



**JOB ACCESSIBILITY FOR RECIPIENTS OF
TEMPORARY CASH ASSISTANCE IN BALTIMORE CITY
A SPATIAL ANALYSIS**

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By

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I: INTRODUCTION

This report details the results of a study that was undertaken to address concerns raised by the Maryland State Legislature regarding potential barriers to employment for recipients of Temporary Cash Assistance (TCA) in Baltimore City. Specifically, does a lack of transportation to the suburbs, where available jobs are presumed to be located, pose a significant barrier to employment for TCA recipients residing in Baltimore City. The study was conducted by The Jacob France Center at the University of Baltimore for the Maryland Department of Human Resources, Family Investment Administration, through a sub-contract with the University of Maryland School of Social Work.¹ The JFC performed the data matching, the data analysis, and produced the written reports and tabulations². The maps and specialized GIS analysis were done by a GIS specialist.

The availability of suitable employment opportunities for Baltimore City TCA recipients is a critical factor in the success of the State's plan to reform welfare. At the federal level, the passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) in October 1996 changed the focus of providing welfare to needy families from income maintenance to assisting families to become independent through unsubsidized, paid employment. At this time, the State began full implementation of its own welfare reform program, the Family Investment Program, the primary goal of which was to move as many families as possible to independence, as soon as possible, with work as the best avenue toward independence. Cash assistance would be provided on a temporary basis, to needy families who qualified, under the Temporary Cash Assistance Program.

Since 1996, the State has experienced steep declines in the number of adults receiving cash assistance under the TCA Program, as many recipients moved off welfare and into the workforce. In 1996, the number of adults in Maryland receiving temporary cash assistance averaged 59,526 per month (see Table 1). By 2000, this number had fallen by two-thirds to a monthly average of 20,581 adult recipients during the year. Baltimore City has also experienced declines in the number of adult recipients receiving cash assistance but the rate of decline has been slower than in the counties. From 1996 to 2000, the number of adults receiving cash assistance in Baltimore City fell by just over one half. As a result, adult TCA recipients in Baltimore City have formed a growing proportion of the State total. In 1996, less than half (48%) of the State's adult recipients were in Baltimore City. By 2000 that proportion had grown to two-thirds (66%).

¹ This sub-contract forms part of the University of Maryland's Interagency Agreement with the Maryland Department of Human Resources, Family Investment Administration, entitled "Research in Support of Welfare Reform."

² A preliminary report, *Status Report and Available Findings – Spatial Analysis Contract*, was provided to DHR in a memo dated September 12, 2000.

TABLE 1

**TCA Recipient Households, Baltimore Metropolitan Area
Average Monthly Adult Recipients, 1996 to 2000**

	1996			1998			1999			2000		
	No. Recipients	% of State	% of Metro	Recipients	% of State	% of Metro	Recipients	% of State	% of Metro	Recipients	% of State	% of Metro
Baltimore City	28,313	48%	74%	20,183	58%	80%	14,697	62%	82%	13,565	66%	84%
Baltimore County	4,969	8%	13%	2,993	9%	12%	2,010	9%	11%	1,652	8%	10%
Anne Arundel County	2,192	4%	6%	1,113	3%	4%	655	3%	4%	515	3%	3%
Harford County	1,259	2%	3%	470	1%	2%	312	1%	2%	282	1%	2%
Carroll County	478	1%	1%	221	1%	1%	172	1%	1%	125	1%	1%
Howard County	797	1%	2%	218	1%	1%	125	1%	1%	76	0%	0%
Total Baltimore Metropolitan Area	38,008	64%		25,198	72%		17,971	76%		16,215	79%	
Total State	59,526			34,868			23,541			20,581		

Source: Monthly Statistical Reports, Family Investment Administration, The Maryland Department of Human Resources
The Jacob France Center, University of Baltimore, June 2001

A number of reasons may be posited as to why the number of adults receiving TCA in Baltimore City has been falling at a slower rate than in the State as a whole. A higher unemployment rate and declines in employment in Baltimore City compared with the surrounding metropolitan counties indicates stronger competition for available jobs in the City. In 1999, the unemployment rate averaged 7.1% in the City, while in the surrounding counties it ranged between 1.8% in Howard to 3.7% in Baltimore County. From 1993 to 1999, the number of jobs in the City decreased by 2%, while the suburban counties all experienced increases in the number of jobs ranging from 15% in Anne Arundel and Baltimore County to 39% in Howard County. TCA recipients in Baltimore City may have fewer job skills, or lower levels of job readiness, which affects their ability to compete for jobs in the City or the surrounding counties³. They may not have been able to take advantage of strong job growth in the counties because of inadequate transportation or lack of information on job openings. This report focuses on the issue of inadequate transportation.

In order to assess whether inadequate transportation posed a barrier to TCA recipients in Baltimore City seeking employment, an analysis was conducted to determine whether a spatial mismatch exists between TCA recipients living in Baltimore City and suburban job opportunities in the Baltimore Metropolitan Area⁴. The spatial mismatch hypothesis, which has been the subject of debate in the academic literature for a number of years, states that the movement of jobs from the central city to the suburbs has led to a geographic divide between the mostly urban residences of welfare recipients and the mostly suburban locations of new jobs, and that low-income workers have no easy way to travel between home and work. If this is true, successful implementation of welfare reform and the movement of TCA recipients into the workforce could be limited by the accessibility of suitable job opportunities. In this report, using data from State administrative databases, a Geographic Information System (GIS) was used to map the residential locations of welfare recipients, the sites of potential and actual employers, and public transportation routes to assess the degree to which suitable job openings in the counties were accessible to TCA recipients living in Baltimore City.

