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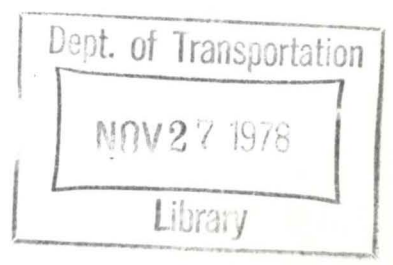
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Virginia. T. deputer Transportation
District Commission.

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FINAL REPORT
ON
TRANSIT SYSTEM PERFORMANCE AND EVALUATION
AND
TRANSIT MARKET RESEARCH :

PERFORMED AS PART OF THE
UNIFIED TRANSPORTATION PLANNING WORK PROGRAM
FOR FY1977 .

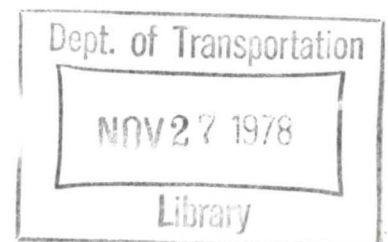


June, 1977

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This work was financed with funding assistance from the Urban Mass Transportation Administration and the Federal Highway Administration of the U. S. Department of Transportation, the Virginia Department of Highways and Transportation and the Southeastern Virginia Planning District Commission.

The contents reflect the views of the Tidewater Transportation District Commission which is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the United States Department of Transportation, Virginia Department of Highways and Transportation or Southeastern Virginia Planning District Commission. This report does not constitute a standard, specification or regulation.



TASK 8.2.3 TRANSIT SYSTEM
PERFORMANCE AND EVALUATION

DESCRIPTION OF WORK COMPLETED

Task 8.2.3 Transit System Performance and Evaluation

1. Schedule Adherence and Load Checks

These checks are conducted monthly for all bus routes in the system. Checkpoints were selected to form a cordon line around the Norfolk and Portsmouth CBD's. For crosstown routes other locations were selected, and in Suffolk, the checkpoint was in downtown. The checkpoint locations for all routes are attached.

Observers are stationed at the checkpoints from 6:00 A.M. until 6:00 P.M. They record the bus number, route name, time and load for each bus arrival. A survey form which illustrates this information is attached.

Analysis begins by comparing actual arrival times with scheduled arrival times. A bus is on-time if it is two minutes early to three minutes late. The number and percent of buses which are early, late or on-time are calculated for each route and the system average. A sample of this analysis for May, 1977 is attached.

This information is monitored by the planning and operations staff to identify problems and propose corrective actions. The problem generally falls into one of three categories: schedule, operator or physical. Schedules are adjusted on a continuing and as needed basis several times per year. These adjustments account for seasonal variations in demand, major construction projects, re-routing, new service areas and other major service changes, all of which affect schedule adherence. For example, the newly consolidated Route 20 Virginia Beach Boulevard schedule will be revised in the fall based on current performance.

Operator problems must be determined by street supervisors

when the staff detects unusual schedule adherence thru a trip-by-trip analysis of a route. This is an uncommon problem, difficult to detect, but easily corrected.

Physical problems include road construction, accidents, bridges, tunnels, railroad crossings, and other severely congested points. Buses get caught in the same intermodal conflicts as other highway traffic. Railroad crossings are a significant source of delay in Suffolk where all routes unavoidably cross active tracks many times. Railroad crossings causing delay to buses include: High Street at Virginia Avenue, Effingham at I-264, Colonial Avenue at 22nd Street, Chesapeake Boulevard at Cromwell, Granby Street and Little Creek Road at Wards Corner, Princess Anne Road at Bolton and Cromwell, Berkley Avenue Extended and Bainbridge Boulevard at Halifax and Campostella. Bridges and tunnels include the Downtown Tunnel, Berkley Bridge, Campostella Bridge and the Intracoastal Waterway at Great Bridge.

Schedule adherence for the system by month, is given on the attached table. The Commission is constantly attempting to improve adherence, however, an analysis of monthly data is misleading because of many factors, such as seasonal ridership, periodic schedule changes, road detours, etc. However, an average annual figure may indicate a trend. Previous schedule adherence data were taken in the 1972 Mass Transit Study and for the TDP in 1975. The trend in schedule adherence is as follows: 1972, 58%; 1975, 57%; and 1977, 67%.

Regarding passenger loads, there is insufficient data at this time to indicate a trend. The average load indicated on the attached table is the average passenger load for all trips observed at the checkpoint location. This information is used only as a check

against the more accurate boarding and alighting counts.

2. Boarding and Alighting Counts

These counts are conducted periodically for all bus routes in the system. Inter-city routes are surveyed every quarter and all others at least once a year. A schedule of the checks done in FY-77 is attached.

A checker rides each trip of every route observing the number of passengers boarding and alighting at every bus stop. A check sheet which illustrates how the data are collected is attached.

Analysis begins by striping the check sheets trip by trip and collating them to form a route profile called a "brown sheet." A brown sheet which illustrates the route profile is attached.

The route profile gives a time sequenced picture of boarding and alighting riders throughout the day, and may be analyzed in a variety of ways for different purposes. The total boarding passengers at any stop can be summed to determine where bus stop shelters or signs should be located. Total riders per trip, including the peak load and peak load point, can be determined to identify overcrowding or under-utilized service. By summing the number of riders boarding in each city on a route, revenues can be equitably allocated.

Although the route profile is a cumbersome document, it serves as a ready reference for a detailed analysis of routes and schedules. A summary of ridership by city and route along with other appropriate data is attached.

3. Transfer Analysis

A transfer is required by passengers using more than one bus route to complete their trip. Transferring is a disincentive to riding

the bus since direct routing is more convenient.

Transfers are identified by route of origin by an appropriate punch on the transfer slip. Two sample transfers are attached. A passenger transferring to another route surrenders the slip to the driver upon boarding. The driver places the slip in an envelope marked with his route. All transfers can then be tabulated by route of origin and destination. The tabulation is an average daily for three day's transfer checks. A transfer analysis tabulation is attached.

Transfer analysis is useful primarily for two reasons: to determine where thru routing may be appropriate, (that is where two separate routes may be joined to form one route); and to set transfer points for a variety of interconnecting routes. Transferring is an inconvenience and this analysis is a means of identifying where an acute problem exists.

Results of the attached transfer analysis indicate the following characteristics:

Percentage of Passengers Transferring

	<u>Weekday</u>	<u>Saturday</u>	<u>Sunday</u>
Average daily ridership	22,500	17,000	7,950
Average daily transfers	6,000	2,700	1,600
% passenger transferring	27%	16%	20%

Transfers Given Out

1. Naval Base	627
2. Granby	550
3. Colonial-So. Norfolk	435
4. Chesapeake	424
5. Campostella	386

Transfers Received

1. Granby	587
2. Liberty Pk-Campo- stella	548
3. Colonial-So. Norfolk	415
4. Chesapeake	403
5. Crosstown #23	402

Transferring Between Routes

1. Naval Base to Liberty Park - Campostella	108
2. Chesapeake to Granby	104
2A. Granby to Chesapeake	85
3. Granby to #23 Crosstown	77
4. Colonial - So. Norfolk to Liberty Park - Campostella	73
5. Granby to Liberty Park - Campostella	70

Due to the amount of transferring between the above routes, the possibility of interlocking these routes will be further studied if the service span of hours and headway frequencies are similar between the two routes to be interlocked. Certainly, from a passengers point of view, interlocking would make transit riding much more convenient.

4. Description of Analyses Performed and Illustration of Use of Data and Analyses in Improving Services

To illustrate how the data collection and analysis work tasks performed as part of this work program fit into the 3C planning process and to illustrate the use of analyses undertaken for these tasks, the following example, which goes through development of a major change in the Elizabeth River Tunnel service, is presented.

Conceptual development for thru bus service across the Elizabeth River goes back at least as far as the 1972 Southeastern Virginia Regional Mass Transit Study. In this study, regional consolidation of the public transportation system was recommended, including a system of integrated ring and circumferential bus transit routes. The Portsmouth Planning Department has also been active over the past several years proposing the development of these services.

In 1974 the report, Short Range Routing Review, performed by Wilbur Smith and Associates (WSA) for SVPDC, developed more detailed plans for thru routing of bus lines throughout the region. Several thru routes were recommended utilizing the Elizabeth River tunnels.

Another study, Operations Plan to Establish Through Tunnel Service Between Cities in Tidewater Area by WSA in 1976 for the TTDC, developed an operational plan for a thru route between Portsmouth and Norfolk.

Following this last study and in preparation to taking over tunnel bus service from the State on November 28, 1976, the TTDC needed additional supplemental data and analysis to develop a plan for integration of the tunnel bus service into the required transit system. The data analysis required for this specific project was included in the work tasks being performed by TTDC as part of the Unified Work Program. This included transfer analysis, boarding and alighting counts and a special origin-destination survey of tunnel bus riders. This analysis, together with previous analyses relating to travel across the Elizabeth River, resulted in the following conclusions:

1. The majority of traveling was from residential areas of Portsmouth to downtown Norfolk and Portsmouth.
2. Transferring was high from Portsmouth routes to the tunnel bus route.
3. More transit users would be given direct, no-transfer service by routing Portsmouth's Cavalier Manor Route thru the Tunnel.
4. Tunnel shuttle bus service would be needed to supple-

ment thru service on the Cavalier Manor Route during the peak periods, to carry the increased volumes.

