the corporate limits of incorporated cities or towns, except as otherwise provided in Subsection (2) of Section 56-274, without first obtaining a permit from the SCC.

H. Article 4.1 - Section 56-291.3. Chapter Does Not Make Taxicab Operators Common Carrier

Nothing in this chapter shall be construed to make or constitute operators of taxicabs or other motor vehicles performing a taxicab service common carriers.

I. Article 4.1 - Section 56-291.6. Qualifications of Operators; Stands.

The board of supervisors or other governing body of any such county or the governing body of any such town may prescribe such reasonable regulations as to the character and qualifications of operators of any such vehicle as they deem proper and may provide for the designation and allocation, by the sheriff or chief of police, of stands for such vehicles and the persons who may use the same.

J. Article 4.1 - Section 56-291.7. Regulation of Rates and of General Operations

The board of supervisors or other governing body of any county or the governing body of any town covered by this article may regulate the rates and charges of any motor vehicles used for the transportation of persons for a consideration on any highway, street, road, lane or alley in the county or town and may prescribe such reasonable regulations as to filing of schedules of rates, charges and the general operation of such vehicles, as it deems proper.

K. Article 4.2 - Section 56-291.4. License and Payment of License Tax May Be Required.

The board of supervisors or other governing body of Arlington County or any other county or town heretofore authorized by

law may require a license for and impose upon and collect a license tax from every person, firm, association or corporation who or which operates or intends to operate in such county or town any taxicab or other motor vehicle for the transportation of passengers for a consideration. The tax may be upon each such motor vehicle so operated. The board of supervisors or other governing body of the county or the governing body of the town may by ordinance provide for levying and collecting the tax and may impose penalties for violations of the ordinance and for operating any such motor vehicle without obtaining the required license.

L. Article 4.2 - Section 56-291.7. Regulation of Rates and General Operations.

The governing body of any town or county covered by this article may regulate the rates, charges, and general operation of vehicles used for the transportation of persons for a consideration.

M. Article 5 - Section 56-292. When Broker's License Required.

No person shall for compensation sell or offer for sale transportation subject to this chapter (other than transportation governed by article 4.2 (§56.291.4 et seq.) hereof) or shall make any contract, agreement, or arrangement to provide, procure, furnish, or arrange for such transportation or shall hold himself out by advertisement, solicitation, or otherwise as one who sells, provides, procures, contracts, or arranges for such transportation, unless such person holds a broker's license issued by the Commission to engage in such transactions; provided, that the provisions of this section shall not apply to any carrier holding a certificate or permit under the provisions of this chapter or to any bona fide employee or agent of such motor carrier, so far as concerns transportation to be furnished wholly by such carrier or jointly with other motor carriers holding like certificates or permits, or with a common carrier by railroad, express or water.

N. Article 9 - Section 56-305. Duties of Carriers of Passengers as to Through Routes, Equipment, Rates, Regulations, etc.

Every common carrier by motor vehicle shall establish reasonable through routes with other such common carriers and shall provide safe and adequate service, equipment, and facilities for the transportation of passengers; shall establish, observe, and enforce just and reasonable individual and joint rates, fares, and charges ... without causing any undue perference or prejudice or advantage towards any participating carriers.

O. Article 9 - Section 56-310. Establishment of Through Routes, Etc. by Commission

The SCC shall, whenever deemed necessary or desirable in the public interest, after hearing, upon complaint, or upon its own initiative, establish through routes, joint rates, fares, charges, regulations, or practices, applicable to the transportation of passengers by common carrier.

APPENDIX VII

Code of Virginia, amended; Section 15.1-37.3:3 Local Transportation Systems.

Notwithstanding any other provision of law to the contrary, any county, or city which is a member of any transportation district may, with the concurrence of the transportation district commission that there is a need for a shared ride taxi system and the unavailability of adequate existing public transportation or public transportation proposed to be available within a reasonable period of time, construct, purchase, operate, maintain or contract for a shared ride taxi system to be operated in such county or city for the health, safety, welfare, comfort and convenience of the public. Such system may be financed from general revenues or funds received from the United States government, from the Commonwealth of Virginia or any other source. Such system or the equipment and property needed for such system may also be constructed or purchased from the proceeds of bonds which may be issued pursuant to the Public Finance Act. Rates may be charged for the use of the system in such amount as the governing body of the county or city deems reasonable, and different rates may be charged to different reasonable classifications of users.

The need for a shared ride taxi system and the unavailability of adequate existing or proposed public transportation may be based on the lack of such system or on the lack of such system at such user rates as will promote the health, safety, welfare, comfort and convenience of the public. Contracts may be made with existing or proposed shared ride taxi systems, both publicly and privately owned, for the subsidy of all users or groups of users.

In the administration of this act private carriers are preferred over public ownership or operation, therefore, before any such county, city or town undertakes to establish and operate its own transportation system which uses taxis or other similar vehicles, it shall first make a bona fide attempt to enter into contracts with existing privately owned taxi businesses. If such county, city or town cannot reach a reasonable agreement within an equitable period of time, then it may proceed by ordinance, to establish and operate its own system.

Any such county or city shall have all powers necessary or convenient to carry out any of the foregoing powers.

APPENDIX VIII

Transportation District Act of 1964

Regulations dealing with paratransit are in the Transportation District Act of 1964 where the Northern Virginia Transportation Commission is defined and in recent amendments to the Sanitary District Act giving these districts the powers necessary to set up transportation systems.

The Northern Virginia Transportation Commission is made up of representatives of all the jurisdictions within the Transportation District, Fairfax County, Falls Church, Fairfax City, Arlington and Alexandria. As defined in the Transportation District Act, it has the power to cooperate in the preparation of transportation plans by the Washington Metropolitan Council of Governments and to enter into contracts or agreements to provide transit facilities within the District. The following are the pertinent sections of the Act:

ARTICLE 4.

Powers and Functions of Commission

1. Section 15.1-1357. Powers and functions generally.- Any other provision of law to the contrary notwithstanding, a commission shall have the following powers and functions:

   (b) When the transportation district is located within a metropolitan area; which includes all or a portion of a state or states contiguous to Virginia, the commission--

   (1) Shall not prepare a transportation plan nor construct or operate transit facilities, but shall collaborate and cooperate in the manner specified in article 6 (§§15.1-1365. 15.1-1366) hereof with an agency in the preparation of a transportation plan for such metropolitan area and the revision and amendment thereoffrom time to time;

   (2) Shall, in the manner specified in article 6 hereof, in cooperation with the governing bodies of the component

governments embraced within the transportation district, formulate the tentative policy and decisions of the transportation district with respect to the planning, design, location, construction, operation and financing of transportation facilities;

(3) May, when a transportation plan applicable to such a transportation district is adopted, enter into contracts or agreements with an agency to contribute to the capital required for the construction and/or acquisition of transportation facilities and for meeting expenses and obligations in the operations of such facilities;

(4) May, when a transportation plan applicable to such transportation district is adopted, enter into contracts or agreements with the counties and cities embraced within the transportation district to provide or cause to be provided transportation facilities and service to such counties and cities;

(5) Notwithstanding any other provision herein to the contrary:

(i) May acquire land or any interest therein by purchase, lease, gift, condemnation or otherwise and provide parking facilities thereon for use in connection with any transportation service;

(ii) May acquire land or any interest therein by purchase, lease, gift, condemnation or otherwise in advance of need for sale or contribution to an agency, for use by that agency in connection with an adopted mass transit plan, and

(iii) May, in accordance with the terms of any grant from or loan by the United States of America or the Commonwealth of Virginia, or any agency or instrumentality thereof, or when necessary to preserve essential transportation service, acquire transit facilities or any carrier, which is subject to the jurisdiction of the Washington Metropolitan Area Transit Commission. ...

2. Section 15.1-1357.1. Regulation of Fares, Schedules, Franchising Agreements and Routing of Transit Facilities.

The Transportation Commission shall have the power to exercise exclusive control, notwithstanding any provision of the law to the contrary of matters of regulation of fares, schedules, franchising agreements and routing of transit facilities within the boundaries of the Transportation District.

3. Section 15.1-1357.2. Protection of Employees of Public Transportation Systems.

In any county or city, the Commission referred to shall not operate any such transit facility or otherwise provide any transportation services, unless fair and equitable arrangements have been made for the protection of employees of existing transportation systems in the Transportation District or in the metropolitan area in which the Transportation District is located.

APPENDIX IX

(S 765) Approved March 22, 1977

Be it enacted by the General Assembly of Virginia:

1. That §§3 and 12a, as severally amended, of Chapter 161 of the Acts of Assembly of 1926, which chapter was continued in effect by §21-120 of the Code of Virginia, are amended and reenacted as follows:

§3. After the entry of such order creating a sanitary district of such county, the board of supervisors or other governing body hereinafter referred to as "board of supervisors" thereof shall have the following powers and duties, subject to the conditions and limitations hereinafter prescribed.

(a) To construct, reconstruct, maintain, alter, improve, add to and operate motor vehicle parking facilities, water supply, drainage, sewerage, garbage disposal, heat, light, power, gas, sidewalk, curbs, gutters, streets, tunnels, bridges, pedestrian bridges or tunnels, community buildings, recreational facilities, parks, playgrounds, open spaces, lighting and fire-fighting systems for the use and benefit of the public in such sanitary district. When the words "system", "systems", "project", "projects", "facility", or "facilities" or "public improvements" are used in this act, they shall include all of the foregoing unless the context clearly indicates otherwise.

(a-1) To provide for undergrounding of existing and future utility wires, and such provision shall for purposes of this act be considered to be construction of a "system".

(a-2) To construct, reconstruct, acquire, maintain, alter, improve, add to and operate a public transportation system of any kind except as otherwise provided herein, subject to the approval of the transportation district commission having jurisdiction of the physical area, if such a commission exists. Such approval shall be given if the commission finds that the proposed public transportation system is consistent with the commission's transportation plan for the area or with such other transportation plan for the area which has been adopted as provided in the Transportation District Act of 1964, as amended, or other appropriate legislation. "Public transportation system" shall not include "shared ride taxi system" as that phrase is used in §15.1-37.3:3 or taxicab-type vehicles or other motor vehicles which carry no more than six passengers.