The report first examines regional hiring patterns in industries that have historically provided employment to TCA recipients, and maps the locations of recipient residences and the employers relative to public transportation routes, using data found in State administrative databases. The methodology used and the results of the analysis are discussed in Section II. Then, by linking data from these State administrative records, we were able to determine where a portion of former TCA recipients found employment, the locations of the employers and the accessibility of those employers to the recipients using public transportation. Of the 19,042 jobs found by Baltimore City TCA recipients in 1999, we were able to map the employer addresses of 6,610 (35%) of the jobs. The methodology and results from the analysis of where recipients found jobs is detailed in

³ For a discussion of jobs, wages, and low-skill job seekers in Baltimore and the surrounding counties see *Baltimore Area Jobs and Low-Skill Job Seekers: Assessing the Gaps*, A Report of the Job Opportunities Task Force, March 1999.

⁴ The Baltimore Metropolitan Area comprises Baltimore City, Baltimore County, Anne Arundel County, Howard County, Harford County and Carroll County.

Section III. Section IV summarizes the spatial analyses of the jobs that were potentially available to Baltimore City TCA recipients and the actual jobs filled by these recipients, and discusses whether an inadequate system of public transportation contributed to the lack of access to potential jobs by Baltimore City TCA recipients.

II. ACCESSIBILITY OF EMPLOYMENT OPPORTUNITIES IN THE BALTIMORE METROPOLITAN AREA TO BALTIMORE CITY TCA RECIPIENTS

During the past decade, the suburban counties in the Baltimore Metropolitan Area (Baltimore, Anne Arundel, Howard, Harford and Carroll) experienced strong employment growth. From 1993 to 1999, employment increased by 19% in the five suburban counties, compared with a decline of 2% in Baltimore City. Employment in Howard County grew by 39% during this period and the other four counties each recorded gains of 15% or more (see Table 2). By 1999, 69% of the jobs in the Baltimore Metropolitan Area were located in the five suburban counties.

In order to explore whether inadequate public transportation has prevented Baltimore City TCA recipients from taking advantage of these new jobs, we will first identify those jobs that would potentially be available to TCA recipients and then examine the proportion of those jobs located in the counties and in the City. We will examine available transportation services in the Baltimore Metropolitan Area and assess whether TCA recipients in Baltimore City are able to easily access public transportation from their homes. Then, we will analyze whether the employers in the suburban counties are accessible by public transportation from Baltimore City.

METHODOLOGY

The methodology used in this part of the report is similar to that used in the November 1999, *Report on Access to Entry-Level Jobs in the Baltimore Region*, prepared by the Jacob France Center for the Citizens Planning and Housing Association (CPHA). In addition to updating the data in the CPHA report, we have included additional maps, a more detailed breakdown of distances, and used manual and computer address verification to increase the percentage of TCA recipient addresses and new hires transactions mapped, as well as more extensive data mapping.

In order to map the locations of the welfare recipients and the job opportunities, we first created two data sets based on State administrative data from the Maryland Department of Human Resources (DHR) and the Maryland Department of Labor Licensing and Regulation (DLLR). Appropriate precautions were taken to maintain the confidentiality of the individual records. The data sets are detailed below.

TCA Recipient Data Set

This data set contains an unduplicated list of all adults in Baltimore City who received TCA in 1998, and their residential addresses. The data are from the Maryland Department of Human Resources administrative databases (CARES and AIMS). Individual records were summed by census tract to show concentrations of recipients by census tract.

TABLE 2

Employment¹ in the Baltimore Metropolitan Area, 1993 to 1999

	1993	1994		1995		1996		1997		1998		1999		% change 1993- 1999
	Total Jobs	Total Jobs	Annual % Change	Total Jobs	Annual % Change	Total Jobs	Annual % Change	Total Jobs	Annual % Change	Total Jobs	Annual % Change	Total Jobs	Annual % Change	
Baltimore City	467,115	466,255	0%	457,782	-2%	454,725	-1%	453,649	0%	452,384	0%	458,199	1%	-2%
Baltimore County	386,029	394,006	2%	407,791	3%	413,449	1%	422,942	2%	432,272	2%	443,649	3%	15%
Anne Arundel County	246,382	254,057	3%	262,326	3%	264,165	1%	270,162	2%	275,778	2%	282,866	3%	15%
Howard County	112,751	117,914	5%	124,629	6%	131,060	5%	139,876	7%	147,913	6%	156,895	6%	39%
Harford County	75,842	79,322	5%	80,824	2%	82,639	2%	86,372	5%	88,734	3%	91,853	4%	21%
Carroll County	52,650	55,161	5%	57,153	4%	58,747	3%	61,095	4%	63,536	4%	65,410	3%	24%
Total Baltimore Metro Area	1,340,769	1,366,715	2%	1,390,505	2%	1,404,785	1%	1,434,096	2%	1,460,617	2%	1,498,872	3%	12%
Total State	2,662,178	2,712,656	2%	2,775,825	2%	2,817,449	1%	2,884,357	2%	2,954,521	2%	3,029,190	3%	14%

¹Total non-farm employment

Source: U.S. Bureau of Economic Analysis, Maryland Department of Planning
The Jacob France Center, University of Baltimore, June 2001

Job Opportunity Data Set

In order to obtain a measure of available jobs, we utilized data on all new hires transactions completed in 1999, in the Baltimore Metropolitan Area, from administrative records maintained by the Jacob France Center through a data sharing agreement with DLLR. A new hires transaction is an actual completed hiring decision made by a firm.