The above analyses and planning information was transmitted to TRT's schedule makers, who prepared a preliminary detailed bus schedule and route instructions. These were offered to Portsmouth and other interested officials for review and approval. A review by the Navy indicated the desirability of service extended to the NNSY. This proposal was analyzed by a geographic survey which found the route was feasible. The tunnel bus schedule and route were appropriately modified. This extension was initiated prior to takeover of the service from the State on an experimental basis.

After the service change was initiated on an experimental basis, additional analysis of planning data was based on feedback from the Transit Operations Division. A boarding and alighting survey and analysis of this extended service indicated significant increased ridership to NNSY. The extension was then incorporated into the new service by the schedule makers. The route which went into effect November 28, 1976 included thru Cavalier Manor service, tunnel shuttle service, and tunnel-NNSY shuttle service.

After the new service had been in effect for several months, a new boarding and alighting survey was conducted. Analysis indicated very light ridership during the hours between 2:30 A.M. and 5:00 A.M. Therefore service was terminated during this time period and the schedule was re-made by the Operation Division to accommodate this.

The preceding example goes thru a process combining long-range, short-range, and operational planning and then implementation and feedback. It starts with conceptual development and ends with performance evaluation, which is continuing.

This example is illustrative of a major service change. There are many other proposed changes which go thru a shorter or even longer process. For instance, the tunnel proposal did not require a formal public hearing which usually causes at least one more iteration to the planning process.

5. Other Surveys and Studies

Numerous other surveys, studies, and system performance reviews are conducted throughout the year. They generally include special ridership survey's service adjustments and proposal, analysis of bus operations, financial analyses and special surveys or analyses regarding such items as bus stop signs and shelters. A summary of these studies follows.

Cavalier Manor/Elizabeth River Tunnel Service

A substantial service change was implemented in November, 1976 by integrating the Cavalier Manor route in Portsmouth and the Elizabeth River Tunnel Service.

A description of the service and route is given below. Headways on the consolidated route were maintained essentially the same by retaining tunnel shuttle bus service during the peak hours. The shuttle was extended to the Norfolk Naval Shipyard at night to give direct service to downtown Norfolk to servicemen. The consolidated route provides direct, no-transfer service from Cavalier Manor to downtown Norfolk.

Service

<u>Time Period</u>	<u>Headway (Minute)</u>	
	<u>Cavalier</u>	<u>Tunnel</u>
5:00 a.m. - 9:00 a.m.	18	9
9:00 a.m. - 3:00 p.m.	22	22
3:00 p.m. - 6:30 p.m.	18	9
6:30 p.m. - 8:30 p.m.	30	15
8:30 p.m. - 1:00 a.m.		15
1:00 p.m. - 5:00 a.m.		30

Route

Cavalier/Tunnel - Existing Cavalier route to Effingham and High, R. High, R. Crawford, to tunnel. Reverse Portsmouth routing. Existing loop in Norfolk.

Tunnel Shuttle - Exit tunnel to Portsmouth to Bart, R. Effingham, R. High, R. Crawford, to tunnel. Loop. Existing loop in Norfolk.

Tunnel/NNSY Shuttle - 6:30 p.m. - 2:00 a.m., 6 days a week and all day Sunday. Exit Tunnel to Portsmouth on Crawford connector, R. Court, R. Wythe, L. Fourth, R. Portsmouth, around Commissary, R. Effingham, R. High, R. Crawford to tunnel. Loop. Existing loop in Norfolk.

The extension of the shuttle bus to the NNSY was made on October 1, 1976. An analysis of ridership before and after the change reveals the following information.

Time period of ridership counts was 7:00 p.m. - 2:00 a.m.

These ridership counts were taken from 52 scheduled one-way trips.

	<u>Total Daily Passengers</u>	<u>7 p.m. - 2 a.m. Passengers</u>
January 14, 1976	2,697	341
November 2, 1976	2,709	556
Increase in Ridership	12	215
Percent Change	0.4%**	63%

From a study of the ridership count sheets, it can be determined that in November, 1976 there were 326 person trips associated with the NNSY loop extension (7 pm-2 am).

Because the extension of service resulted in only an overall increase of 215 person trips for the entire route, there must have been a certain number of people going to NNSY by alternate means before the service was extended.

CONCLUSION: Before the extension of service to NNSY, there were 111 trips (326 minus 215) which required a transfer of some kind. The extended NNSY loop has produced an additional 215 trips for a total of 326 person trips which are now associated with the NNSY loop.

**NOTE: Because the total daily passengers remained relatively constant, it is assumed that the increase in 7 pm to 2 am trips is due to the Extended Service.

In keeping with our policy of monitoring lines for passenger riding and schedule adherence, the following data were gathered in February, 1977 on Route #45, Cavalier Manor - ERT. This check was performed between the hours of 1:40 a.m. and 5:32 a.m. and the following information was obtained:

<u>To Portsmouth</u>		<u>To Norfolk</u>	
<u>Time</u>	<u>Passengers</u>	<u>Time</u>	<u>Passengers</u>
-	-	142A	3
200A	8	213A	3
230A	2	240A	1
300A	1	310A	-
330A	1	340A	1
400A	-	410A	2
430A	1	440A	-
500A	-	510A	-
Totals	13		10

Since ridership was very light between these hours, service was terminated between the hours of 2:30 a.m. and 5:00 a.m. every day. This resulted in a savings of 2½ hours per day with little effect on our passengers.

Virginia Beach Blvd

Staff representatives of the cities of Norfolk and Virginia Beach met to discuss the consolidation into one route of the former Norfolk Route 20 (Virginia Beach Boulevard) and Virginia Beach Route 34 (Virginia Beach Boulevard). It was agreed that these two routes should be combined into a single route, and that the new route would improve efficiency by eliminating duplication of service.

It was agreed to call the new route: Route 20 Virginia Beach Boulevard. It operates both local and express services. Express services from Fort Story in Virginia Beach to downtown

Norfolk remained virtually unchanged from the former service operated by Virginia Beach. The local service essentially is delivered by combining the former Route 20 with Route 34. The route enters several major activity centers: Military Circle Mall; Leigh Memorial Hospital - Medical offices; Koger Center, Pembroke Mall; and the Hilltop area.

Frequency of service is at approximately the same level as formerly existed except that there is some compromise on midday service (11:00 a.m. - 2:00 p.m.). Hours of operation and headways for weekdays, Saturdays, and Sundays are shown below.

<u>DAY</u>	<u>AM</u>	<u>BASE</u>	<u>PM</u>	<u>HOURS</u>
Weekday	30	60	30	5:00 a.m. - 12:00 p.m.
Saturday	45	45	45	5:30 a.m. - 10:15 p.m.
Sunday	50	50	50	6:30 a.m. - 9:00 p.m.

A consistent zone fare system was initiated in Virginia Beach. Virginia Beach formerly charged zone fare for trips outside the city limits, but a flat 35¢ fare within the city. Charging the appropriate zone fare for all trips on the entire route is more equitable, and consistent with fares charged throughout the District.

Downtown Tunnel Delay Study

On December 13, 1976, the Commission conducted a study of the delay to buses caused by congestion at the Portsmouth entrance to the downtown tunnel. This study was prompted by our own request to the state for priority treatment for buses at this location.

At the Portsmouth tunnel entrance from Court Street, there is a bus turn-out lane and an emergency lane which extends the

turn-out directly to the tunnel portal. Using the turn-out and emergency lane, buses could avoid congestion caused by the confluence of vehicles from I-264, Effingham Street and Court Street.

Observers were stationed at the turn-out entrance and the tunnel portal. All buses were timed between these two locations from 3:00 p.m. to 6:00 p.m. A total of 32 usable observations were obtained. Of this total there were 19 TRT buses, 6 independent haulers, one Navy bus and 6 commercial buses.

The results of this study are given in the attached charts. One is a frequency diagram and the other a commulative frequency diagram.

The average delay for all buses was over three and a half minutes for this short distance. The median delay was almost two minutes. Buses could travel this distance in only a few seconds using the emergency lane, thus saving several minutes in trip time. If each bus carries about 40 people, an average of 2.3 hours in person delay could be saved each trip.