APPENDIX X

WMATA OPERATIONS

BASE-DAY SERVICE: VIENNA, TYSON'S, MCLEAN

MAJOR ROUTES	FROM	TO	NO. OF TRIPS	AVG. HEADWAY	CAPACITY
3T Tyson	Tyson's C.	Rosslyn - Metro	6	60	318
3T Tyson	Tyson's C.	11th & E. N.W.	5	50 min.	265
3V Vienna	Tyson's C.	Rosslyn	5	60	265
3V Vienna	"	11th & E. N.W.	4	63 min.	212
3H Tyson/Mclean	Tyson's C.	Rosslyn	7	60 min.	371
TOTAL			27	60 min.	1431
3's Tyson's	"	11th & E. N.W.	9	32 min.	477
5S Herndon via	Tyson's	Farragut/ Rosslyn	12	50 min.	636
5W Fairfax City	"	Farragut	9	65 min.	477
28 A & B	Tyson	Alex.	21	30 min.	1133
23T	Tyson	Crystal City	23	30 min.	1219
TOTAL SERVICE	Tyson's		101	40 min.	5353

BASE DAY - WMATA

1978

MAJOR ROUTES	FROM	TO	NO. OF TRIPS	AVG. HEADWAY	CAPACITY
3T via Lee	Rosslyn	Tyson's	9	40 min.	477
3T " "	11th & E.	"	3	80 min.	159
3V Vienna	Rosslyn	Tyson's	8	45	424
3V "	11th & E.	"	2	120 min.	106
3H McLean	Rosslyn	"	7	51 min.	371
TOTAL 3's			29	67 min.	1537
28's TOTAL	Alex.	Tyson	20	30 min.	1060
5S Herndon	Farragut	Tyson's	10	60 min.	530
5W Fairfax City	"	"	9	67 min.	477
5K George Mason	"	"	1	---	53
TOTAL 5's	"	"	20	39 min.	1060
23S & T	Crys.City	"	21	30 min.	1113
TOTAL		Tyson's	90	50 min.	4770

WMATA OPERATIONS (Incremental Morning Peak)

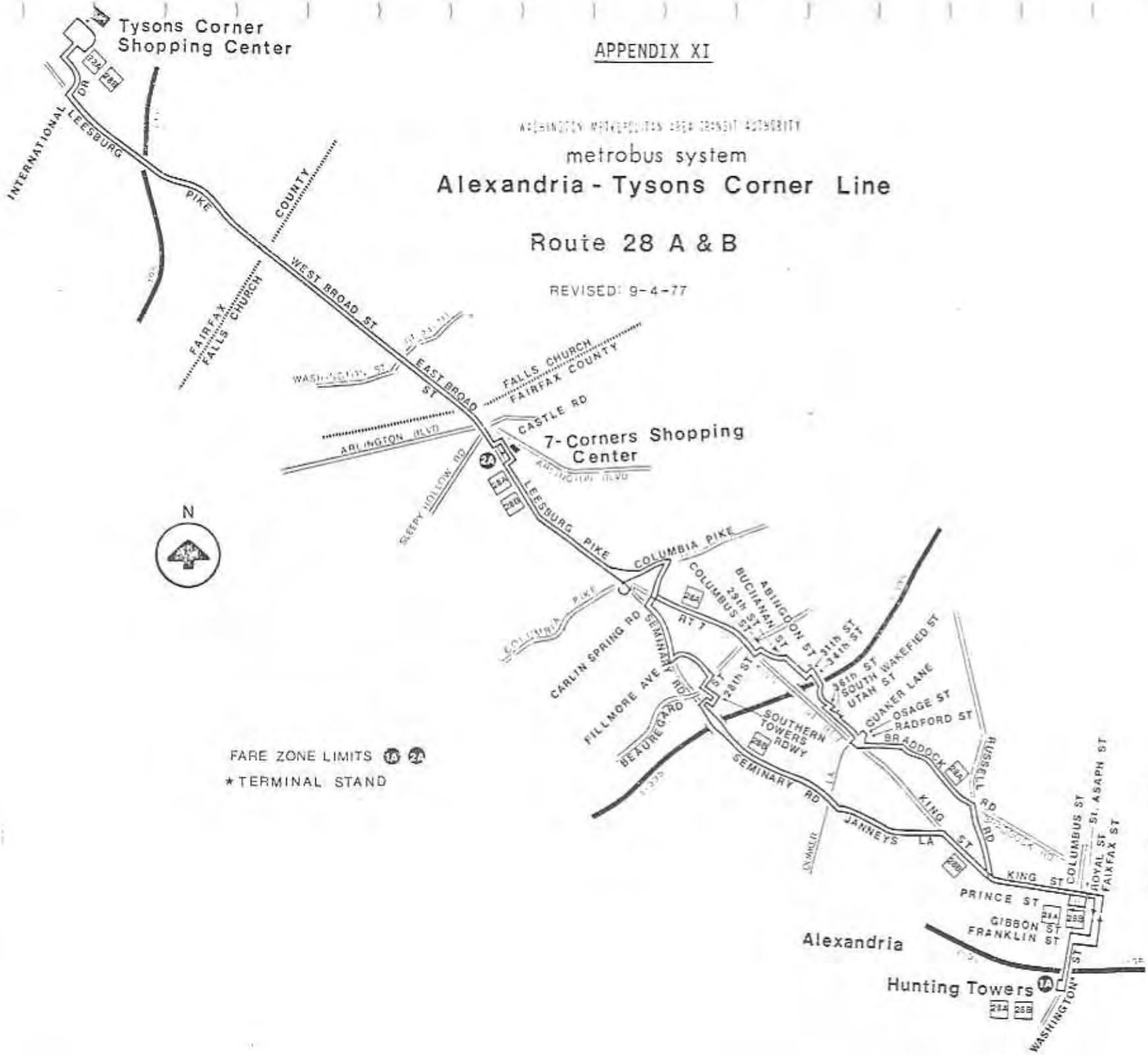
Vienna, Tyson's Corner, Falls Church and McLean

MAJOR ROUTES	FROM	TO	NO. of TRIPS	AVG. HEADWAY	CAPACITY
5X (via 495)	Vienna	Pentagon	2	30 min.	103
5Z (via 123)	Tyson's	Farragut Sq.	8	15 min.	424
5K - 5W	Oakton	" "	8	18 min.	424
5S	Herndon	" "	5	33	265
Total 5's	Tyson's	Farragut Sq. Pentagon	23	Avg. 24 min.	1150
via 3T/3R Lee Hwy.	Tyson's	Rosslyn	9	20 min.	477
3H (via 123)	Tyson's	" "	5	30 min.	265
3V (via Lee)	Vienna/ Tyson's	" "	10	24	530
Total 3's	"	" "	24	Avg. 25 min.	1272
28 A & B	Tyson's	Alex.	7	30 min.	371
23S & T	Tyson's	Crystal City	7	26 min.	371
TOTAL			61	25 min.	3233

WMATA OPERATIONS (Incremental Afternoon Peak Service)

Vienna, Tyson's Corner, Falls Church, and McLean

MAJOR ROUTES	FROM	TO	NO. OF TRIPS	AVG. HEADWAY	CAPACITY
5X (via 495)	Pentagon	Vienna	2	30 min.	106
5Z (via 495)	Farragut	Tyson's C.	8	13 min.	424
5K-5W via 123	"	Oakton	6	26	318
5S (via Tyson)	"	Fairfax City	3	60 min.	159
* TOTAL 5's			19	32 min.	1007
3T-3R via Lee	Rosslyn	Tyson's	10	18 min.	530
3H via McLean	"	"	5	36 min.	260
3V via Lee	"	Vienna	4	45 min.	212
3V via Lee	"	Tyson's	4	45 min.	212
TOTAL 3's			23	36 min.	1219
28 A & B	Alex.	Tyson	6	26	318
23S & T	Crys.City	Tyson's	6	30 min.	371
TOTAL		Tyson's	54	30 min.	2815



ARLINGTON METROPOLITAN AREA TRANSIT AUTHORITY

metrobus system

Alexandria - Tysons Corner Line

Route 28 A & B

REVISED: 9-4-77

APPENDIX XII

AREAS STUDIED

This study identified six areas where there appeared to be the most potential services for the off-peak hours. These were not new areas where paratransit was studied as an alternative; rather they are areas where past studies have indicated a need for improved transportation services.

The following are the areas studied:

Area A: McLean-Tyson's

B. Falls Church - Bailey's Crossroads

C. Vienna/Tyson's Area

D. West Alexandria

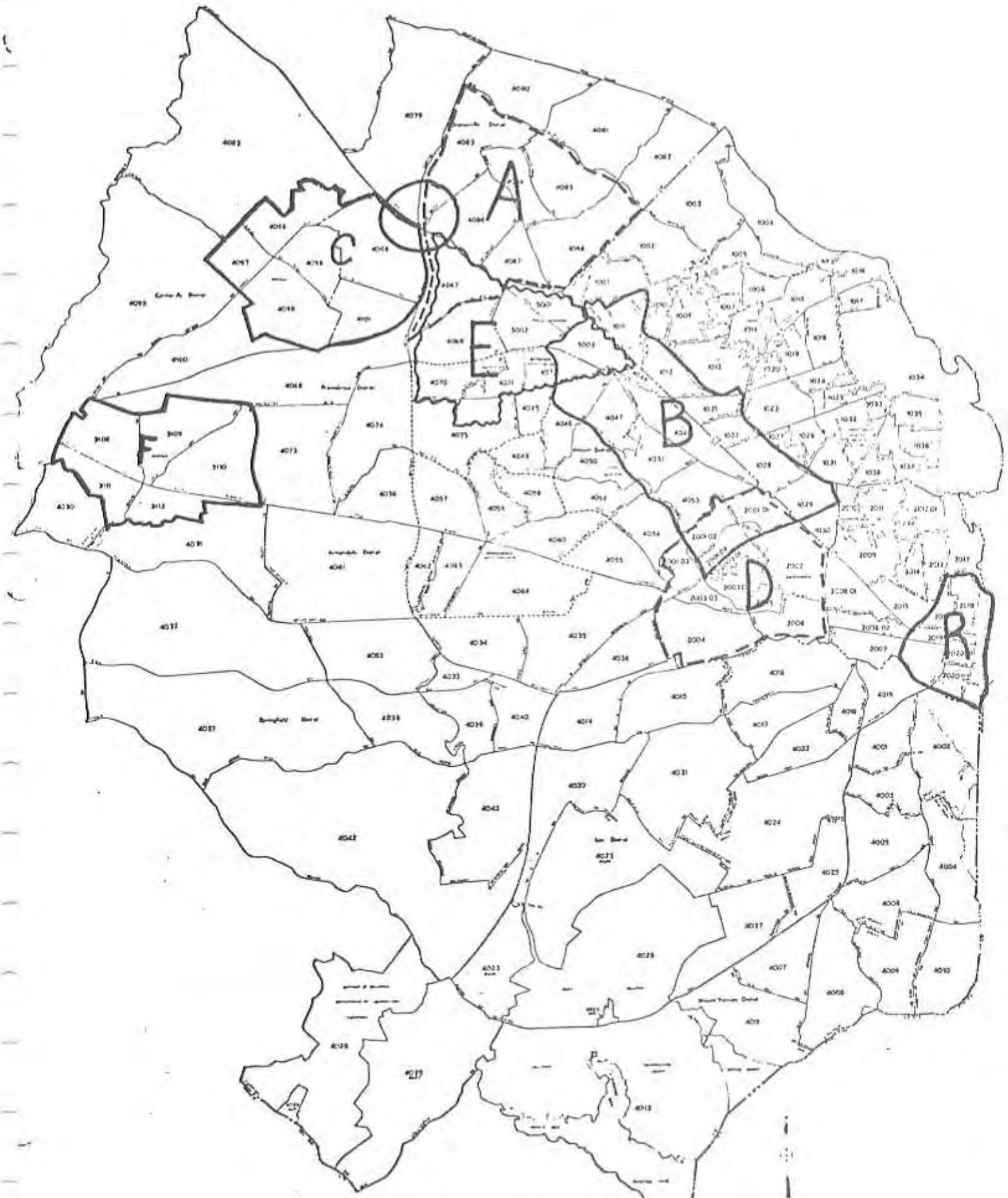
E. Falls Church - Seven Corners - Tyson's

F. Fairfax City

G. East Alexandria

During the course of the study several recently developing areas were identified where, if growth continues, there will be a great need for improved transportation services. These include Springfield/Burke and the South Alexandria/Mt. Vernon Corridor. These areas should be considered for future studies as growth continues.

MAP 1



DEMOGRAPHIC ANALYSIS
and
PARATRANSIT OPTIONS

Area A McLean-Tyson's

This area has an employment level of over 21,000 located in the central activity area of Westgate-Tyson's Corner.* In the Fairfax County Master Plan for the Tyson's Corner complex new growth is projected which will bring even higher employment levels in the future. (See Table I and Maps 2 and 3.)

The area Master Plan designates this as an area where a paratransit system should be provided. What this means is that those areas around Tyson's Corner are the most likely areas where paratransit has a chance for success. At present the area's elderly are served by Route 9 of the Fairfax Senior Shuttle.

TABLE I

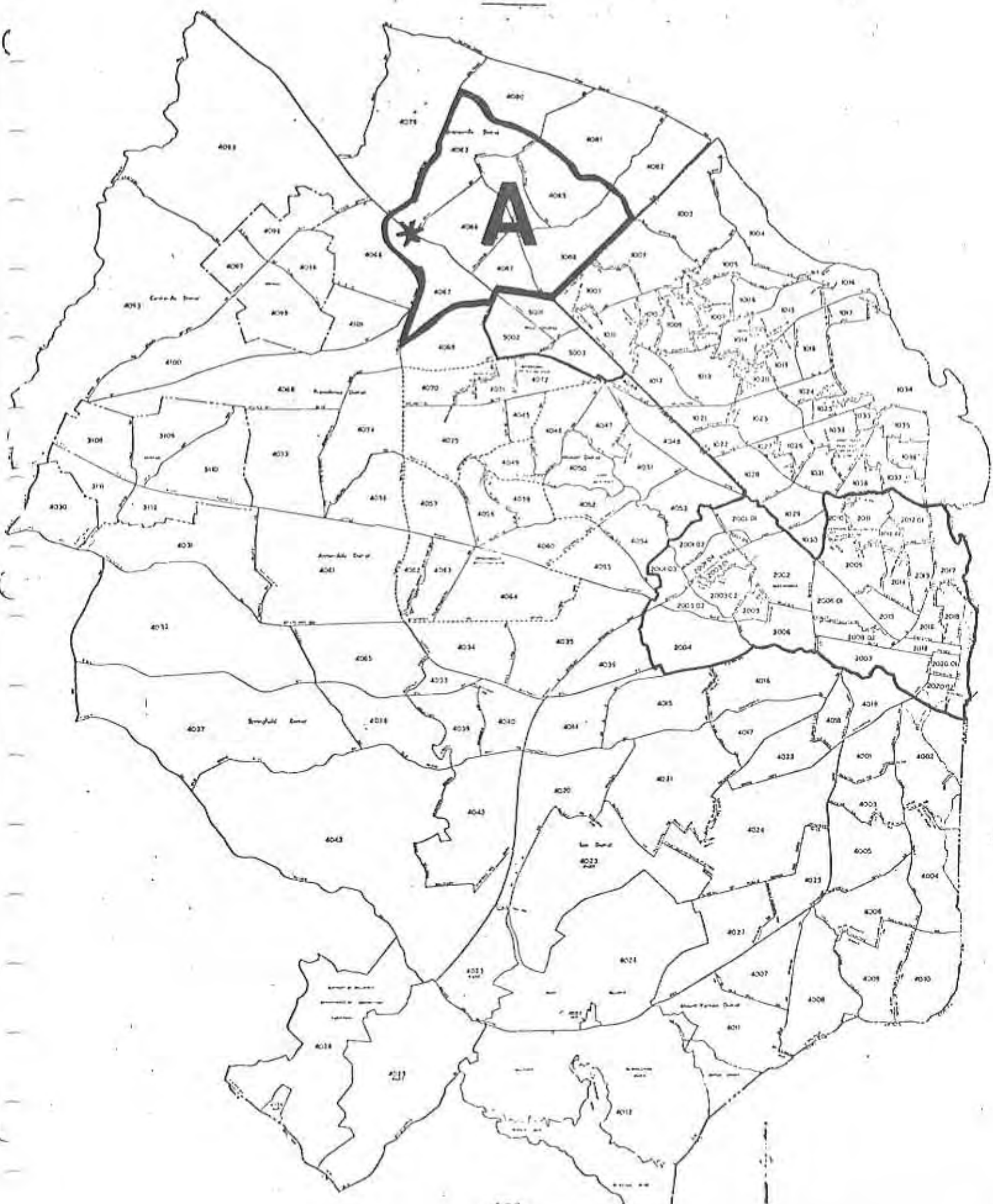
Tysons Corner Complex Area (From Fairfax County Master Plan)

	EXISTING				ESTIMATED ADDITIONAL 1975 - 1990					
	AC.	DU'S	POP.	DU/AC.	AC.	C. & A. DU'S	ADD'L. DU'S	TOTAL DU'S	POP.	DU/AC.
Residential										
S. F.	78	139	494	1.8	- 1		- 1	- 1	- 4	NA
T. H.					15	47	110	157	430	10.5
G. A.					95	217	1,631	1,848	4,620	19.5
E. A.					42	.	840	840	1,277	20.0
Commercial	212				193					
Industrial	28				97					
Parks & Rec.	3				32*					
Other	3				35					
Vacant	1,003				495					
TOTAL	1,327	139	494	0.1	1,003	264	2,580	2,844	6,323	2.8

* Portions of residential and industrial sites not suitable for construction are included with residential and industrial acreage.

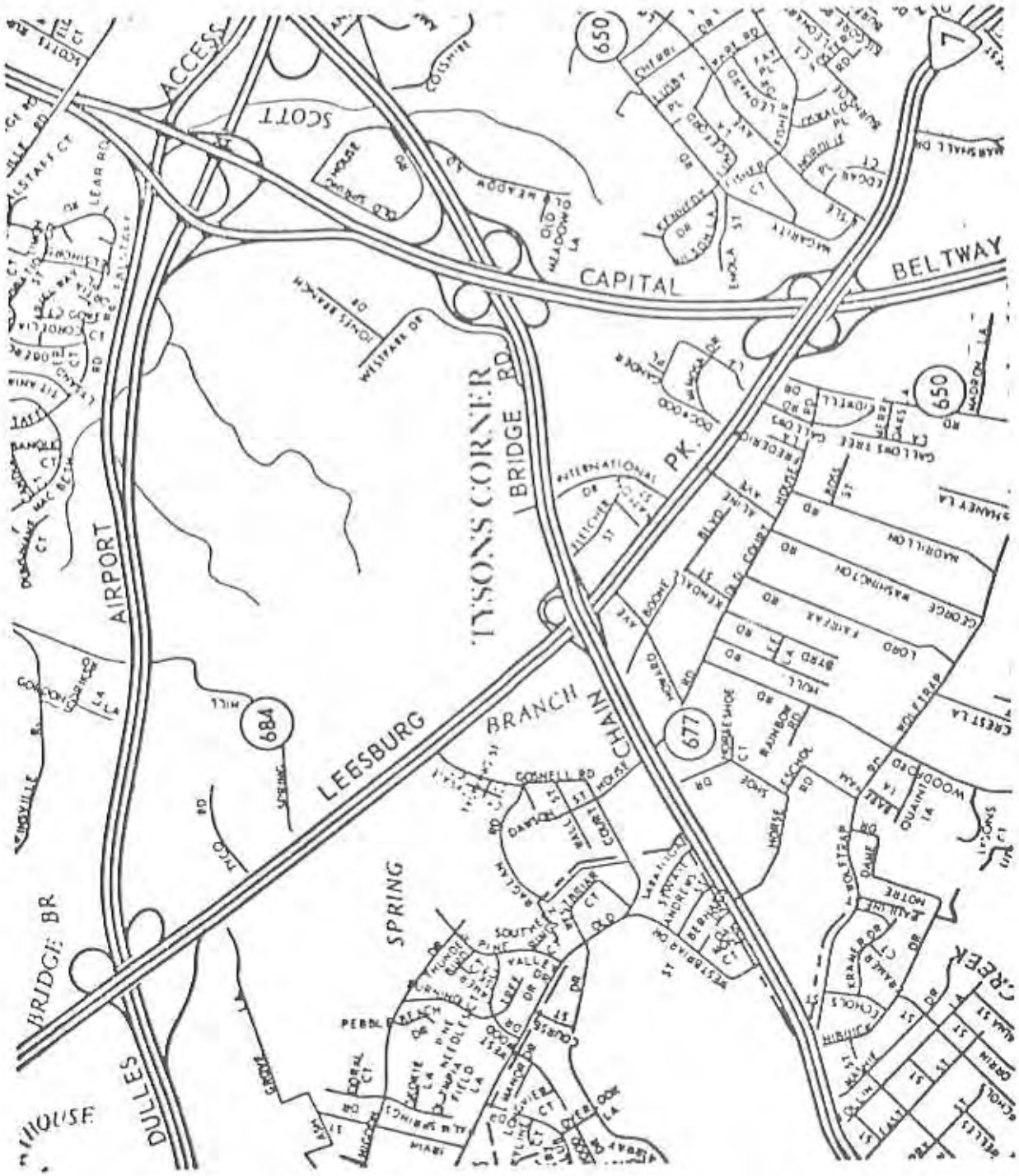
* Source: WMCOG Growth Policy Report 1977, pp. 72-88-89.