In order to limit new hires to jobs that could potentially be filled by welfare recipients, we only included new hires in those industries that have historically hired TCA recipients. Based on the September 1997 report, *Life After Welfare: An Interim Report*, by the Family Investment Administration, Maryland Department of Human Resources and University of Maryland School of Social Work, the following industries were identified as being most likely to hire TCA recipients:

Services - business services, health services, social services, personal services, hotels and lodging places. (It should be noted that personnel supply services was excluded from business services because the addresses listed were for employment agencies rather than job locations).

Retail trade - eating and drinking places, miscellaneous retail, food stores, general merchandise stores

Manufacturing

Wholesale trade

Public administration/human resource programs

Nonclassifiable establishments

Because establishment employment data are not available by occupation, it was not possible to analyze new hires transactions for the entry-level occupations that are most accessible to former TCA recipients. As a result, in order to approximate a measure of entry-level jobs, only those with earnings less than \$20,000 in 1999 were included.

We then identified locations of the employers who completed the new hires transactions. The employer locations were mapped with the following exclusions:

Companies that were classified under more than one industry code were excluded from the data set. In addition, employers with addresses in more than one jurisdiction were excluded from the data set since it was assumed these were multi-establishment firms and it was therefore not possible to distinguish the address of the job location.⁵

The total new hires transactions that occurred at the mapped employer locations were then summed by zip code to show the concentration of new hires by zip code.

⁵ It should be noted that we were not able to exclude those with more than one address in the same jurisdiction. Further work that still needs to be done to address the issue of the spatial accuracy of the employment data, but was outside the scope of the current report, includes linking back to DLLR data for a more complete examination of multi-establishment reporting.

In the final step, the two data sets were compared to data on the mass transit route structure in the Baltimore Metropolitan Area to measure the accessibility of mass transit and the commuting options for TCA recipients, both from their homes and from their potential employers. Comprehensive data on route structures in 1999 were received from the Maryland Department of Transportation for the following mass transit systems: the Mass Transit Administration's (MTA) Fixed Route Bus Service, Light Rail Service and Metro Service; the Maryland Rail Commuter Service (MARC); the Annapolis Transit; the Carroll County Transit System; the Harford County Transportation Service; and the Howard Area Transit Service.

RESULTS

We were able to map the employer locations of 184,342 entry-level, new hires transactions in the Baltimore Metropolitan Area in 1999, in those industries that have historically hired welfare recipients (63% of the entry-level new hires in these industries). Most of the new hires were in industries in the services and retail trade sectors, which in 1999 accounted for 81% of the total new hires that we mapped (see Table 3). Within the services sector, business services and health services hired the most new employees, followed by social services. In the retail trade sector, new hires in eating and drinking places exceeded all other sub-sectors, with 28% of all new hires transactions occurring in this sub-sector (see Table 3).

Location of Job Opportunities

In the Baltimore Metropolitan Area, more than two-thirds of the entry-level new hires that we mapped occurred in the suburban counties (see Table 4). Almost one-third of the new hires was in Baltimore County, 17% was in Anne Arundel County, and 11% was in Howard County. Harford and Carroll Counties accounted for just 6% and 3%, respectively, of new hires in the metropolitan area. Baltimore City, on the other hand, accounted for 32% of the new hires.

Since more than two-thirds of new hires transactions in industries that could potentially hire TCA recipients occurred in the suburban counties, the next step was to look at whether those jobs were accessible to City residents. Most TCA recipients in the City do not own reliable cars that they can drive to work on a regular basis. A study conducted by the Community Transportation Association of America found that fewer than 7% of all welfare recipients own a car. For those that did own a car, the average value of the vehicle was \$619. As a result, these City residents are, for the most part, dependent on public transportation or publicly funded van pools to transport them to their jobs in the suburbs.

TABLE 3

**New Hires in Industries Likely to Employ TCA Recipients, by Industry
Baltimore Metropolitan Area, 1999**

	No. New Hires	% of Total
Services	81,098	44%
Business Services ¹	32,675	18%
Health Services	23,805	13%
Social Services	14,001	8%
Personal Services	7,163	4%
Hotels and Lodging Places	3,454	2%
Retail Trade	69,082	37%
Eating and Drinking Places	52,265	28%
Miscellaneous Retail	9,624	5%
Food Stores	7,071	4%
General Merchandise Stores	122	0%
Manufacturing	18,196	10%
Wholesale Trade	10,995	6%
Public Administration/ Human Resource Programs	3,036	2%
Nonclassifiable Establishments	1,935	1%
TOTAL	184,342	

¹Excludes personnel supply services

Source: Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

TABLE 4

**New Hires in Industries Likely to Employ TCA Recipients
By Jurisdiction, Baltimore Metropolitan Area, 1999**

	No. New Hires	% of Total
Baltimore City	59,726	32%
Baltimore County	57,586	31%
Anne Arundel County	30,486	17%
Howard County	19,839	11%
Harford County	10,270	6%
Carroll County	6,435	3%
TOTAL	184,342	100%

Source: Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

Accessibility of Public Transportation to TCA Recipients in Baltimore City

Map 1 shows the census tracts in Baltimore City where TCA recipients were living in 1998. The census tracts with the highest concentration of TCA households, i.e. between 251 and 500 TCA households, were primarily in the center of the City between North Avenue and Route 40, and in the north west along Reisterstown Road, as well as two small areas in the south and west of the City.