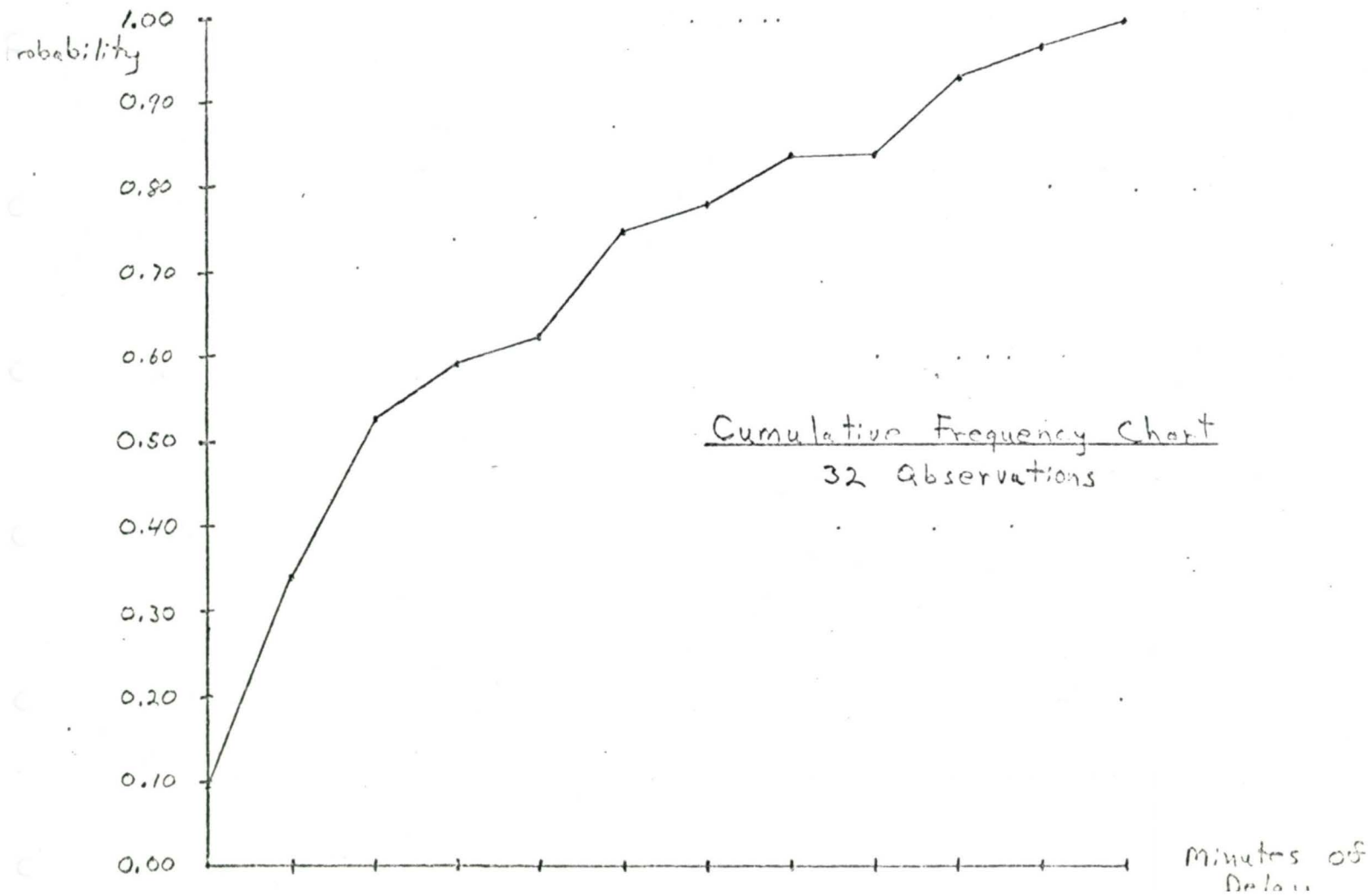
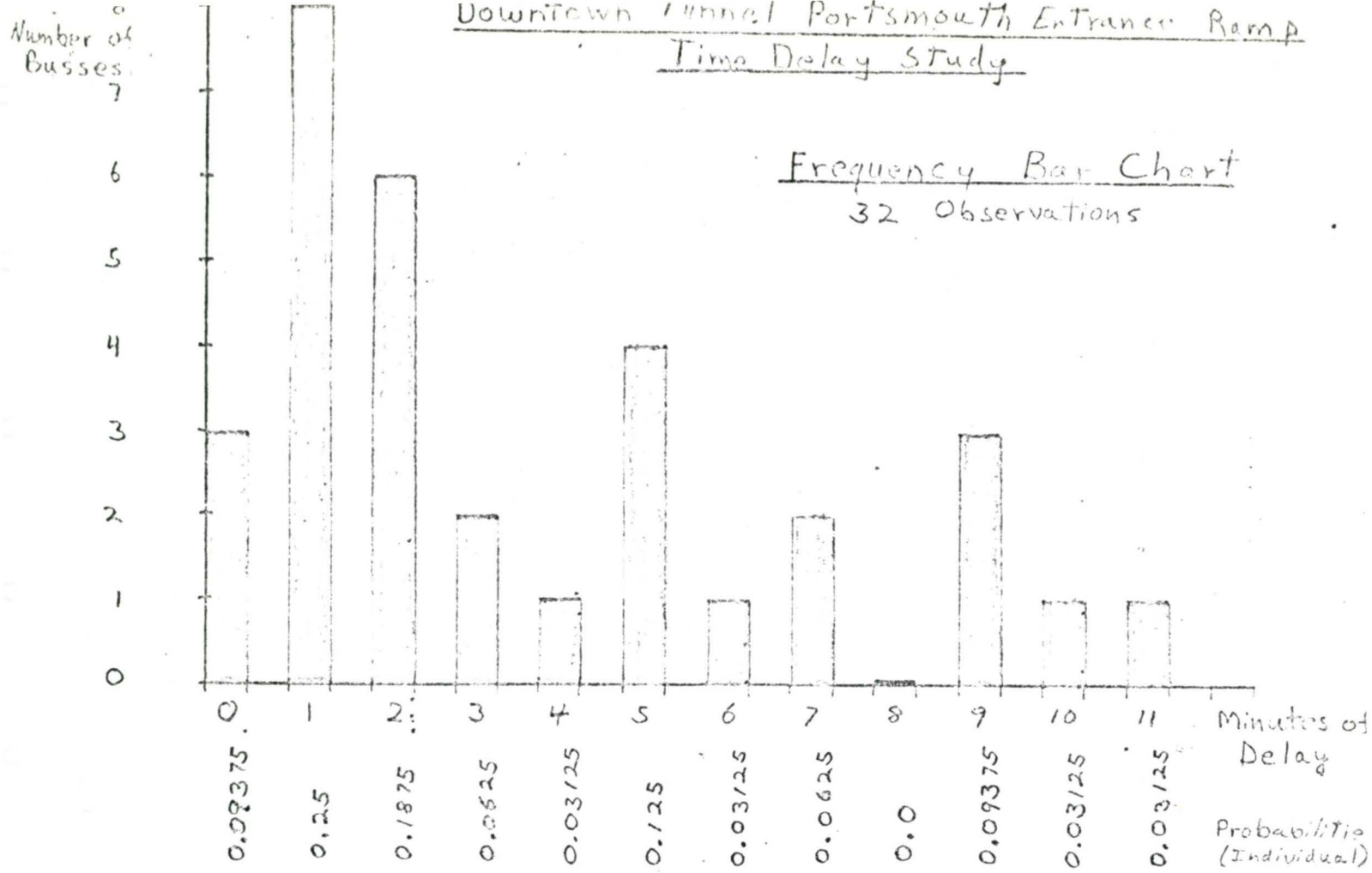
TRT shuttle buses make two or three trips each thru the tunnel during this time period. Therefore, delay is compounded. If a bus is delayed 2 minutes the first time thru and 4 minutes the second time, it will be 6 minutes late thereafter.

Current performance standards for schedule adherence make a bus on time if it is not more than 3 minutes late. It is desirable for 80% of all buses to be on time. From the cumulative frequency chart, we can find that only 59% of the buses could be on time given only this one source of delay and 80% are delayed up to 6 minutes.

This report concludes that substantial vehicle and person delay can be saved if buses (and vanpools) are allowed to bypass

Downtown Tunnel Portsmouth Entrance Ramp
Time Delay Study

Frequency Bar Chart
32 Observations



tunnel congestion by using the emergency lane. Implementation would require only that signs be placed at the bus turn-out entrance and where the emergency lane merges with the tunnel. The former could say: Buses and Vanpools Only, and the latter: Yield to Buses and Vans.

Statistical Summaries

The Commission is in the process of developing a comprehensive management information system and is currently in a transition period. A summary of several important statistical indicators is attached and includes a monthly TRT System Report, cost, revenue, deficit and passengers per average weekday per month.