MAP 2



MAP 3

TYSONS CORNER COMPLEX AREA



The following demographic data sheet #1, for area A, shows a total population of 38,591 with a density level of eight persons per acre. This makes it an unlikely area for conventional fixed Metrobus routes.

The other data on sheet 1 shows a 56% level of non-working married women and a teenage-elderly population of 18% - a net grouping of 75% of the population non-commuter transportation users. With just under half these households having one or no auto access, leaving a high margin for off-peak transportation service for shopping, recreational and medical trips.

The route structure which presently exists in the area is designed on radial routes to and from the downtown employment centers.

Map 4 gives the 1976 traffic volumes for the Tyson's Corner complex area.

FIGURE 1

Area A* — McLean - Tysons

	1970	1976
Size (Sq.mile)	7.6	7.6
Population	33,801	38,591
Density (4,882 acres)	6.9	7.9

Activities: Major employment and Shopping Center

Employment: 21,000+

Age Profile:

- % Elderly : 6%
- % Teenage : 12%
- % Remaining 82%

Total Workers: 14,394

- % workers in Fairfax: 34%
- % married women not working: 56%

Median Family Income

- 0 - $4,000: 4%
- $4,- $10,000: 13%
- $10 - $15,000: 25%
- $15 + 58%
- % families below proverty : 3%
- Total Families : 8,657

Auto Ownership Per Occupied Unit:

- No car : 3%
- 1 car : 41%
- 2 cars: 57%

Mode of Travel to Work (1970)

- % auto drivers: 77%
- % auto passengers: 13%
- % Bus passengers: 4%
- % Other: 6%

Existing Fixed Route Service

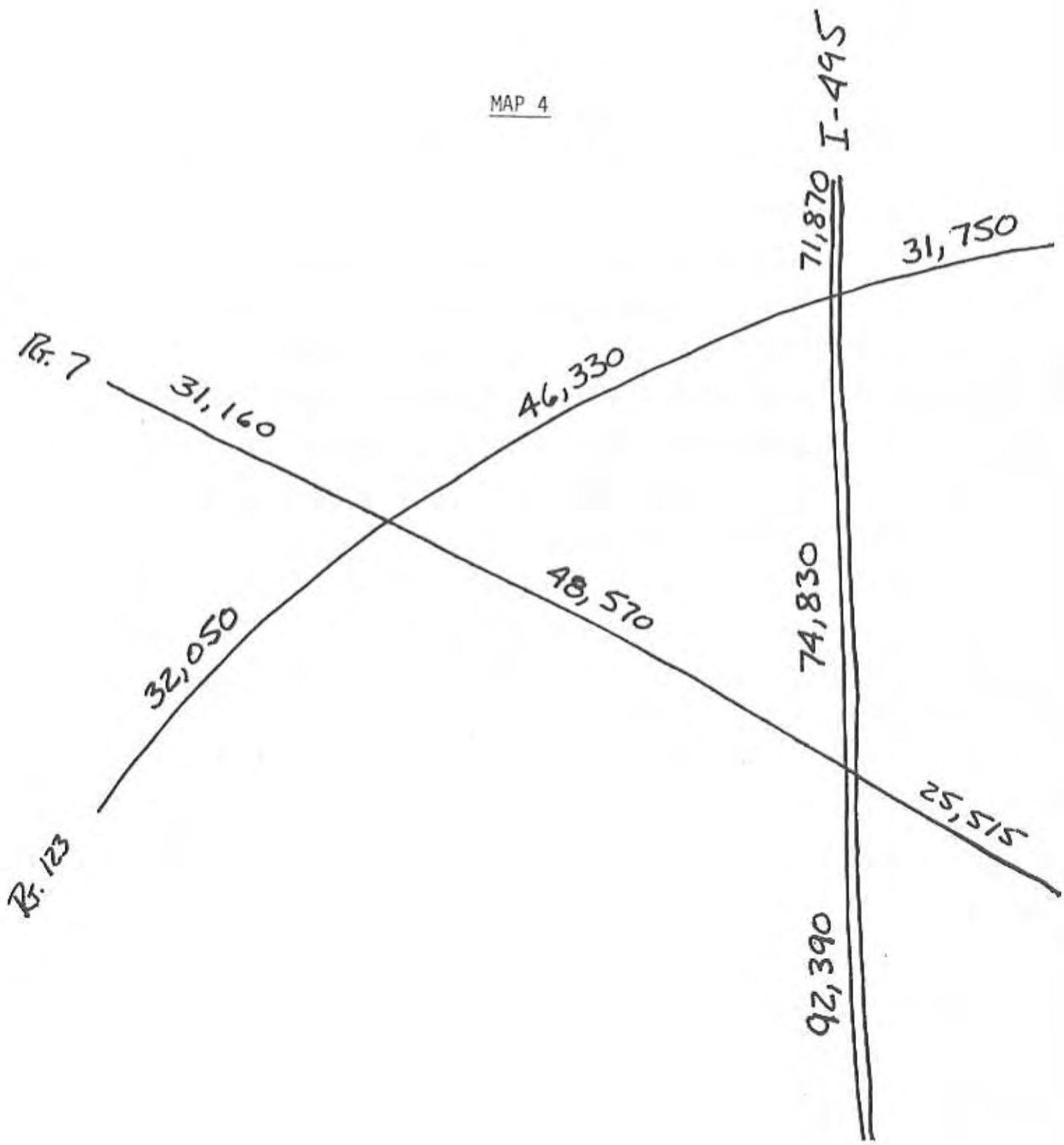
Peak
- Service type: Line haul Local and Express
- Coverage: Primary roadways
- Frequency 24 per hour/ 8:30-9:30 AM (At Tysons Corner Terminal)

Off Peak
- Service type : Line Haul Local - Limited Sat.
- Coverage: Primary Roadways
- Frequency 22 per hour 12:00 - 1 P.M.(At Tyson's Corner Terminal)

Roadway Network Type: Discontinuous Roads south of Rt. 7

*Data Sources:
- 1970 U.S. Census PHC(1)-226
- Fairfax County Standard Reports, Off. of Research & Stat.
- WMCOG Growth Policy Report.

MAP 4



TYSONS CORNER

1976 TRAFFIC VOLUMES

Area B - Falls Church - Bailey's Crossroads

This area has an employment level of approximately 16,000* located within the defined service area, see Map 5, 53% of the residents working in the Virginia suburbs. In general this area appears to have good potential for paratransit services because of its population density, 12 per acre; and its potential market, a significant number of individuals labeled as captive transit riders, the elderly, teenages and those individuals with no auto.

This area is well served by Metrobus routes both radially and circumferentially, with 7 Corners Shopping Center as a bus terminal. It is one of the few spots in Northern Virginia where one can catch a bus to go North, South, East or West. The routes, however, do not give good neighborhood service, and that is where paratransit service is needed.

FIGURE 2

Area 8 — Falls Church - Bailey's Crossroads

	1970	1976
Size (Sq.mile)	9.5	9.5
Population	68,249.5	73,763
Density (6084.2 acres)	11.2 per acre	12 per acre

Activities: Shopping Center, High Rises, Offices

Employment: (1972)

Age Profile:

- % Elderly: 9%
- % Teenage: 8%
- % Remaining: 83%

Total Workers: 36,013.5

- % workers in Fairfax: 53%
- % married women not working: 13%

Median Family Income

- 0 - $4,000: 6%
- $4,- $10,000: 28%
- $10 - $15,000: 27%
- $15 + : 42%
- % families below proverty: 4%
- Total Families: 18,201

Auto Ownership Per Occupied Unit:

- No car: 10%
- 1 car: 57%
- 2 cars: 29%

Mode of Travel to Work (1970)

- % auto drivers: 62%
- % auto passengers: 15%
- % Bus passengers: 16%
- % Other: 7%