As may be seen in Map 2, public transportation routes in the metropolitan area are concentrated in the City and radiate out from the center of the City so that most areas of the City are served by public transportation. The services offered vary in terms of type of transportation, accessibility of transit stops, as well as hours of operation, frequency of service, speed of travel and connections between transit systems. Public transportation available to Baltimore City residents includes the Mass Transit Administration (MTA) bus system, the Light Rail, the Metro subway and the MARC train. A brief summary of the services provided by each is in Table 5.

The density of public transportation routes in the City in Map 2, in particular the MTA bus system, indicates that TCA recipients living in the City do have ready access to public transportation. Our next step, therefore, was to estimate the distance between the recipients' residences and the nearest bus or train stop. We were able to map the distance from residence to transit stop for 27,600 of these households, or 96% of the 28,713 adult recipients in Baltimore City in 1998. The linear distance was calculated from each TCA residence to the closest transit stop, for each type of mass transit. The households were then grouped by fractions of a mile from the closest stop. The results are shown in Table 6.

All but one of the TCA households were located within one-half mile from the nearest MTA bus stop, 98% were within one-quarter mile, and 79% were within one-eighth mile from the nearest bus stop. Most households (94%) lived within one-half mile of an express bus stop, 80% were within one-quarter mile, and 53% were within one-eighth mile of the nearest express stop. Fewer households were close to a limited bus stop; 25% of the recipients were within one-quarter mile, and 14% were within one-eighth mile of the nearest limited bus stop.

Train services were less accessible to TCA households in terms of walking distance to train stops. Only 17% of the recipients were within one-half mile of a Metro stop, 5% were within one-quarter mile, and 1% were within one-eighth mile of a Metro stop. Seven percent and 5% of the recipients, respectively, lived within one-half mile of a Light Rail stop or a MARC train station, and 5% or less were within one-quarter mile of a Light Rail or MARC train stop. However, there are MTA bus routes that connect with many of the Metro stops and Light Rail stops, and the \$14 weekly pass provides for unlimited travel on the MTA buses, Metro subway and Light Rail. Forty-five percent of the households were within one mile of a Metro stop, and about one-quarter of the households were within one mile of a Light Rail stop. The MARC train has limited connections with the Light Rail, Metro subway and MTA bus services and those who buy

TABLE 5

Public Transportation Serving Baltimore City in 2000

MTA Buses

- More than 60 bus routes throughout Baltimore City, parts of Baltimore County and Anne Arundel County
- Three types of service: regular, express and limited
- Connections with Light Rail and Metro Subway
- Fare: \$1.35 per trip. Day, weekly and monthly passes cost \$3, \$14 and \$54, respectively
- Transfers available. Day passes cover multiple bus trips and Light Rail. Weekly passes cover unlimited rides on buses, Light Rail and Metro Subway
- Most bus routes operate 7 days a week with holiday schedules
- Times of operation vary. Some routes operate 24 hours a day

Metro Subway

- Operates from downtown Baltimore to Owings Mills
- Total trip takes about 25 minutes (downtown to Owings Mills)
- Connections with Bus and Light Rail
- Fare: \$1.35 per trip. Day, weekly and monthly passes cost \$3, \$14 and \$54, respectively and allow unlimited rides including connections with other MTA services
- Trains run every 8 minutes during rush hour and every 10 to 20 minutes at other times
- Service runs from 5:00 a.m. (6:00 a.m. on Saturdays) to midnight
- No service on Sundays

Light Rail

- Main line operates from downtown north to Hunt Valley in Baltimore County, and south to Glen Burnie in Anne Arundel County
- Trip takes almost one hour from downtown Baltimore (Camden Yards) to Hunt Valley and 25 minutes from downtown Baltimore (Camden Yards) to Glen Burnie
- Additional line from Penn Station in City to BWI Airport in Anne Arundel County
- Trip takes about 25 minutes from downtown to BWI Airport
- Fare: \$1.35 one way. Day, weekly and monthly passes available and allow unlimited travel on Light Rail, Metro Subway or MTA bus
- Trains run every 17 minutes
- Service runs from 6:00 a.m. (8:00 a.m. on Saturdays) to 11:00 p.m. on weekdays. and from 11:00 a.m. to 7:00 p.m. on Sundays and holidays

MARC Train

- The Penn line runs from Penn Station in Baltimore City north through Baltimore County and Harford County to Perryville and south through Anne Arundel County to Washington D.C.
- The Camden Line runs from downtown Baltimore (Camden Yards) through northern Anne Arundel County to Washington D.C.
- Fares: \$3.25 to \$5.75, one way, according to length of trip. Weekly, monthly tickets available
- MARC weekly and monthly ticket holders may ride MTA Local Bus, Metro subway and Light Rail line services at no extra cost
- Trains run Monday to Friday, 5:00 a.m. to midnight. No service on week-ends or major holidays