SCHEDULE ADHERENCE
ATTACHMENTS

TIDEWATER TRANSPORTATION DISTRICT COMMISSION
MAY 1977
SCHEDULE ADHERENCE

ROUTE	TOTAL OBSERVED		EARLY		LATE		ON TIME		AVERAGE LOAD
	#	%	#	%	#	%	#	%	
#1 Granby	92		5	4	11	12	76	84	14
#2 Naval Base	77		4	5	23	30	50	65	12
#3 Chesapeake - Gate #4	66		8	12	10	15	48	73	14
#4 Church	84		6	7	15	18	63	75	14
#5 Huntersville	72		11	15	5	7	56	78	14
#6 Colonial	75		3	4	10	13	62	83	14
#6 South Norfolk	39		9	23	7	18	23	59	14
#8 Little Creek	38		7	18	4	10	27	71	14
#9 Ghent	21		-	-	2	9	19	91	9
#9 Chesterfield	15		-	-	7	47	8	53	13
#10 Larchmont- Colley	61		2	3	19	31	40	66	14
#11 Liberty Park	*61		9	15	7	10	45	74	14
#11 Campostella	*67		12	18	8	12	47	70	14
#12 Southside - Indian River Road	19		2	10	5	26	12	63	9
#15 Crosstown - Military Circle - Bayview	57		15	26	6	10	36	64	5
#16 Coronado	33		7	21	7	21	19	58	14
#17 Lakeland	41		6	15	5	12	30	73	14
#18 Lansdale	38		6	16	8	21	24	63	14
#20 Va. Beach Blvd.- Davis Corner	37		10	27	4	10	23	62	13
#22 Great Bridge	11		-	-	-	-	11	100	10
#23 Crosstown - Medical Towers - Bowling Park	43		15	35	5	12	23	53	18
#24 Tidewater Flyer	2		-	-	1	50	1	50	10
#32 Shore Dr. - N. Great Neck Rd.	4		-	-	-	-	4	100	11
#34 Va. Beach Blvd. - Local (Va. Beach - Norfolk)	42		3	7	6	14	33	79	
#34 Va. Beach - Rosemont Express - (Va. Beach - Norfolk)	15		-	-	2	13	13	87	20
#35 Va. Beach - Laskin Rd. Express	4		-	-	-	-	4	100	10
#40 Vepco Parking Lot Shuttle	27		2	7	9	33	16	60	9
#41 Craddock	22		-	-	9	41	13	59	5
#42 Shea Terrace	10		1	12	2	25	7	63	-
#43 Deep Creek	18		-	-	5	28	13	72	3
#43 Westhaven - Waterview	16		2	12	4	25	10	63	6
#44 Rollingwood - Simonsdale	27		6	22	3	11	18	67	14
#45 Cavalier Manor	76		-	-	26	34	50	66	14
#45 Tunnel Shuttle	55		4	7	12	22	39	71	14
#46 River Park - Port Norfolk	28		3	11	2	7	23	80	10
#47 College Drive - Merrifields	18		6	33	4	22	8	44	9
#48 Pughsville - Huntersville	18		-	-	11	61	7	39	11
#49 Foundation Park - S. Norfolk	26		3	11	4	15	19	73	14
#50 Academy Park	24		-	-	9	37	15	63	6
#71 Norfolk Road	#48		7	14	18	37	23	48	5
#71 Saratoga	#34		5	15	10	29	19	56	5
#72 Lakeside - Riverview	#19		1	5	15	79	3	16	5
#72 Obici	#18		6	33	9	50	3	17	7
#72 Kingsboro	#14		3	21	2	14	9	43	8
#73 South Suffolk	#44		7	16	21	48	16	36	4
TOTAL OBSERVATIONS	1,656		196	12%	352	21%	1,108	67%	

Observations recorded from 6:00 a.m. to 6:00 p.m.

On Time = 2 minutes early to 3 minutes late.

*COMBINATION OF LINES

*SCHEDULE IS OFF DUE TO CONSTRUCTION IN THE AREA

SCHEDULE ADHERENCE (con't)

CHECKPOINT LOCATIONS

20th Street - Monticello Avenue

Boush Street - Olney Road

Princess Anne Rd. - Tidewater Drive

Virginia Beach - Indleside

Brambleton Avenue - Tidewater Drive

Granby Street - Little Creek Road

St. Paul's Blvd. - City Hall Avenue

Virginia Beach Constitution

Parking Lot (Va. Beach & Monticello)

George Washington & Frederick Blvd.

High Street & Constitution Ave.

Portsmouth Blvd. & Deep Creek Blvd.

Suffolk - Main & Washington

ROUTES

- #1 Granby
- #3 Chesapeake
- #4 Church
- #8 Little Creek
- #18 Lansdale
- #2 Naval Base
- #6 Colonial
- #10 Colley Ave. - Larchmont - Edgewater
- #5 Huntersville
- #16 Coronado
- #17 Lakeland
- #23 Crosstown - Medical Towers
- #20 Va. Beach Blvd. (Davis Corner)
- #9 Chesterfield
- #11 Liberty Park - Campostella
- #24 Tidewater Flyer
- #32 Shore Drive - N. Great Neck Road
- #49 South Norfolk - Foundation Park
- #15 Crosstown - Military Circle - Bayview
- #6 South Norfolk (OB)
- #9 Ghent
- #9 Chesterfield
- #12 Southside - Indian River Road (OB)
- #22 Great Bridge (OB)
- #45 Tunnel Shuttle (OB)
- #34 Va. Beach Blvd. - Local (Va. Beach - Norfolk)
- #34 Va. Beach Blvd. Express
- #35 Laskin Rd. - NOB/NAS Express
- #40 Vepco Parking Lot Shuttle
- #41 Craddock
- #42 Shea Terrace
- #43 Westhaven
- #44 Rollingwood - Simonsdale
- #46 River Park - Port Norfolk
- #47 College Dr. - Merrifields
- #48 Pughsville - Huntersville
- #43 Deep Creek
- #45 Cavalier Manor
- #50 Academy Park
- #71 Norfolk Road
- #71 Saratoga
- #72 Lakeside - Riverview
- #72 Obici
- #72 Kingsboro
- #73 South Suffolk

TIDEWATER TRANSPORTATION DISTRICT COMMISSION
SYSTEM SCHEDULE ADHERENCE

<u>Month</u>	<u>Percent On-Time</u>
July, 1976	63
August, 1976	N/A
September, 1976	77
October, 1976	N/A
November, 1976	N/A
December, 1976	N/A
January, 1977	67
February, 1977	62
March, 1977	55
April, 1977	74
May, 1977	67
June, 1977	

TRANSFER ANALYSIS
ATTACHMENTS

EMERGENCY		
9 PM TO 2 AM		
8 PM		45
7 PM		30
6 PM		15
5 PM		0
4 PM		45
3 PM		30
2 PM		15
1 PM		0
12 NOON		45
11 AM		30
10 AM		15
9 AM		0
5 AM TO 9 AM		
This Is A Transfer-Zone Check Subject to TRT Regulations.		OUT
		
Zone From To		
P-3		CRADOCK
P-2		
P-1		GILMERTON
N-1		
N-2		
V-3		DEEP CREEK
V-4		
V-5		WESTHAVEN
Yun. Bus		
Sp. #1		SIMONSDALE

EMERGENCY	
9 PM TO 1 AM	
8	40
7	20
6	0
5	
4	40
3	20
2	0
1 PM	
12 Noon	40
11 AM	20
10	0
9	
5 AM TO 9 AM	
TUESDAY 28 JUNE 1977	
Good only before latest time shown or on first connecting bus thereafter, on date issued, at established transfer points, on any line except line of issue or line returning to same area. Transfer issued only at time of paying fare. If any dispute, please pay fare and refer matter to: TIDEWATER REGIONAL TRANSIT NORFOLK, VA.	
EDGE-WATER	EDGE-WATER-DUKE
LARCH-MONT-COLLEY	S - Green N - Gold

WEEKDAY TRANSFER ANALYSIS

FROM	TO																				
ROUTE NAME	#1	#2	#3	#4	#5	#6	#8	#9	#10	#11	#12	#15	#16	#17	#18	#20	#22	#23	#24	NOT USED	
#1. Granby	15	26	85	53	6	39	15	11	19	70	7	21	10	2	21	29	-	77	-	44	550
#2. Naval Base	51	7	48	35	14	55	22	20	5	108	8	35	16	4	29	43	21	60	-	46	627
#3. Chesapeake	104	31	18	36	2	25	7	8	19	40	6	8	1	2	25	17	6	33	-	36	424
#4. Church	34	10	17	2	1	25	10	8	12	30	4	3	2	2	7	7	2	42	-	25	243
#5. Huntersville	17	15	5	4	2	13	3	5	5	22	3	1	1	1	7	12	3	35	-	21	175
#6. Colonial - So. Norfolk	39	37	26	35	4	5	12	11	12	73	5	2	12	7	37	22	7	45	-	44	435
#8. Little Creek	21	13	14	16	4	10	-	8	10	21	4	7	1	-	4	7	2	23	-	20	185
#9. Ghent - Chesterfield	21	19	14	16	5	24	7	-	10	10	8	1	8	2	14	10	2	4	-	12	187
#10. Larchmont	18	3	8	12	6	18	4	6	2	31	7	2	4	1	12	16	3	13	-	11	177
#10. Edgewater	5	1	8	4	4	6	1	-	-	11	3	-	2	2	3	4	2	7	-	11	78
#11. Liberty Park	35	31	28	29	5	48	9	4	16	15	5	2	13	2	11	2	10	2	-	25	291
#11. Campostella	49	55	28	29	1	35	20	6	33	14	6	2	5	4	36	19	3	16	-	25	386
#12. Southside	8	13	5	9	2	2	3	2	6	7	-	-	-	-	7	4	-	2	-	5	75
#15. Crosstown-Bayview-Janaf	40	29	14	2	-	1	10	1	1	2	1	1	1	1	5	1	1	5	-	7	123
#16. Coronado	8	10	5	8	1	10	2	-	4	22	5	-	-	-	10	6	8	11	-	18	128
#17. Lakeland	13	12	5	4	1	16	-	5	8	10	4	1	2	-	10	5	2	3	-	8	109
#18. Lansdale	21	12	19	22	3	21	2	7	8	31	6	3	3	2	-	13	-	19	-	14	206
#20. Va. Beach Blvd.	19	14	20	14	4	19	5	4	13	19	5	2	-	1	5	2	4	4	-	-	154
#22. Great Bridge	6	6	4	9	3	4	2	1	4	6	1	1	2	1	4	3	1	1	-	8	67
#23. Crosstown	63	26	32	52	3	39	17	-	16	6	-	6	8	2	25	2	-	-	-	28	325
#24. Tidewater Flyer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS	587	370	403	390	71	415	151	107	203	548	88	98	91	36	272	224	77	402	-	408	4,945