Existing Fixed Route Service

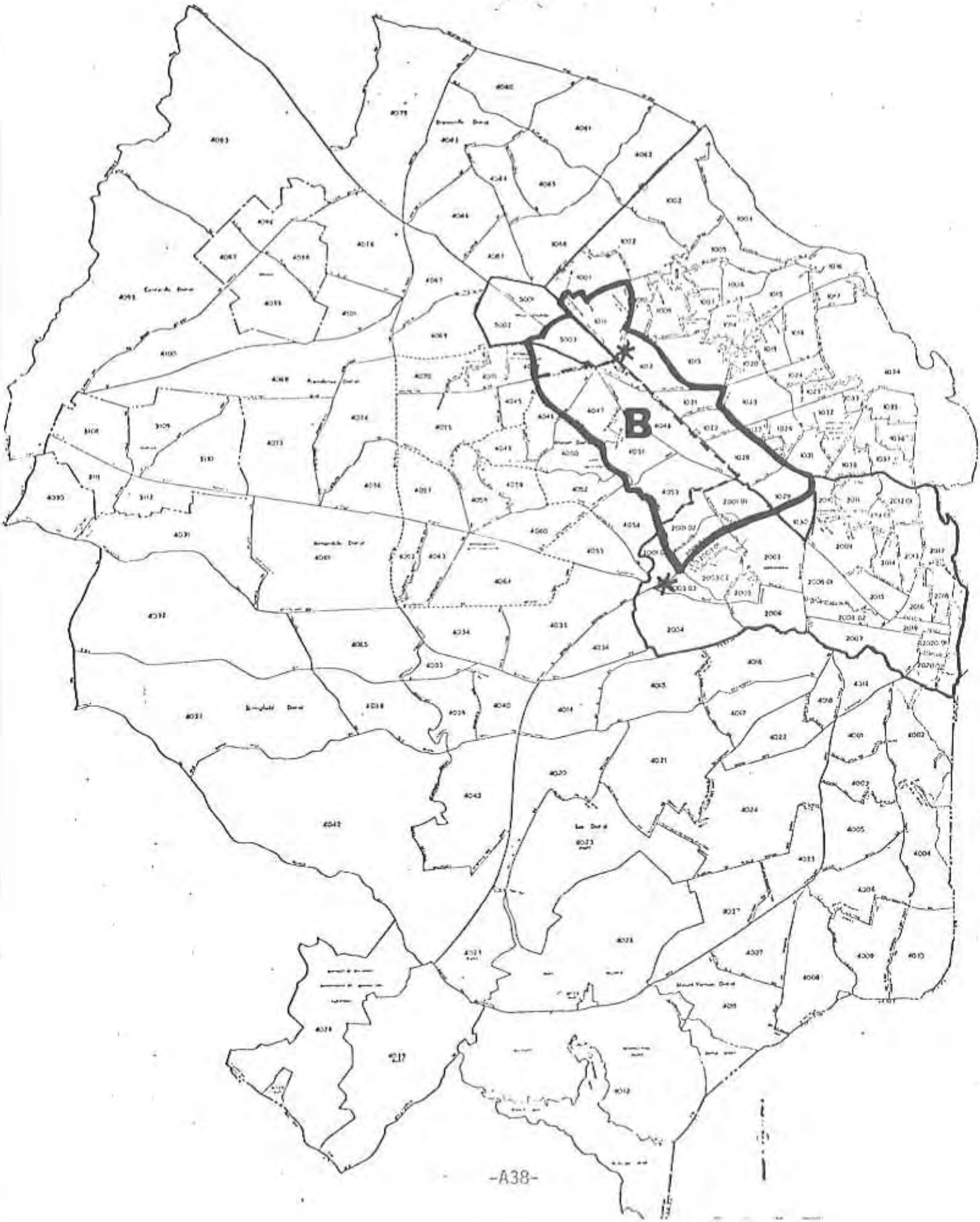
Peak
- Service type: Line Haul/Circumferential
- Coverage: All primary roads/some secondary
- Frequency: 20 per hour 8:30-9:30 AM (at 7 Corners Terminal)

Off Peak
- Service type: Line Haul/Circumferential
- Coverage: All primary roads/ some secondary
- Frequency: 20 per hr. (At 7 Corners Terminal)

Roadway Network Type: Some discontinuous roads in neighborhoods.

Data Sources:
- 1970 U.S. Census PHC (1)-226
- Fairfax County Standard Reports, Off. of Research Statistics.
- Arlington County Household and Population Report #2

MAP 5



Area C Vienna/Tyson's Area

This area is located southwest of the Tyson's Corner employment shopping complex. It is unique in that up until recently it was served by a privately owned and operated jitney service. This service, described earlier in this report, was marginally successful and managed to run at a very low deficit compared to the publicly run transit systems in the metropolitan area.

The significant characteristics of this area that make it attractive for paratransit versus off-peak Metrobus service are as follows. First, as defined it has a 1976 population of 24,000+ with a density of six persons per acre. There are approximately 19,000 jobs in the immediate area, with more growth projected. There is a captive rider group of 6% elderly, 13% teenage, with 40% of the households having only one auto, and 54% of the married women not working.

FIGURE 3

Area C — Vienna/Tyson's Area

	1970	1976
Size (Sq.mile)	6.3 sq. mi.	6.3 sq. mi.
Population	24,965	24,076
Density (4045 acres)	6	6

Activities: Large shopping & employment center + town retail stores + employment.

Employment: 19,000+

Age Profile:

- % Elderly 6%
- % Teenage 13%
- % Remaining 81%

Total Workers: 9,436

- % workers in Fairfax 40%
- % married women not working 54%

Median Family Income

- 0 - $4,000 4%
- $4,- $10,000 13%
- $10 - $15,000 27%
- $15 + 56%
- % families below proverty 4%
- Total Families 5,870

Auto Ownership Per Occupied Unit:

- No car 3%
- 1 car 40%
- 2 cars 63%

Mode of Travel to Work (1970)

- % auto drivers 75%
- % auto passengers 14%
- % Bus passengers 4%
- % Other 6%

Existing Fixed Route Service

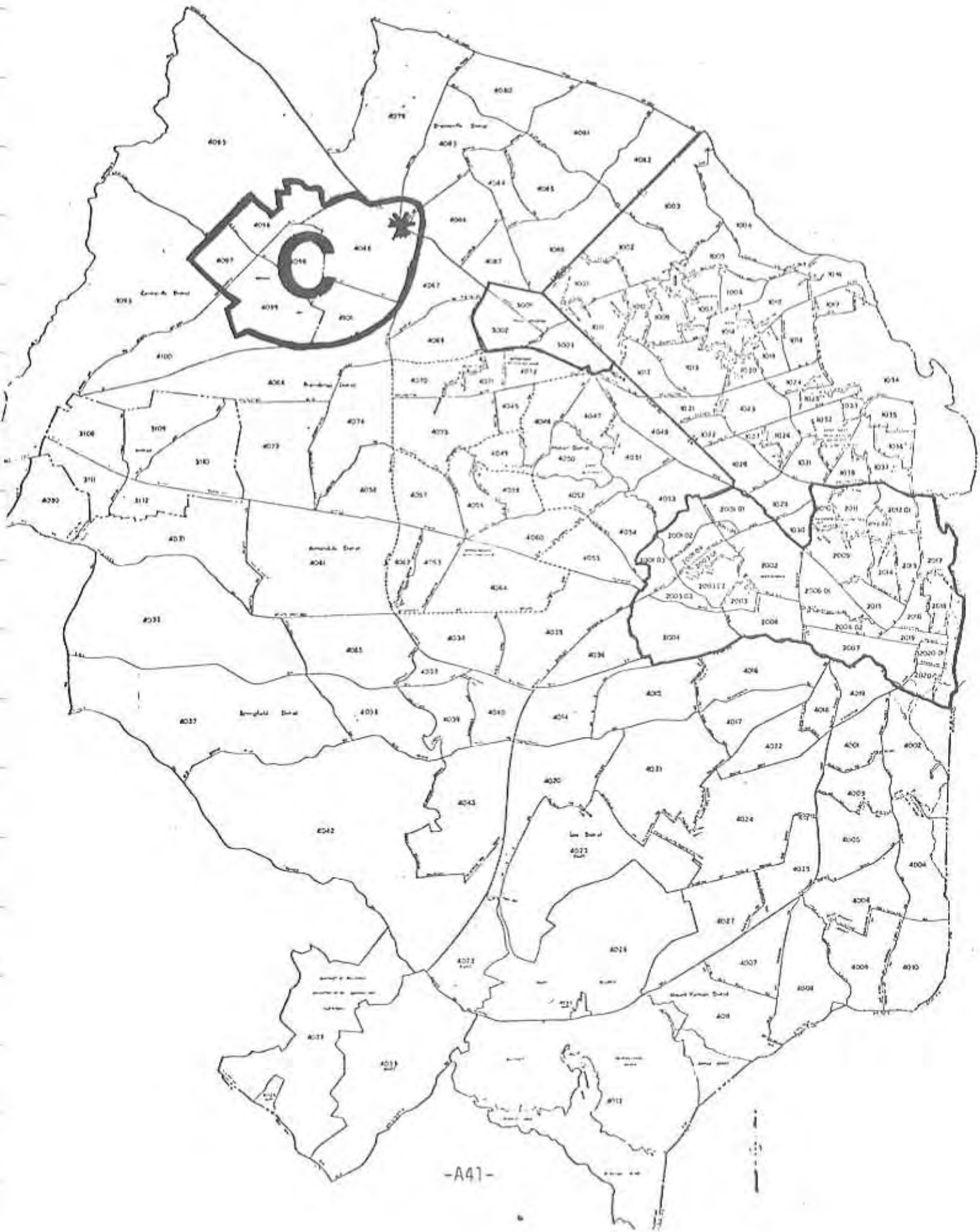
Peak
- Service type - line Haul, Local & Express
- Coverage - Primary roads and some secondary
- Frequency - 9 per hour

Off Peak
- Service type - Line Haul, limited off-peak
- Coverage - Primary roads, some secondary
- Frequency - 5 per hour.

Roadway Network Type - Good road network.

Data Source:
- MWCOG Growth Policy Report 1977
- 1970 U.S. Census PHC(1) - 226
- Fairfax County Standard Reports, Off. of Research & Statistics.

MAP 6



Area D West Alexandria

This area was initially looked at because of the high population density in the area, 13.6 per acre, in 1976. It has a large shopping center and over 20,000 jobs. The area's captive rider market is also large with 6% of the population elderly, a large elderly housing area; 8% teenage; 58% of the households with only one auto, and 7% with no auto at all.