TABLE 6

**TCA Recipient Households in Baltimore City, 1998
Distance from Mass Transit Stops, by Type of Mass Transit**

Distance from Transit Stop	Type of Mass Transit											
	MTA Bus		MTA Express Bus		MTA Limited Bus		Light Rail		Metro Subway		MARC Train	
	Number of Households	% of Total	Number of Households	% of Total	Number of Households	% of Total	Number of Households	% of Total	Number of Households	% of Total	Number of Households	% of Total
1/8 mile or less	21,837	79%	14,709	53%	3,954	14%	62	0%	254	1%	51	0%
1/4 mile or less	27,035	98%	22,000	80%	6,970	25%	359	1%	1,393	5%	230	1%
1/2 mile or less	27,599	100%	26,068	94%	11,610	42%	1,986	7%	4,752	17%	1,446	5%
1 mile or less	27,600	100%	27,472	100%	16,730	61%	7,269	26%	12,487	45%	6,988	25%
Over 1 mile	0	0%	128	0%	10,870	39%	20,331	74%	15,113	55%	20,612	75%
Total	27,600		27,600		27,600		27,600		27,600		27,600	

Source: Maryland Department of Transportation; Maryland Department of Human Resources
The Jacob France Center, University of Baltimore, June 2001

a weekly or monthly MARC train ticket can use these services at no additional cost. One-quarter of the TCA households were within one mile of a MARC train station (see Table 6).

Accessibility of Potential Jobs Using Public Transportation

The next step was to determine whether job opportunities for TCA recipients were located in the vicinity of mass transit systems serving the Baltimore area. As was shown in Table 4, two-thirds of the entry-level new hires in 1999, in industries that have historically hired welfare recipients, were located in the five suburban counties. In contrast, 80% of the welfare recipients in the Baltimore Metropolitan Area resided in Baltimore City.

Locations of Employers with New Hires

Map 3 plots the locations where the new hires occurred. We were able to map 184,342 new hires transactions at 11,349 employer locations, or 70% of the total employer locations in these industries in the original sample.⁶ Of the remaining 30%, we excluded 12% of the employer locations because of discrepancies and inconsistencies in the addresses. A further 10% were excluded because they had addresses outside the Baltimore Metropolitan Area, 8% were excluded because they had Post Office boxes in Maryland, and less than 1% had incomplete addresses.⁷ Table 7 shows the distribution, by jurisdiction, of the business locations that were mapped. Slightly more than two-thirds of the employer locations were in the suburban counties, similar to the distribution of new hires shown in Table 4.

According to Map 3, the employers were concentrated in areas of Baltimore County close to the City line, north from Towson to the Cockeysville/Hunt Valley area, east around Essex and Perry Hall, to the northwest in Randallstown and Reisterstown, and west in the Catonsville area. In Anne Arundel County, most employers tended to be in the eastern half of the county around Glen Burnie, Arnold and Annapolis. Employers in Howard County were clustered around Columbia, and in Harford County, they were concentrated in the south-eastern part of the County and around Bel Air and Aberdeen. In Carroll County, employers were clustered around Westminster.

We also mapped the concentration by zip code of the new hires transactions that occurred at the 11,349 employer locations (see Map 4). The highest concentrations of new hires (1,001 to 6,500 new hires per square mile) were in zip codes located in downtown Baltimore and directly east of downtown in Baltimore County. In the suburban counties, the area around Towson in Baltimore County showed between 401 and 1,000 new hires transactions per square mile, as did the area between Columbia and

⁶ As described above, businesses with multiple industry classifications, businesses with multiple county locations, and personnel supply services were excluded from the original sample.

⁷ It should be noted that, due to the nature of the data, there may still be some inaccuracies with regard to the locations of some of the new hires transactions.

TABLE 7

**Employer Locations for New Hires in Industries Likely to Employ TCA Recipients
By Jurisdiction, Baltimore Metropolitan Area, 1999**

	Number of Employer Locations	% of Total
Baltimore City	3,464	31%
Baltimore County	3,827	34%
Anne Arundel County	1,986	17%
Howard County	997	9%
Harford County	715	6%
Carroll County	360	3%
TOTAL	11,349	100%

Source: Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

Laurel in Howard County. Most of Baltimore City and surrounding areas of Baltimore County, Howard County and northeastern Anne Arundel County had concentrations of 51 to 400 new hires per square mile. Edgewood and Bel Air in Harford County and Annapolis in Anne Arundel County also showed 51 to 400 new hires per square mile. The remaining zip codes forming the outer ring of the suburban counties around Baltimore City, including all Carroll County, most of Harford County, northern Baltimore County, western Howard County and all southern Anne Arundel County had 50 or fewer new hires per square mile.

The information in the maps indicates that job opportunities for TCA recipients in suburban counties are concentrated primarily in the inner ring of suburbs around the City comprising southern Baltimore County, eastern Howard County, and northern Anne Arundel County. In addition, there are job opportunities concentrated around Annapolis in Anne Arundel County, and Bel Air and Edgewood in Harford County.

Public Transportation Relative to Employer Locations

As we have seen in Map 2, public transportation systems serving Baltimore City provide services to the suburban counties, but generally only to those areas immediately surrounding the City.