June 25, 1977

SATURDAY TRANSFER ANALYSIS

FROM	TO																			
ROUTE NAME	#1	#2	#3	#4	#5	#6	#8	#9	#10	#11	#12	#15	#16	#17	#18	#20	#22	#23	NOT USED	TOTAL
#1. Granby	-	7	32	35	4	16	7	9	7	49	2	19	10	1	12	13	4	35	40	302
#2. Naval Base	16	-	8	11	9	11	7	6	5	67	10	14	5	2	15	21	5	20	29	261
#3. Chesapeake	53	12	11	11	1	8	5	6	6	23	2	9	1	-	12	7	1	15	28	210
#4. Church	7	5	13	2	-	14	4	5	3	24	2	-	4	-	2	-	2	26	21	134
#5. Huntersville	7	3	3	7	-	2	1	2	1	21	3	-	1	-	1	5	1	12	9	79
#6. Colonial - So. Norfolk	3	9	5	30	2	5	2	21	4	56	1	-	7	6	12	20	2	19	14	218
#8. Little Creek	3	7	7	17	-	5	-	6	5	12	1	1	1	1	2	5	1	6	3	83
#9. Ghent - Chesterfield	6	3	3	12	-	8	2	-	4	13	4	-	4	1	5	4	2	-	7	78
#10. Larchmont	1	-	7	-	1	-	1	2	-	14	3	-	3	2	-	8	-	4	3	49
#10. Edgewater	-	-	3	10	-	5	-	2	-	5	1	-	4	3	-	5	-	5	4	47
#11. Liberty Park	15	13	12	32	-	14	2	1	8	10	4	1	11	-	7	3	2	1	20	156
#11. Campostella	14	19	11	33	3	16	3	8	18	14	1	-	7	3	6	17	-	1	20	194
#12. Southside	6	-	3	-	2	3	-	-	4	5	-	-	-	2	2	8	-	1	5	41
#15. Crosstown-Bayview-Janaf	26	19	3	-	-	-	1	1	-	2	-	2	-	-	2	-	-	-	3	59
#16. Coronado	6	2	1	7	-	3	-	1	1	21	2	-	3	1	1	5	-	7	2	63
#17. Lakeland	1	3	1	2	1	2	-	1	3	7	-	-	1	1	1	3	2	3	5	37
#18. Lansdale	9	17	4	8	2	9	4	6	1	18	1	1	1	1	-	2	-	8	15	107
#20. Va. Beach Blvd.	10	14	10	21	1	15	9	8	8	31	5	-	8	-	2	1	5	-	19	167
#22. Great Bridge	3	4	1	7	-	1	2	2	2	3	-	-	1	-	-	2	-	2	3	33
#23. Crosstown	31	5	25	49	7	16	4	1	2	8	-	3	8	-	2	-	1	-	20	182
TOTALS	217	142	163	294	33	153	54	88	82	403	42	49	80	24	84	129	28	165	270	2,500

June 26, 1977

SUNDAY TRANSFER ANALYSIS

FROM TO																				
ROUTE NAME	#1	#2	#3	#4	#5	#6	#8	#9	#10	#11	#12	#15	#16	#17	#18	#20	#22	#23	NOT USED	TOTALS
#1. Granby	2	8	40	9	3	2	-	14	13	36	1	-	-				1	16	17	161
#2. Naval Base	19	2	14	2	2	8	2	15	8	41	1	-	-				3	8	5	130
#3. Chesapeake	29	4	-	21	1	9	4	5	7	32	-	-	-				1	17	11	141
#4. Church	6	1	2	-	1	5	-	3	5	8	-	-	-				-	3	3	37
#5. Huntersville	4	3	1	2	-	4	-	4	6	13	3	-	-				1	3	6	50
#6. Colonial - So. Norfolk	11	9	13	7	3	-	4	2	4	37	1	-	-				-	18	-	109
#8. Little Creek	3	6	11	1	-	3	-	2	3	9	-	-	-				-	4	1	43
#9. Ghent - Chesterfield	1	7	6	5	2	1	1	-	7	3	1	-	-				2	-	2	38
#10. Larchmont	4	-	1	4	-	-	-	2	4	6	-	-	-				-	1	-	22
#10. Edgewater	1	-	1	-	-	-	-	1	1	2	-	-	-				-	1	-	7
#11. Liberty Park	15	10	13	9	9	12	1	2	15	5	5	-	-				-	-	3	99
#11. Campostella	14	8	24	9	12	20	3	3	36	2	1	-	-				1	-	2	135
#12. Southside	-	-	-	5	-	-	1	-	-	-	-	-	-				-	-	-	6
#15. Crosstown-Bayview-Janaf	1	3	-	-	-	-	-	-	-	-	-	-	-	SEE #10	SEE #10	SEE #9	-	-	1	5
#16. Coronado	4	-	2	1	-	9	-	-	5	9	-	-	-				1	-	-	31
#17. Lakeland	4	1	1	-	-	1	-	-	1	8	-	-	-				-	1	1	18
#18. Lansdale	3	1	8	4	1	1	-	-	1	13	1	-	-				-	2	-	35
#20. Va. Beach Blvd.	1	-	8	1	1	3	-	-	2	1	-	-	-				-	-	-	17
#22. Great Bridge	1	1	-	2	1	-	-	-	-	1	-	-	-				-	-	-	6
#23. Crosstown	19	2	14	6	3	15	3	-	13	1	-	-	-				-	-	5	81
TOTALS	142	66	159	88	39	93	19	53	131	227	14	-	-	-	-	-	9	74	57	1,171

BOARDING AND ALIGHTING COUNTS
ATTACHMENTS

Fiscal Year 1977

W = Weekday Check
S = Saturday Check
SU = Sunday Check

DRIVER		DATE		TIME		MILEAGE		FUEL		TOLLS		REMARKS	
WEATHER		DAY-DATE		SCHEDULED TIME		ACTUAL TIME		STREETS		OUTBOUND		INBOUND	
				LV.		ARR.		LV.		ARR.		LV.	
				LV.		ARR.		LV.		ARR.		LV.	
				ON		OFF		ON		OFF		ON	
High	Crawford												
	Wavy												
	Court												
	Dinwiddle												
	Washington												
	Green												
	Effingham High												
Effingham	King												
	County												
	Columbia												
	South Effingham												
South	Thomas												
	Crabapple												
	Chisholm												
	Elm												
	Godwin												
	Clifford												
	Des Moines South												
Des Moines	Duke Des Moines												
Deep Creek	Randolph												
	Lincoln												
	Palmer												
	Jefferson												
	Columbus												
	Chicago												
	Graham												
	Frederick												
	Bagley												
	Downes												
	Portsmouth												
	Manly												
	Pennock												
	Elliott												
	Baldwin												
	Edison												
	Franklin												
	Charles												
	Maxwell												
	Wright												
	Benton												
	DeKalb												
	Kirby												
	Appomattox												
	Greenwood												
	Barclay												
	Hanbury												
	Kelly												
	N. Fairview												
	S. Fairview												
	Shiloh												
	Bender												
	Chesterfield												
	Chartom												
	Debra												
	Wherry												
	Victory												
Victory	Bird												
Bird	Deep Creek												
ACTUAL TIME		ARR.		LV.		ARR.		LV.		ARR.		LV.	
SCHEDULED TIME		ARR.		LV.		ARR.		LV.		ARR.		LV.	
		OUTBOUND		INBOUND		OUTBOUND		INBOUND		OUTBOUND		INBOUND	
TOTAL ON-OFF													
TOTAL OUT													
TOTAL IN													
TOTAL TRIP													
REMARKS:													

TIDEWATER TRANSPORTATION DISTRICT COMMISSION

PROPOSED TRANSIT SERVICE PROGRAM

FISCAL YEAR 1978

No.	Route Name/City	Cost	No. of Passengers Boarding	Estimated for Average Weekday	
				Revenue	Deficit
41	Cradock (Ports.)	\$ 225	235	\$ 81	\$ 144
43	Deep Creek	134	200	81	53
	Portsmouth	90	190	76	14
	Chesapeake	44	10	5	39
43	Westhaven (Ports.)	98	155	62	36
44	Simonsdale (Ports.)	456	620	229	227
45	Cavalier/Tunnel Bus (Ports.)	1944	2850	785	1161
46	River Park (Ports.)	241	270	97	144
47	Green Acres	230	245	112	118
	Portsmouth	195	220	97	98
	Suffolk	35	25	15	20
48	Pughsville	228	260	98	130
	Portsmouth	151	210	74	77
	Chesapeake	42	25	12	30
	Suffolk	35	25	12	23
49	Foundation Park(Ches.)	291	395	154	137
50	Academy Park (Ports.)	250	210	74	176
52&53	Navy Specials (Ports.)	48	90	36	12
54	Greenwood-NOB (Ports.)	105	75	45	60