At the present time this area has excellent bus service in the peak hour and good service off-peak and is served by a subsidized taxi service for the elderly and minibus routes for the elderly. These two existing paratransit systems are well patronized, which has given the populous a good impression of paratransit service. In addition to these public services, several of the large apartment complexes have minibus service to shopping areas and bus terminals. Although fragmented, together these services give residents a great deal of flexibility in the mode of transportation they choose to use.

FIGURE 4

Area D — West Alexandria

	1970	1976
Size (Sq.mile)	6 sq. mi.	6 sq. mi.
Population	46,327	51,703
Density (2791.9 acres)	12.2	13.6

Activities: Large shopping center, small offices, hospital

Employment: (1972) 20,000+

Age Profile:

- % Elderly 6%
- % Teenage 8%
- % Remaining 86%

Total Workers: 23,866

- % workers in Alexandria 24%
- % married women not working 54%

Median Family Income

0 - $4,000	6%
$4, - $10,000	30%
$10 - $15,000	30%
$15 +	35%

- % families below proverty 4%
- Total Families : 12,317

Auto Ownership Per Occupied Unit:

- No car 7%
- 1 car 58%
- 2 cars 29%

Mode of Travel to Work (1970)

- % auto drivers 68%
- % auto passengers 16%
- % Bus passengers 15%
- % Other 7%

Existing Fixed Route Service

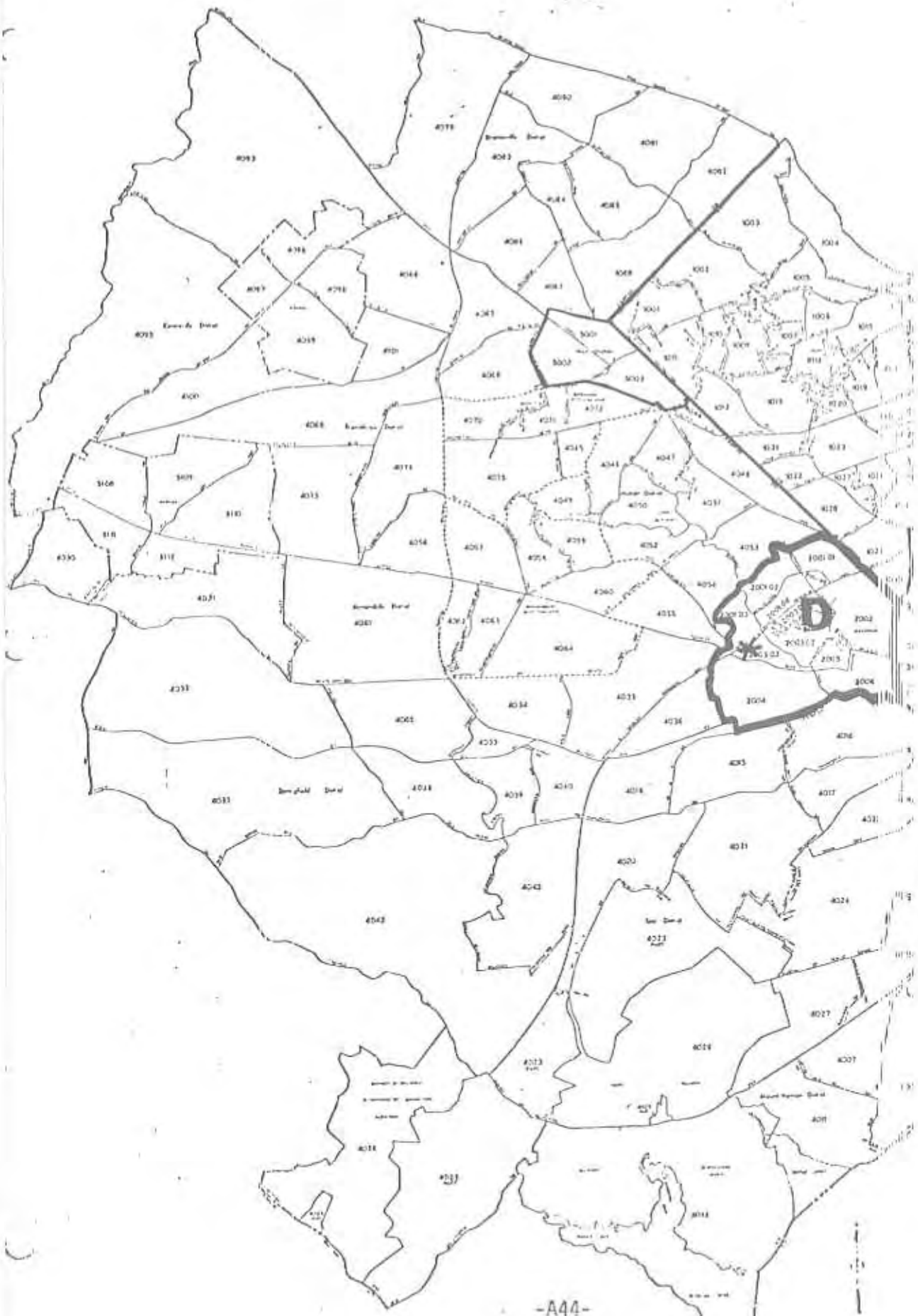
Peak
- Service type: Line Haul, express & local
- Coverage : Most primary and secondary roads
- Frequency : 50 plus per hour

Off Peak
- Service type : line haul & local
- Coverage : Most primary and secondary roads
- Frequency : 15 per hour

Roadway Network Type: Major Interstate, disrupts traffic through the area.

Data Source:
- 1970 U.S.Census PHC(1)-226
- WMCOG Growth Policy Report, 1977
- Alexandria City Planning Office Population Report Oct. 1975.

MAP 7



Area E - Falls Church Seven Corners

This area is contiguous to the Tyson's Corner employment and shopping complex, which is described in Area A, identified on Map 2.

This area has an employment level of 15,700 jobs, as of 1975. This section of Northern Virginia has a high captive rider market, over 16% of the population are teenagers or elderly, with 59% of the families having one or no available automobile.

There is good Metrobus service along Routes 50 and 7, and a bus terminal at the Seven Corners Shopping Center. There is, however, very little neighborhood bus service especially during the off-peak hours. In addition there has been citizen opporition to neighborhood Metrobus service. This is where circuitous Metrobus routes are inappropriate, but it is one ideally suited to paratransit service.

MAP 8

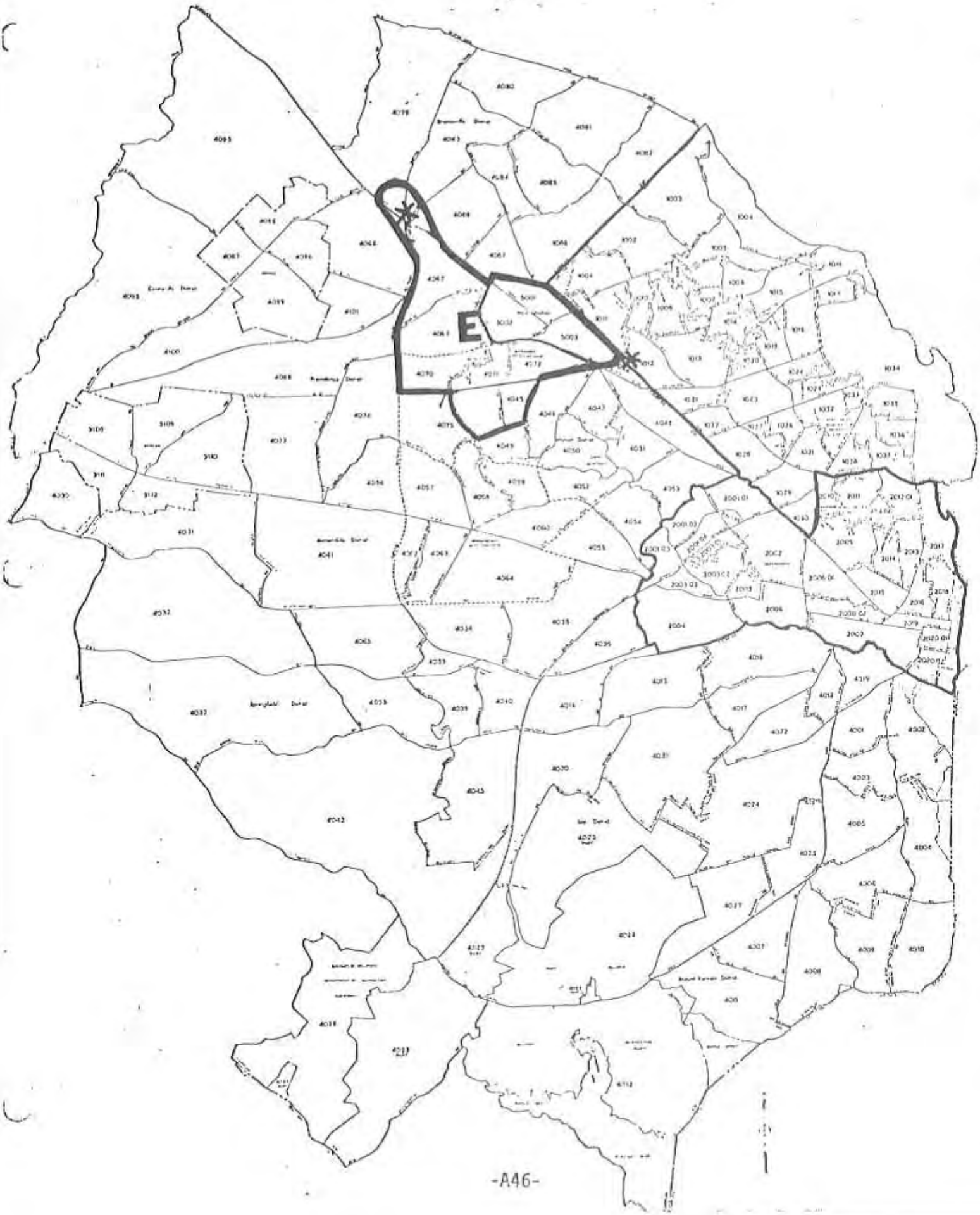


FIGURE 5

Area E — Falls Church and Seven Corners

	1970	1976
Size (Sq.mile)	9.7 sq. mi.	7.6 sq. mi.
Population	44,330	42,999
Density (6,226)	7.1	6.9

Activities:

Employment: (1975) 15,700+

Age Profile:

- % Elderly 6.0
- % Teenage 10.0
- % Remaining 8.4

Total Workers: 18,636 (Work in Falls Church & vicinity)

- % workers in Fairfax 30.1
- % married women not working 52

Median Family Income

- 0 - $4,000 3.0%
- $4,- $10,000 22.6%
- $10 - $15,000 37.0%
- $15 + 38.5%
- % families below proverty 2.1
- Total Families 11,765

Auto Ownership Per Occupied Unit:

- No car 4
- 1 car 45.0
- 2 cars 48.0

Mode of Travel to Work

- % auto drivers 70%
- % auto passengers 14%
- % Bus passengers 9%
- % Other 7%

Existing Fixed Route Service Routes 1, 2, 3.