Map 5 shows the MTA bus routes relative to the employer locations where the new hires occurred. Those locations within one mile of MTA routes are inside the green boundary line in Map 5. The MTA routes cover much of the area in Map 4 where the new hires are concentrated, including Baltimore City, areas of Baltimore County surrounding the City, such as Essex, Perry Hall, Towson, Cockeyville, Reisterstown, and Randallstown. MTA routes also provide access to Glen Burnie and Annapolis in Anne Arundel County. The MTA provides no service to Bel Air, Edgewood and Aberdeen in Harford County, Columbia in Howard County or remaining areas of north eastern Anne Arundel County⁸.

The Light Rail provides access to job opportunities in the Timonium and Cockeyville/Hunt Valley area in Baltimore County, as well as to Glen Burnie and BWI Airport in Anne Arundel County (see Map 6). The Metro subway provides access to jobs in Owings Mills and Reisterstown in Baltimore County (see Map 7). The Penn Station line of the MARC train provides access to jobs in the Middle River area in Baltimore County and Edgewood and Aberdeen in Harford County. To the South it provides access to jobs at BWI Airport and Odenton in Anne Arundel County. The Camden Yards line provides access to areas of southern Howard County including Dorsey, Jessup, Savage and Laurel (see Map 8).

⁸ It should be noted that the MTA provides a commuter bus service for locations in Anne Arundel, Howard and Harford Counties, but these “Park and Ride” buses serve those commuting from the suburbs to the City and the stops and schedules are arranged accordingly. As a result, in their current form, the commuter buses generally don’t match the schedules for those commuting to work from the City to the suburbs.

Some of the suburban counties operate public transportation services, but these tend to be limited and, for the most part, these services do not connect with public transportation services in Baltimore City. A brief summary of transportation services provided by the counties is in Table 8, and the route structures of these services relative to the locations of the new hires are plotted in Maps 9 through 12.

Map 9 shows concentrations of employers with new hires along the bus routes for the Annapolis Public Transportation System in downtown Annapolis. It also shows links between the Annapolis buses and the MTA bus service from Baltimore City. Businesses with new hires are shown clustering around the bus routes of the Carroll County Public Transportation system in Westminster (see Map 10). However, there are no connections between these bus routes and public transportation systems serving Baltimore City. Map 11 shows concentrations of new hires in Bel Air, Aberdeen and Edgewood close to Harford County Public Transportation bus routes. Again, there are no connections with public transportation in Baltimore City, with the exception of the MARC train station in Aberdeen. Clusters of employers are located along the bus routes operated by the Howard County Transportation Service in Columbia and Ellicott City but there are no direct connections with public transportation serving Baltimore City residents (see Map 12).

Distance between Employers and Transit Stops

After mapping the locations of the employers with job opportunities, the next step was to estimate the distance of each employer location from the nearest transit stop. Of those businesses in industries likely to hire welfare recipients, almost one-third were located more than one mile from the nearest MTA bus stop. As may be seen in Table 9, 64% of the businesses were located within one-half mile of a bus stop, 55% were within one-quarter mile and 45% were within one-eighth mile of a bus stop. Less than one-half (46%) of the businesses were within one-half mile of an express bus stop, 35% were within one-quarter mile and 28% were within one-eighth mile of an express bus stop. Fewer businesses were close to a limited bus stop. Only a small proportion of businesses were near train or subway stops: 9% were within one-half mile of the Light Rail; 8% were within one-half mile of a Metro stop; and 4% were within one-half mile of a MARC station.

In the suburban counties, there were a number of employers with new hires that were located within easy walking distance of a local county bus stop (see Table 10). In Harford and Howard Counties, more than half the businesses with new hires in those counties were one-quarter mile or less from the nearest local bus stop. In Anne Arundel County, 22% of the businesses with new hires were within one-quarter mile of a local bus stop, while in Carroll County, 42% of the businesses with new hires were one-quarter mile or less from the nearest local bus stop. It should be noted that, while a number of these employers are accessible by county buses, they represent only a small share of regional employment activity.

TABLE 8

County Transportation Systems in 2000

Annapolis Public Transportation

- The Annapolis Department of Public Transportation operates bus services in the City of Annapolis and surrounding areas in Anne Arundel County
- Connects with MTA buses from Baltimore City
- Fare: \$0.75
- Buses operate 7 days a week, 6:00 a.m. (8:00 a.m. on Sundays) to 7:00 p.m.

Howard Area Transit Service

- Howard Area Transit Service operates buses serving Columbia and surrounding areas
- No connections with MTA buses from Baltimore City, Light Rail, Metro Subway or MARC train
- Fare: \$1.00
- Buses operate Monday to Saturday, 6:00 a.m. to 7:00 p.m.

Harford County Transportation Service

- Harford County Transportation Service operates bus services between Havre de Grace, Aberdeen, Joppatowne, Edgewood, Fallston and Bel Air
- Connections with MARC train (Aberdeen station)
- Fare: \$0.50 - \$1.00
- Operates Monday to Friday, 6:30 a.m. to 6:30 p.m.

Carroll Transit System

- Carroll Transit System operates bus services in Westminster
- No connections with public transportation from Baltimore City
- Fare: \$1.00 - \$2.00
- 5 trips per day, Monday to Friday, 8:00 a.m. to 5:00 p.m.