<u>No.</u>	<u>Route Name/City</u>	<u>Cost</u>	<u>No. of Passengers Boarding</u>	<u>Revenue</u>	<u>Deficit</u>
	Suffolk	\$ 867	800	200	\$ 667
71	Obici/Kingsboro	110	180	45	65
72	Lakeside/Riverview	92	50	13	79
73	Hollywood	120	135	34	86
74	Lake Kennedy	202	135	34	168
75	Saratoga	97	105	26	71
76	South Suffolk	188	165	40	148
	Work Trips	58	30	8	50
	Total TRT - Portsmouth	5118	6285	2054	3064
	Portsmouth	3804	5115	1656	2148
	Chesapeake	377	430	171	206
	Suffolk	937	850	227	710
6	Colonial - South Norfolk	1570	1760	686	884
	Norfolk	1215	1350	527	688
	Chesapeake	355	410	159	196
22	Great Bridge (Ches.)	476	390	152	324
32	Shore Drive (Va. Beach)	93	50	20	73
34	Va. Beach Blvd. - Local	2072	2200	1056	1016
	Norfolk	829	1400	672	157
	Va. Beach	1243	800	384	859
34X	Va. Beach Blvd. - Express (VB)	338	200	110	228
35X	Naval Base Express (VB)	351	100	55	296
	Total TRT - Norfolk	4900	4700	2079	2821
	Norfolk	2044	2750	1199	845
	Chesapeake	831	800	311	520
	Va. Beach	2025	1150	569	1456
	Sunshine Specials (VB) (3 months)	500	500	250	250
	Para-Transit				
	Chesapeake(6 mo.)	140	60	60	80
	Va. Beach(6 mo.)	260	170	130	130

TTDC Transit Service Program
Average Week Day Services
March-April 1977

No.	Route Name	City	Bus Miles In Service (Miles)	Cost (\$)	No. of Pass Boarding	Revenue (\$)	Deficit (\$)	Deficit Per Pass (\$)
1	Granby	Norfolk	1536	1936	3039	1166	770	.25
2	Naval Base	Norfolk	1136	1585	2832	1029	556	.19
3	Chesapeake NOB/NAS	Norfolk	1910	2491	3086	978	1513	.49
4	Church	Norfolk	522	1157	2263	708	449	.20
5	Huntersville	Norfolk	322	722	882	350	372	.42
6	<u>Total</u>		<u>809</u>	<u>1477</u>	<u>1983</u>	<u>804</u>	<u>673</u>	<u>.34</u>
	Colonial	Norfolk	368	449	983	398	51	.05
	S. Norfolk	Norfolk	253	645	617	251	394	.64
	Chesapeake		188	383	383	155	228	.60
8	Little Creek	Norfolk	648	834	989	378	456	.46
9	<u>Total</u>		<u>430</u>	<u>730</u>	<u>1464</u>	<u>327</u>	<u>403</u>	<u>.28</u>
	Ghent	Norfolk	176	292	731	163	129	.18
	Chesterfield	Norfolk	254	438	733	164	274	.37
10	Colley Avenue Larchmont E. Water	Norfolk	434	850	1099	460	390	.35
11	<u>Total</u>		<u>660</u>	<u>1508</u>	<u>3156</u>	<u>943</u>	<u>565</u>	<u>.18</u>
	Liberty Park	Norfolk	318	753	1669	499	254	.18
	Campostella	Norfolk	342	755	1487	444	311	.21
12	<u>Total</u>		<u>231</u>	<u>388</u>	<u>509</u>	<u>147</u>	<u>241</u>	<u>.47</u>

No.	Route		Bus Miles	Cost	No. of	Revenue	Deficit	Deficit
	Name	City	In Service (Miles)	(\$)	Pass. Boarding	(\$)	(\$)	Per Pass (\$)
	South- side, Indian River Rd							
		Norfolk	177	271	449	130	141	.31
		Chesa- peake	32	59	31	9	50	1.61
		Va Beach	22	58	29	8	50	1.71
15	Cross- town	Norfolk	438	732	604	212	520	.86
16	Coro- nado	Norfolk	379	604	713	305	299	.42
17	Lake- land	Norfolk	435	677	518	228	449	.87
18	Lans- dale	Norfolk	623	934	1100	475	459	.42
20	Va Beach Blvd	Norfolk	422	643	1053	422	221	.21
22	Great Bridge	Chesa- peake	352	447	365	147	300	.82
23	Cross- town	Norfolk	379	822	1642	406	416	.25
24	Tide- water Flyer	Norfolk	12	22	19	9	13	.68
32	Shore Drive	Virginia Beach	85	73	43	27	46	1.07
34	Va Beach Blvd	Virginia Beach	1743	1656	1600	810	846	.53
35	Laskin Rd, NOB NAS	Virginia Beach	133	116	102	61	55	.54
40	Vepco Shuttle	Norfolk	114	188	277	0	188	.68
	Vocational Trip	Norfolk	6	18	35	13	5	.14
	<u>Grand Total</u>		<u>13759</u>	<u>20610</u>	<u>29373</u>	<u>10405</u>	<u>10205</u>	<u>.35</u>
	Norfolk		11204	17818	26820	9188	8630	.32
	Chesapeake		572	889	779	311	578	.74
	Va Beach		1983	1903	1774	906	997	.56

STATISTICAL SUMMARIES
ATTACHMENTS

TIDEWATER TRANSPORTATION DISTRICT COMMISSION

TRT SYSTEM REPORT

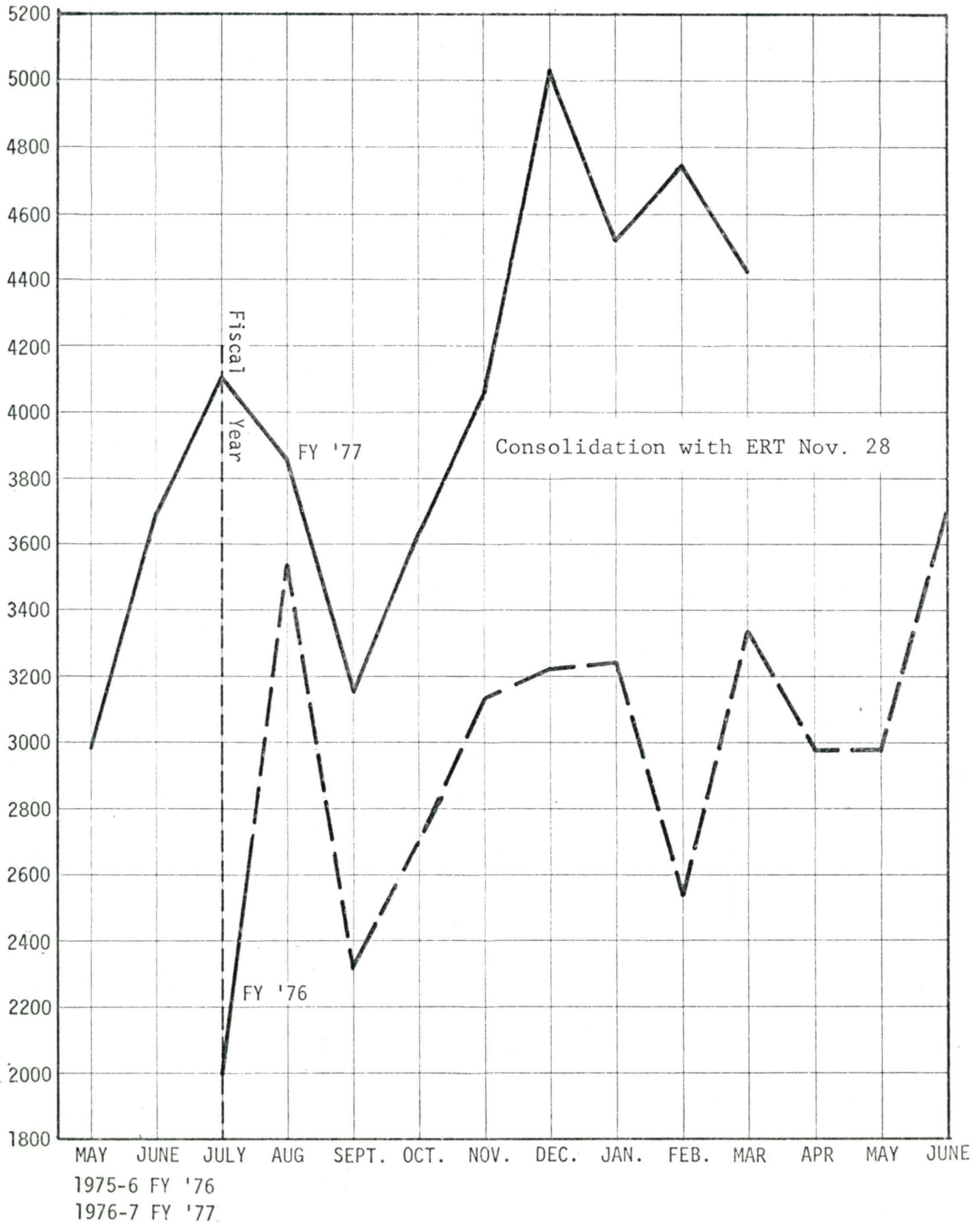
Month: December 1976

	TRT-NORFOLK FACILITY	TRT-PORTSMOUTH FACILITY	TRT
Cost	\$ 554,759	\$ 128,794	\$ 683,553
Revenue	\$ 305,143	\$ 56,346	\$ 361,489
Deficit	\$ 249,616	\$ 72,448	\$ 322,064
Passengers Carried	624,788	216,704	841,492
In-Service Bus Miles	403,846	120,474	524,320
Pass/Bus Mile	1.55	1.79	1.60
Cost/Bus Mile	\$ 1.37	\$ 1.07	\$ 1.30
Cost/Passenger	\$.89	\$.59	\$.81
Revenue/Passenger	\$.49	\$.26	\$.43
Deficit/Passenger	\$.40	\$.33	\$.38
Average Speed	13.6 MPH	13.7 MPH	13.6 MPH
Peak Buses Required	112	33	145
Schedule Adherence	N/A	N/A	N/A
Accidents/100,000 Miles	6.2	2.5	5.3
Road Calls	168	145	313
Personnel	362	90	452
Information Center Calls	8,489	N/A	8,489