Peak: Service type - Line Haul & local + express; Coverage - Primary roads and some secondary; Frequency - 22 per hour

Off Peak: Service type - Line Haul and local; Coverage - Primary roads and some secondary.; Frequency - 18 per hour

Roadway Network Type - Good primary and secondary - some discontinuous secondary roads.

Data Source:
- 1970 U.S.Census PHC(1)-226
- WMCOG, Growth Policy Report '77
- Falls Church Planning Dept. '77

Area F - Fairfax City

Fairfax City has a population of 21,555 as of 1976, which gives it a density of 5.6 persons per acre. (See Map 9.)

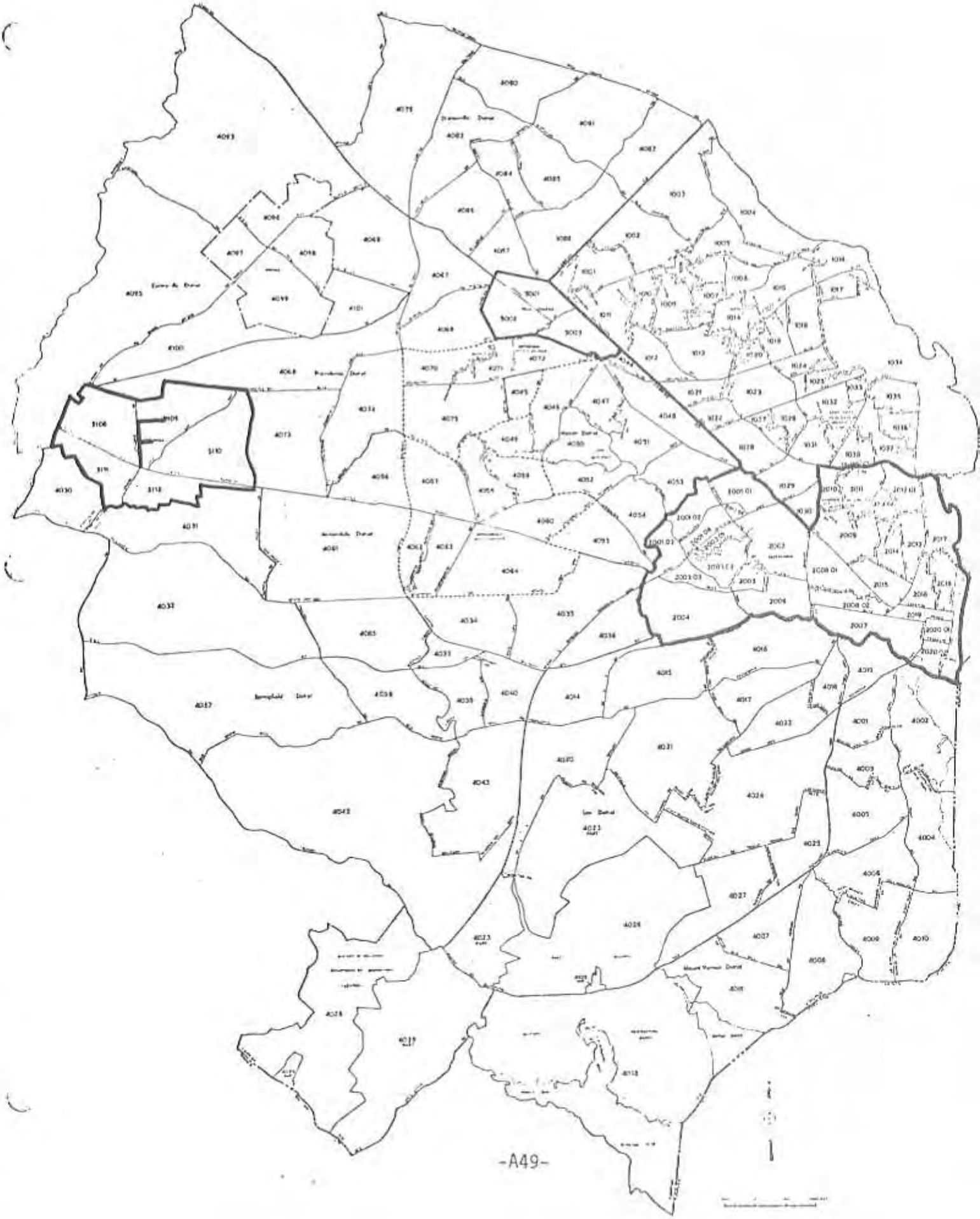
The City has an employment level of 9,667 of which 2,200 are Fairfax City residents. In addition, 38% of the families have access to only one auto and 2.2% to no auto. Teenages 10-14 and the elderly make up another 17% of the captive market for transit.

The Metrobus service that exists during the off-peak hours is along routes 236 to George Mason University and along Route 50 into the center of town, at the combined rate of 2 per hour.

Metrobus service is supplemented with peak service supplied by Grey Lines, under contract with the City.

The Fairfax City Express, as the service is called, operates seven buses into D.C. via the Pentagon. They operate from 6:30 and 8:00 A.M., and between 4:20 and 5:30 P.M. from D.C.

MAP 9



Area F — Fairfax City

Figure 6

	1970	1976
Size (Sq.mile)	6	6
Population	21,970*	21,555*
Density (3,840 acres)	5.72	5.60

Activities: County Seat, Shopping Center, Town Shopping Center, small offices.

Employment: 9,667

Age Profile:

- % Elderly 5.1%
- % Teenage 12.4%
- % Remaining 65%

Total Workers: 8,811

- % workers in Fairfax City: 27%
- % married women not working 42.8%

Median Family Income

- 0 - $4,000 4.2%
- $4,- $10,000 22.0%
- $10 - $15,000 26.2%
- $15 + 57.4
- % families below proverty - 3.1%
- Total Families 5,432

Auto Ownership Per Occupied Unit:

- No car 2.2%
- 1 car 38.0%
- 2 cars 43.4%
- 3+ cars 16.4

Mode of Travel to Work

- % auto drivers 76.2%
- % auto passengers 12.1%
- % Bus passengers 4.2%
- % Other 7.5%

Existing Fixed Route Service Rts. 20, 25, 29

Peak
- Service type - Line Haul and local and express
- Coverage - Primary roads
- Frequency - 7 per hour to Washington

Off Peak
- Service type - Line haul and local
- Coverage - ---
- Frequency - 3 per hour to Washington; 3 per hour from D.C.

Roadway Network Type: Good primary and secondary, some discontinuous secondary.

* Fairfax City figures show 20,000 population for 1970; 21,555 for 1976.