TABLE 9

**Employer Locations of Industries with New Hires and Likely to Employ TCA Recipients
Distance from Mass Transit Stops, by Type of Mass Transit
Baltimore Metropolitan Area, 1999**

Distance from Transit Stop	Type of Mass Transit										
	MTA Bus		MTA Express Bus		MTA Limited Bus		Light Rail		Number of		MARC Train
	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Employer Locations	% of Total	Number of Employer Locations
1/8 mile or less	5,086	45%	3,182	28%	1,490	13%	196	2%	137	1%	16
1/4 mile or less	6,270	55%	4,021	35%	1,984	17%	523	5%	396	3%	71
1/2 mile or less	7,211	64%	5,270	46%	2,736	24%	1,057	9%	871	8%	424
1 mile or less	7,824	69%	6,048	53%	3,497	31%	1,971	17%	1,515	13%	1,316
Over 1 mile	3,525	31%	5,301	47%	7,852	69%	9,378	83%	9,834	87%	10,033
Total	11,349		11,349		11,349		11,349		11,349		11,349

Source: Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

Baltimore Metropolitan Area, 1999

Distance from Transit Stop	County Bus System							
	Transportation		Carroll County		Harford County		Howard Area	
	No. Employer Locations	% of Total	No. Employer Locations	% of Total	No. Employer Locations	% of Total	No. Employer Locations	% of Total
1/4 mile or less	323	16%	112	31%	383	54%	433	43%
1/2 mile or less	436	22%	151	42%	419	59%	573	57%
1 mile or less	473	24%	172	48%	497	70%	670	67%
Over 1 mile	527	27%	175	49%	558	78%	739	74%
Total	1,459	73%	185	51%	157	22%	258	26%
	1,986		360		715		997	

Source: Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

We also estimated the distance between the new hires that we mapped in the Baltimore Metropolitan Area and the nearest transit stop. In Table 11, it may be seen that compared with the employers, a slightly higher percentage of the jobs were within walking distance of a bus stop (regular, express and limited). In addition, a slightly higher proportion of the new hires relative to the employers was located close to the Light Rail and the Metro. Less than 1% of the new jobs was within easy walking distance of a MARC train station.

Table 12 shows the distance between the jobs in the suburban counties and the nearest county bus stop. For the most part, the proportion of jobs that were within easy walking distance of a bus stop was similar to the proportion of employers (see Table 10). In Howard County, however, a somewhat higher proportion of jobs than employers was within walking distance of a local bus stop, indicating that companies with more new hires were located closer to local transportation routes.

In analyzing the proximity to mass transit services of businesses with new hires in industries that have historically hired welfare recipients, it is clear that access to jobs in Anne Arundel, Howard, Harford and Carroll Counties for Baltimore City recipients is limited. Without direct service or reliable connections between the MTA transit system serving Baltimore City and local bus services, the commute becomes infeasible, particularly given that many former recipients also need to take children to child care and perform errands. Services are also costly, particularly with regard to the MARC train (minimum of \$6.50 per day). Local bus systems in Anne Arundel, Howard, Harford and Carroll counties provide limited or no access to jobs for commuters from Baltimore City.

Alternative Transportation Services

Several paratransit demonstration programs have been established to help welfare recipients transitioning to employment. However these programs have limited funding and serve a relatively small number of clients. These are van pools that have no fixed route structure, and pick up and drop off passengers where there is interest. For example, the Historic East Baltimore Community Action Coalition (HEBCAC) operates the Bridges-to-Work program through the Baltimore Empowerment Zone funded by the U.S. Department of Housing and Urban Development. In 1999, it is estimated that 408 Baltimore Metropolitan Area employers were located within easy walking distance of the Bridges-to-Work van pool, and 870 recipients lived within one-quarter mile of this van pool. This type of analysis is imprecise, however, because van pools have flexible route structures and stops.

The Mass Transit Administration, in conjunction with the Governor's Coordinating Committee on Human Services Transportation, has developed the Job Access and Reverse Commute program which funds services intended to link workers with job opportunities. This includes a demand response service connecting West Baltimore City residents with job opportunities in Howard County operated by The Howard Area Transit Service. In Anne Arundel County, there is a new service

TABLE 11

**Number of New Hires in Industries Likely to Hire TCA Recipients
Distance from Mass Transit Stops, by Type of Mass Transit
Baltimore Metropolitan Area, 1999**

Distance from Transit Stop	Type of Mass Transit											
	MTA Bus		MTA Express Bus		MTA Limited Bus		Light Rail		Metro Subway		MARC Train	
	No. of New Hires	% of Total	No. of New Hires	% of Total	No. of New Hires	% of Total	No. of New Hires	% of Total	No. of New Hires	% of Total	No. of New Hires	% of Total
1/8 mile or less	87,803	48%	56,153	30%	31,511	17%	4,872	3%	2,613	1%	157	0%
1/4 mile or less	106,278	58%	70,595	38%	39,311	21%	12,837	7%	7,607	4%	515	0%
1/2 mile or less	123,011	67%	90,507	49%	55,779	30%	23,509	13%	18,166	10%	10,221	6%
1 mile or less	130,431	71%	102,270	55%	68,459	37%	36,791	20%	27,529	15%	15,783	9%
Over 1 mile	53,911	29%	82,072	45%	115,883	63%	147,551	80%	156,813	85%	168,559	91%
Total	184,342		184,342		184,342		184,342		184,342		184,342	

Source: Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

TABLE 12

**Number of New Hires in Industries Likely to Hire TCA Recipients
Distance from Bus Stops, by County Bus System
Baltimore Metropolitan Area, 1999**