NOTES:

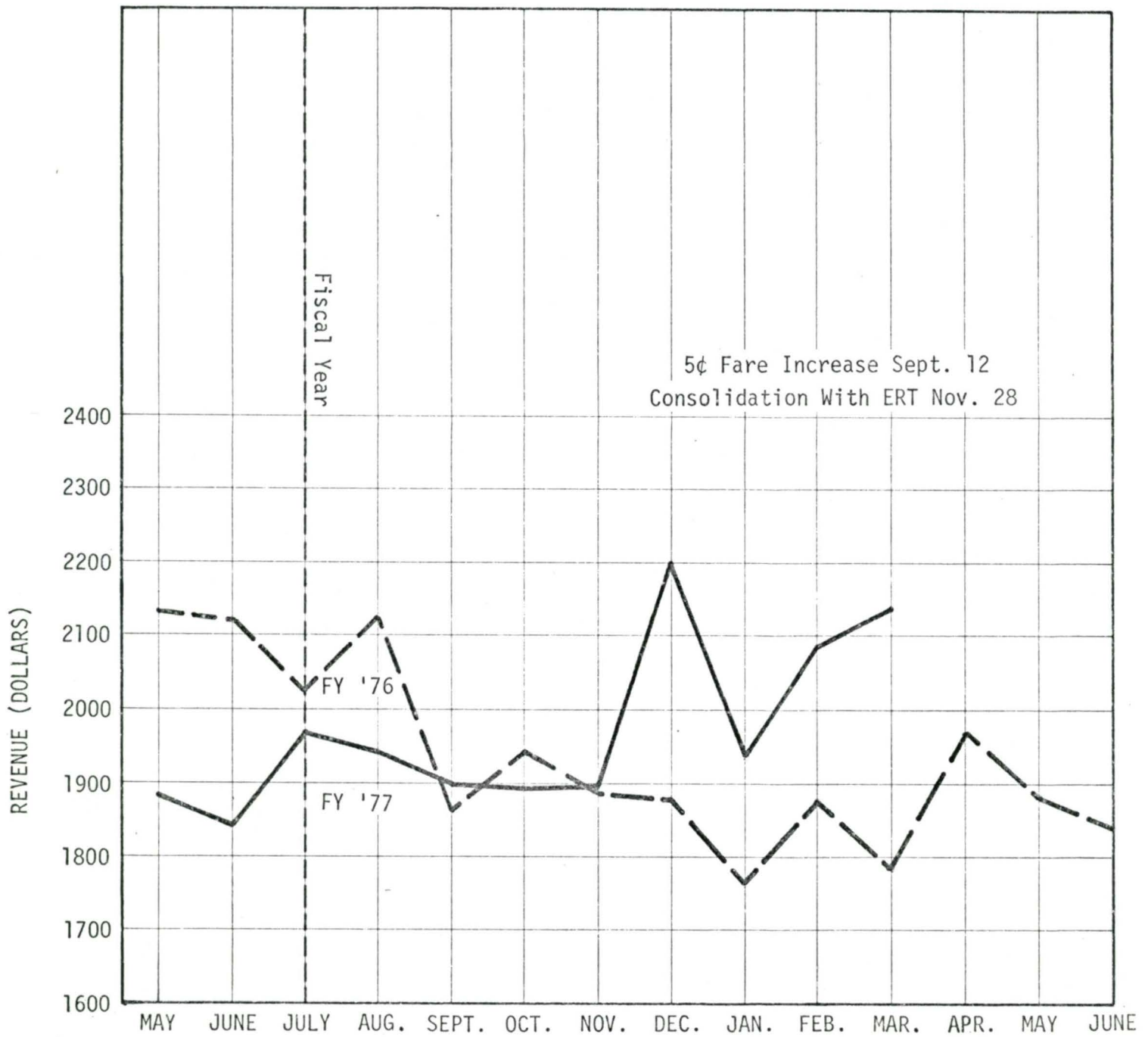
TIDEWATER REGIONAL TRANSIT

AVERAGE WEEKDAY COST
PER MONTH



TIDEWATER REGIONAL TRANSIT

AVERAGE WEEKDAY REVENUE PER MONTH



MAY 5, 1976

TIDEWATER REGIONAL TRANSIT

AVERAGE WEEKDAY DEFICIT PER MONTH





Task 8.2.4 TRANSIT MARKET RESEARCH
AND NEW SERVICE AND
PROMOTIONAL PLANNING

Task 8.2.4 Transit Market Research and New Service and Promotional Planning

Two market research reports were completed. Report #1, Transit Demand Analysis, modeled transit demand in the District to determine what factors significantly affect demand and for use in evaluating present and proposed transit services. Report #2 A Comparison of Captive Transit Riders and Choice Riders, analyzed the attitudinal, socio-economic, demographic and travel characteristics of captive riders and others to determine the characteristics of the potential markets for transit and how to reach them. A copy of each report is attached.

Sunshine Special Experimental Service

The Sunshine Special bus service in Virginia Beach operated from June 14 thru September 6. The following gives the description and results of the service that was operated and recommendations for future service of this kind.

DESCRIPTION

1. Schedule

Service operated 11 hours per day, from 8:00 a.m. to 7:00 p.m., Monday thru Saturday, on a 65 minute headway.

2. Route

Begin at 40th and Pacific, R. Pacific, R. Cavalier Drive-42nd Street, R. Atlantic, (Make loop around Amusement Park at end of Atlantic Avenue) via Atlantic, L. Virginia Beach R. First Colonial, thru Hilltop Shopping Center, R. Laskin-Virginia Beach, R. Constitution, L. through Pembroke Mall, L. Main Entrance to Virginia Beach, L. Virginia Beach, R.

Columbus, L. Independence-Holland, R. Edwin, R.
Princess Anne, L. Capot, L. Sir Barton, L. Parliament
to Princess Anne. And reverse (see attached route map).

3. Fare

The fare was 35¢ one-way for all trips, except for a
50¢ all day pass for trips along the oceanfront.

4. Promotion

Promotion included: press releases; feature stories
(newspaper and TV); Transit-Gram and timetables. Free
introductory rides were offered the first two days of
service. Innkeepers and other merchants on the ocean-
front and in the neighborhoods were sent promotional
letters, timetables and posters, which they displayed.

RESULTS

Summary operating statistics are as follows:

	<u>TOTAL</u>	<u>AVERAGE DAILY</u>
Cost	\$17,575	\$240
Revenue	<u>5,515</u>	<u>75</u>
Deficit	\$12,058	\$165
Bus Miles	27,375	375
Ridership	14,845	205

Actual daily ridership is shown in the attached table.
The highest day's ridership occurred the final week of service
and was 321. Much of the variance in the daily ridership can
be attributed to the vagaries of the weather. The lowest rider-
ship occurred August 9 during the hurricane. However, these 40
passengers indicate there was a minimum level of ridership attract-
ed to the service for other than recreational or shopping purposes.

Saturday ridership was as good as weekday ridership, indicating that seven day service may be appropriate.

A boarding and alighting count was conducted during the second week of service. An analysis of this survey shows the following:

1. Riding was heaviest to the oceanfront in the morning and to Kempsville in the afternoon. However, there was significant riding in the other direction throughout the day, indicating shopping or work trips.
2. Most travel took place from 10:00 a.m. to 4:00 p.m. The peak to base (other than the time period just given) passenger ratio was about 2 to 1.
3. The largest concentration of riders boarded and alighted at: Kempsville; Pembroke Mall; Princess Anne Plaza; Laskin-First Colonial Roads; and scattered along Atlantic Avenue, but mainly between 18th - 25th Streets.

For comparison, the shuttle which operated last summer only along the oceanfront averaged 76 riders per day.

A profile of riders was not developed, however, field observation indicated that the majority of riders were under 16 years of age and beachgoers. The surfboard racks, which held six boards, came into immediate use, and this was not always enough space for the peak hour trips.

The Commission surveyed approximately 70 innkeepers and neighborhood merchants, asking for their evaluations of the service. Approximately 25% returned the survey questionnaire. A copy of the questionnaire is attached. The results are shown below.