Data Source:
- MWCOG Growth Policy Report 1977
- 1970 U.S. Census PHC(1) - 226

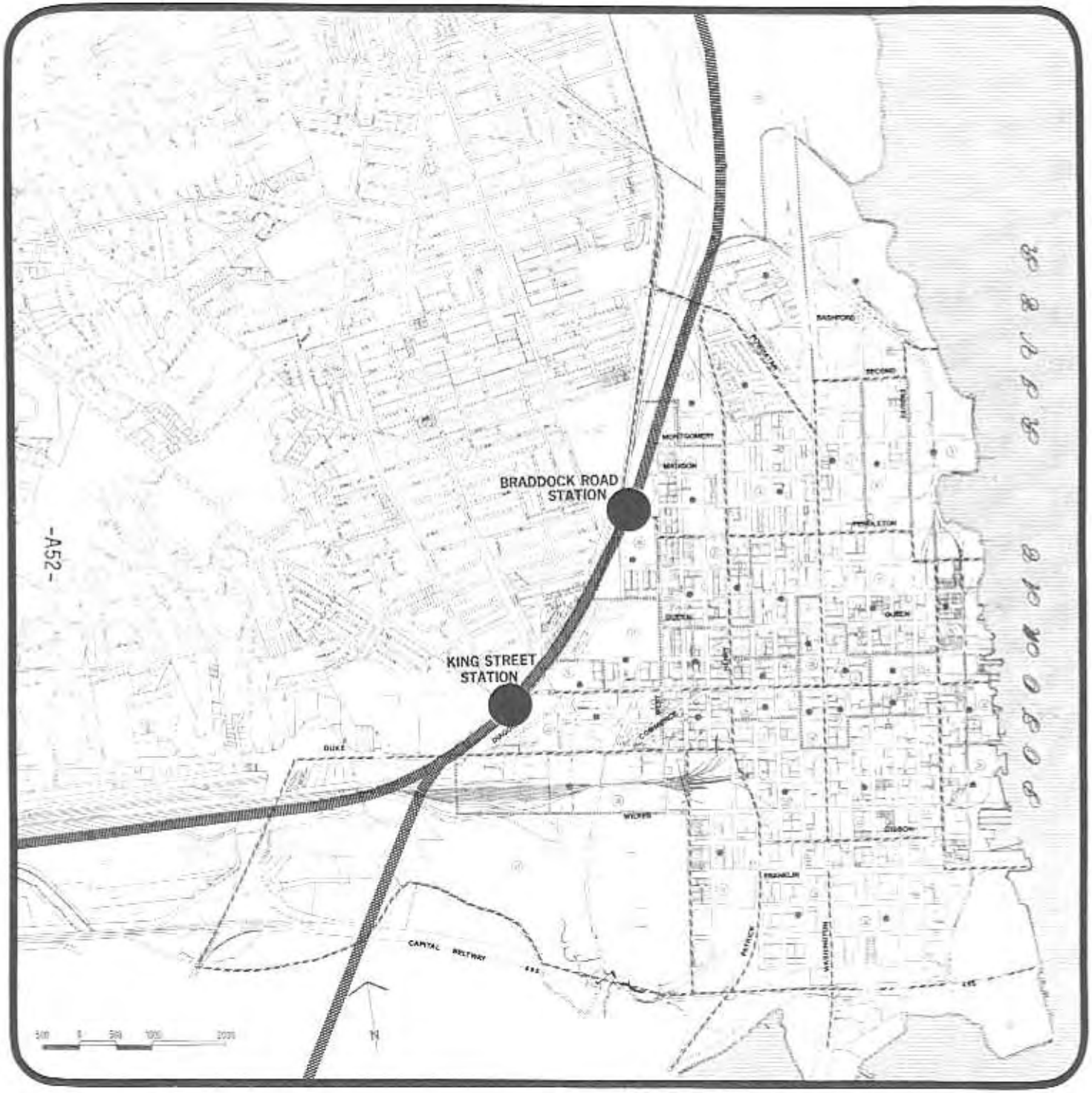
Area R Downtown Alexandria

The Northern Virginia Transportation Commission, in cooperation with the City of Alexandria, and UMTA, conducted a study of the transportation needs of the eastern portion of the City of Alexandria, Old Town. The area studied is defined in Map 10. This study is mentioned here because it makes available an indepth analysis of Alexandria's business district with various paratransit options offered and defined, negating the need for further evaluation of the area in this study.

Generally this study recommended a base day minibus system to serve Old Town, Alexandria. This internal bus system would serve as a neighborhood system and interface with current Metrobus routes as well as a feeder service to the future Metrorail stations at Braddock Road and King Streets.

The major points of the study are summarized below:

1. The current Metrobus system is predominantly oriented towards the District of Columbia and commuter trips.
2. A significant number of individuals could be diverted from their current mode of travel for internal Alexandria trips with a minibus system.
3. Costs for the Minibus system would be in the $1.75 to $1.32 per revenue mile range.
4. The study also concluded that the partial replacement of Metrobus service by a minibus operation would be the most cost effective option.
5. In regard to the organization of the proposed system, the study recommended that the City operate the system.



ALEXANDRIA MINI-TRANSIT

a downtown transit distributor system

MAP 10

Figure 4

Study Area Zones

- ZONE NUMBERS
- ZONE CENTROIDS
- COG ZONES (STUDY AREA DISTRICTS)
- STUDY AREA ZONES

Prepared for the
Northern Virginia Transportation Commission

Barton-Aschman Associates Inc. Washington,D.C.

COMMONWEALTH OF VIRGINIA
OFFICE OF
THE ATTORNEY GENERAL
RICHMOND 23219

March 15, 1978

The Honorable Stanley C. Walker
Member, Senate of Virginia
1238 Kempsville Road
Norfolk, Virginia 23502

My dear Senator Walker:

You have asked whether Tidewater Transportation District Commission should consider an application for a certificate of public convenience and necessity by a certain special party carrier within its district. The carrier also has an application for a Type B certificate pending before the State Corporation Commission.

Powers of the SCC

The State Corporation Commission (SCC) is created by Article IX of the Constitution of Virginia (1971). Although § 2 of Article IX, which sets forth the powers and duties of the SCC, does not specifically charge that agency with the duty of regulating and controlling transportation companies, the final sentence of that section provides that "the Commission shall have such other powers and duties not inconsistent with this Constitution as may be prescribed by law."

Chapter 12.4, Title 56, Code of Virginia (1950), as amended, grants the SCC power over special or charter party carriers. Section 56-338.52 of the Code states that "except as otherwise provided in § 56-338.51, no person shall engage in the business of a special or charter party carrier of passengers by motor vehicle on any highway within the State unless such person has secured from the Commission a certificate authorizing such business." Section 56-338.51 exempts motor vehicles owned and operated by political subdivisions of the State; however, it does not exempt transportation by privately-owned special or charter party carriers regulated by a transportation district commission.

Section 56-338.53 sets forth the types of certificates of public convenience and necessity issued by the SCC for special or charter party carriers. Subparagraph (b) of that section provides that "if the Commission shall find the proposed operation justified it shall issue a 'B' certificate to the applicant, subject to such terms, limitations and restrictions as the Commission may deem proper. If the Commission shall find that the proposed operation is not justified, the application shall be denied."

In addition, § 56-275 of the general provisions regarding motor carriers in Chapter 12 of Title 56 provides that:

> "[N]o motor carrier, not herein exempted, shall operate any motor vehicle for the transportation of passengers or property for compensation on any highway in this State except in accordance with the provisions of this chapter, and every such motor carrier is hereby declared to be subject to control, supervision and regulation by the Commission."

Section 56-276 gives the SCC general regulatory authority and powers of enforcement of its regulations over all motor carriers.

Powers of Transportation Districts

The Transportation District Act gives transportation district commissions certain regulatory powers. Section 15.1-1357.1 states that:

> "The Commission [transportation district commission] also shall have the power to exercise exclusive control, notwithstanding any provision of law to the contrary, of matters of regulation of fares, schedules, franchising agreements and routing of transit facilities within the boundaries of its transportation district; provided, however, that the provisions of § 5.1-8 of the Code of Virginia shall be applicable to airport commissions."

Conflict of Powers

On the one hand, the General Assembly has directed the SCC to issue certificates of public convenience and necessity to motor vehicle carriers and has not set forth an exemption for those carriers providing service within the boundaries of a transportation district. On the other hand, § 15.1-1357.1 provides that a transportation district commission shall have the power to exercise exclusive control over "transit facilities within the boundaries of its transportation district." (Emphasis added.) The Transportation District Act, § 15.1-1344(i), defines

the term "transit facilities" broadly enough to include common carriers by motor vehicle because it includes "all those matters and things utilized in rendering transportation service by means of . . . bus. . .," so long as the major part of the transportation service does not extend beyond the transportation district.

Section 15.1-1357.1 was enacted subsequent to the SCC statutes with which it conflicts and the general rule is that the earlier statute must yield to the later legislative enactment. It is only in the event of an irreconcilable conflict, however, that the latest statute must prevail. See Report of the Attorney General (1973-1974) at 221. Where two statutes present an apparent conflict, the proper approach is to ascertain the purposes underlying both enactments, not to dispose of the problem by mechanical rule. Fanning v. United Fruit Co., 355 F.2d 147 (4th Cir. 1966), reversing Rodriguez v. United Fruit Co., 236 F.Supp. 680 (E.D. Va. 1964). Moreover, repeal by implication is not favored and it is an established principle of law that where two statutes are in apparent conflict, it is the duty of the court, if it be reasonably possible, to give to them such a construction as will give force and effect to each. Richmond v. Board of Sup'rs. of Henrico Co., 199 Va. 679, 101 S.E.2d 641 (1958). A clear and irreconcilable inconsistency such that the two acts cannot, by a fair and reasonable construction, be reconciled is required before a later act can repeal an earlier act by implication. South Norfolk v. Norfolk, 190 Va. 591, 58 S.E.2d 32 (1950).

Reconciling the Conflict

The primary purpose of the Transportation District Act was to provide necessary transportation planning facilities and services which could not be achieved by the unilateral action of counties and cities. See § 15.1-1343. In all sections of the Act which discuss transit facilities, other than § 15.1-1357.1, the Act limits its discussions to those facilities owned, operated, or leased by a transportation district. The SCC, on the other hand, is specifically given very broad regulatory authority over common carriers throughout the state, including special or charter party carriers by motor vehicle. Thus, while the purposes of the Transportation District Act would not be furthered by regulation of private transit facilities within the transportation district which are not owned, operated or leased by its commission, such regulation is essential to realization of the purposes of the SCC.

The SCC statutes are reconciled with § 15.1-1357.1 if one interprets the term "transit facilities," as used in the latter statute, to refer to those facilities owned, operated, or leased by the transportation district. Only by adopting this interpretation can effect be given to all applicable statutes.

Officials' Construction of Statute

The practical construction given to a statute by public officials administering a law is entitled to great weight and in doubtful cases will be regarded as decisive. Southern Spring Bed Co. v. SCC, 205 Va. 272, 136 S.E.2d (1964). I am informed that the SCC staff has continued to issue certificates of public convenience and necessity to special and charter party carriers within the boundaries of transportation districts since the enactment of § 15.1-1357.1. I am further informed that transportation district commissions have never attempted to issue these certificates; they have regulated only the transit facilities which the district itself owns, operates, leases or otherwise exclusively controls. In fact, in 1975 the Supreme Court heard an appeal of right by competing carriers from an order of the State Corporation Commission awarding a bus company a "B" certificate of public convenience and necessity to operate as a special or charter party bus carrier within the Tidewater Transportation District, under chapter 12.4 of Title 56 of the Code. The Supreme Court affirmed the SCC's order as to part of the service and reversed the order as to the other part of the service, remanding that part of the order for further proceedings before the SCC. See Atlantic Greyhound v. Jones Bus Co., 216 Va. 255, 217 S.E.2d 857 (1975). It is true that the issue presented in this opinion was not before the Court at that time; however, in that case neither the SCC, the Tidewater Transportation District Commission, the carriers involved, or the Supreme Court questioned whether the SCC was the proper entity to issue such certificates.

Conclusion

Construing the statutorily granted powers of the SCC and transportation district commissions with reference to each other, I am of the opinion that it is the SCC, and not the transportation district commission, which has the power to issue a certificate of public convenience and necessity to a privately-owned motor vehicle carrier for special or charter party service even if the majority of its transportation service is within the boundaries of the transportation district. This power, however, is subject to the transportation district commission's authority to regulate transit facilities it owns, operates, leases or otherwise exclusively controls.

With kindest regards, I remain

Sincerely yours,

Marshall Coleman
Attorney General

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