1. Guest Use of Service:

<u>Frequently</u>	<u>Infrequently</u>	<u>Not at All</u>	<u>No Reply</u>
8	6	3	1
44%	33%	17%	6%

2. Schedule Adherence:

<u>On Time</u>	<u>Late Sometimes</u>	<u>Late Frequently</u>	<u>No Reply</u>
8	5	0	5
44%	28%	0%	28%

3. Adequacy of Promotion:

<u>Yes</u>	<u>No</u>	<u>No Reply</u>
8	10	0
44%	56%	0%

4. Overall rating:

<u>Good</u>	<u>Fair</u>	<u>Poor</u>	<u>No Reply</u>
10	5	0	3
55%	28%	0%	17%

The majority of comments concerned the need for additional promotion. All the hotels which responded are between 6th and 36th Streets on the oceanfront.

RECOMMENDATIONS

It is obvious that there is considerable recreational and shopping activity during the summer months at the Beach. The largest markets are students, elderly and visitors. Based on the experience of the Sunshine Special, it is apparent that transit can attract a substantial share of that market.

The following recommendations are offered for consideration.

1. Develop the student recreational and shopping markets. Consider putting service into additional neighborhoods. Further identify student travel demands (time, place, etc.) thru additional market research.
2. Also develop the tourist market thru additional market research. Close coordination with innkeepers and travel agencies and bureaus is required to develop a full service transportation package.
3. Consider adoption of the zone fare system throughout Virginia Beach, as is in use in the rest of the District. This will generate additional revenue. From field observation, riders considered the bus fare inexpensive, and few riders would be deterred by adoption of a zone fare.
4. Implement the Sunshine Special during the summer of 1977 based on 1976 experience and further market research.
5. Also, develop more promotions based on the same.

"SUNSHINE SPECIAL"
EVALUATION QUESTIONNAIRE

1. Would you say your guests generally used the shuttle service frequently, infrequently or not at all? _____
2. To your knowledge, were buses generally on time, sometimes late or frequently late? _____
3. Do you feel promotion materials (posters, schedule cards, publicity, etc.) adequately informed your guests or patrons of the service? (Yes or No) _____
4. Overall, would you rate the shuttle service as good, fair or poor? _____
5. What additional comments or suggestions do you have regarding improvements in the shuttle service--schedules, routes, promotion or other?

SUNSHINE SPECIAL RIDERSHIP

<u>DATE</u>	<u>RIDERS</u>
6/16	96
6/17	129
6/18	137
6/19	92
6/21	80
6/22	72
6/23	194
6/24	209
6/25	166
6/26	179
6/28	214
6/29	169
6/30	180
7/01	141
7/02	191
7/03	189
7/05	108
7/06	194
7/07	97
7/08	221
7/09	187
7/10	264
7/12	219
7/13	289
7/14	291
7/15	253
7/16	193
7/17	262
7/19	294
7/20	301
7/21	227
7/22	250
7/23	183
7/24	279
7/26	308
7/27	256
7/28	215
7/29	221
7/30	307
7/31	172
8/02	226
8/03	174
8/04	235
8/05	256
8/06	259
8/07	269
8/09	40
8/10	244
8/11	226
8/12	228
8/13	277
8/14	229

<u>DATE</u>	<u>RIDERS</u>
8/16	129
8/17	294
8/18	237
8/19	271
8/20	191
8/21	212
8/23	228
8/24	263
8/25	200
8/26	254
8/27	274
8/28	220
8/31	263
9/1	262
9/2	321
9/3	170
9/4	181
9/5	181
9/6	159

Weekly Passes

The Commission initiated the sales of Weekly Rider passes in January 1976. After a year of sale it is appropriate to evaluate this program.

Since its introduction, pass sales have been consistently between 45 and 50 per week. In September a 6 week 1/2 price sale began and sales reached a peak of 303. Sales rapidly dropped off after the sale and only a modest permanent increase is expected.

The attached graph shows the farebox, pass and ticket revenue from June, 1976 thru November 1976. Ticket and pass revenue represent a small percentage of the total revenue, only 3.4% for tickets and 1.7% for passes. During the pass sale, the pass market share rose to 6.4% while the ticket market share remained at 3.7%.

An additional graph is included showing price/quantity sold of passes before and after the discount. The calculated elasticities, by zone, indicate that pass sales are generally elastic with respect to price.

From the above information we can conclude the following:

1. The market share for passes is small and is unlikely to exceed 10%, under any conditions, in the near future.
2. Evidently passes do not compete with tickets since there appears to be little effect on ticket sales.
3. A discount will substantially increase pass sales without any apparent, significant affect on total revenue. (A 5¢ fare increase was imposed 9/21/76.)

4. Passes, by themselves and even at a discount, do not substantially affect ridership since ridership is relatively insensitive to price, in general.

What, then, are the reasons for selling passes? They are as follows:

1. Their use helps speed up operations, i. e. boarding the bus.
2. They are a passenger convenience, i. e., exact change is unnecessary and passengers may take multiple stop trips.
3. They represent prepaid, guaranteed fares to TRT.
4. As emphasized by LBL, fewer times are required to make a sale, in this case only once a week instead of 5 times a week.

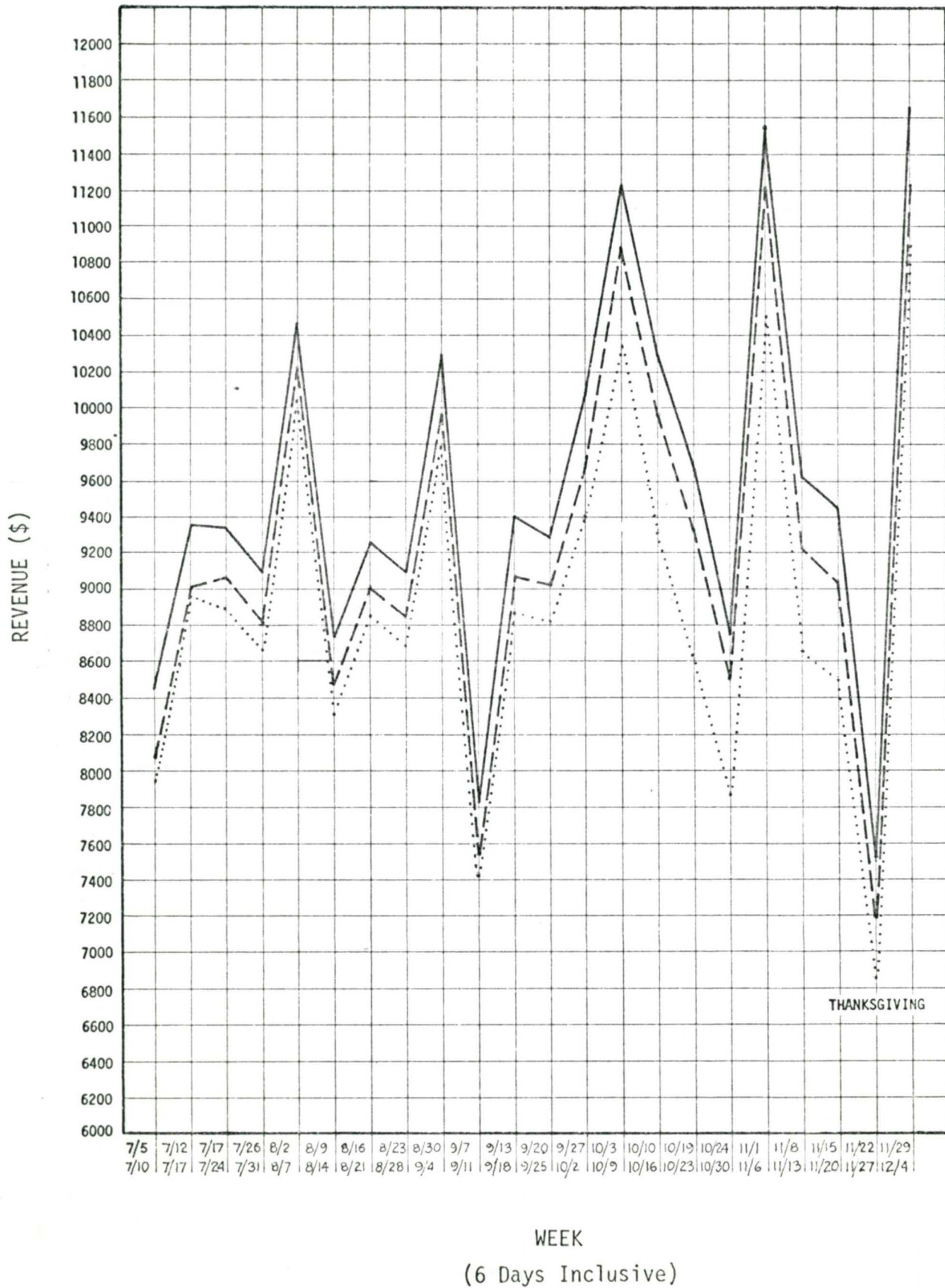
The administrative costs for this program were substantial, about \$2,000 for design and production for a 6 month's supply. Additionally it required 4 to 6 man hours per week to service outlets. Design and production costs per unit are high because 52 variations are required and only 50 to 60 passes per week were sold at full price.

Recommendation

Institute a monthly pass at a 20% discount. A monthly pass will be a great passenger convenience and much less costly to produce, design and service. The discounted price should substantially boost sales without adversely affecting TRT revenue.

- TICKET REVENUE AND TOTAL REVENUE
- - - PASS REVENUE
- FAREBOX REVENUE

AVERAGE WEEKLY REVENUE



ANALYSIS ON WEEKLY PASSES DISCOUNT SALE