Distance from Transit Stop	County Bus System							
	Annapolis Public Transportation		Carroll County Public Transportation		Harford County Transportation Service		Howard Area Transit Service	
	No. New Hires	% of Total	No. New Hires	% of Total	No. New Hires	% of Total	No. New Hires	% of Total
	Anne Arundel County	Total	Carroll County	Total	Harford County	Total	Howard County	Total
1/8 mile or less	5,545	18%	1,706	27%	5,372	52%	11,623	59%
1/4 mile or less	6,624	22%	2,263	35%	5,657	55%	13,477	68%
1/2 mile or less	7,157	23%	2,828	44%	6,635	65%	14,688	74%
1 mile or less	8,551	28%	2,835	44%	7,782	76%	15,388	78%
Over 1 mile	21,935	72%	3,600	56%	2,488	24%	4,451	22%
Total	30,486		6,435		10,270		19,839	

Source: Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

connecting the Odenton MARC station with local business parks. In addition, a bus service is proposed to connect Baltimore City residents with job opportunities along Route 40 in Harford County.

III: WHERE TCA RECIPIENTS HAVE FOUND JOBS

In this part of the report, we examine where TCA recipients in Baltimore City have found jobs, and whether these jobs were in the City or in the five suburban counties. We identify the industries where they found employment and the accessibility of the employers relative to public transportation routes, including the distance from recipients' homes to the nearest transit stop and the distance from the employer to the nearest transit stop. Finally, we provide estimates of the length of the bus trips made by these recipients, as well as the distance from home to bus stop and bus stop to work. Before presenting the results of the analysis, we provide a brief discussion of the methodology used to conduct this part of the study.

METHODOLOGY

The methodology used in this part of the report differs from that used in the CPHA November 1999, *Report on Access to Entry-Level jobs in the Baltimore region*. To our knowledge, the approach described below is unique in that it uses matched administrative data from two State agencies as a basis for the spatial analysis. The two data sources were DLLR's Maryland Unemployment Insurance wage record database, maintained by the Jacob France Center, and DHR's administrative database containing information on TCA recipients.

In order to determine where the recipients found jobs, records of adults receiving TCA in Baltimore City in 1998 were matched with 1999 employment records in the wage record database to create a linked dataset containing all adults in Baltimore City, who were receiving TCA in 1998, and who appeared as an employment record in 1999. We obtained matches for 19,042 of the TCA recipients out of a total of 28,713 adult recipients who had received cash assistance at some point in 1998⁹. In order to identify the industry in which the recipient was working, we excluded employers with multiple SIC codes. We also excluded employers with addresses in more than one jurisdiction, since it was assumed these were multi-establishment firms and it was therefore not possible to distinguish the address of the job location. In addition, employers with locations outside the region were not included.

Data from the linked dataset were used to map the locations of recipients' residences and the employer addresses. The data on mass transit route structures were obtained from the Maryland Department of Transportation. GIS was used to map the recipient households and employer locations.

⁹ When a recipient experienced multiple employment episodes during the year, the last employer was used so that there were no duplicates.

RESULTS

Table 13 lists the industries where the 19,042 TCA recipients found jobs. These jobs were primarily in the services and retail trade sectors, the sectors that we had already identified as being most likely to employ TCA recipients (see Table 3). More than one-quarter of the 1998 recipients that obtained employment in 1999, found jobs in the business services sector, 11% were employed in health service jobs, and 6% were in social services. Approximately one-quarter of the former recipients were employed in the retail trade sector, many of whom found jobs in eating and drinking places. Former recipients were also employed in food stores, miscellaneous retail, and general merchandise stores. A small proportion of former recipients (5%) were employed in public administration, while 4% found jobs in manufacturing (mostly food and kindred products). A few recipients (7%) found jobs in industries that we did not include in the list of industries where TCA recipients are most likely to be employed. These were: transportation, communication and public utilities; finance, insurance and real estate; construction; and, agriculture and mining.

Location of Jobs

According to the data from the matched file, about half the recipients found jobs in Baltimore City and about 30% found jobs in Baltimore County, approximately 17% were employed in Anne Arundel County, and the remainder found jobs in Howard, Harford and Carroll Counties. Our preliminary results suggest that welfare recipients tend to work close to where they live and generally are not competing for jobs in the suburbs. These data are, however, preliminary. Further efforts to improve the accuracy of employer locations and address the issue of multi-establishment reporting may change these results¹⁰.

Accessibility of Public Transportation to TCA Recipients Who Found Jobs

We were able to map the home addresses of 18,133 (95%) of the 1998 TCA recipients that were employed in 1999¹¹. The recipients were concentrated in the central areas of the City from east to west (see Map 13).

We calculated the distance between each recipient residence and the nearest transit stop. Table 14 shows the number of residences located within one mile and fractions of a mile from each type of transit stop. All the recipients lived within one-half mile of a bus stop; 98% were within one-quarter mile and 79% were within one-eighth

¹⁰ Because we have excluded multi-establishments, we may have introduced a systematic bias so that our matched data may not be representative of the entire population of Baltimore City welfare recipients that found jobs in the time period studied.

¹¹ It should be noted that we were not able to account for recipient address changes that might have occurred between the period of welfare reciprocity in 1998 and employment in 1999. This population does move so that some of the addresses may not have been current.

TABLE 13

**Baltimore City TCA Recipients, 1998
Employment by Industry in 1999, Baltimore Metropolitan Area**

	Employed Recipients	% of Total
Services	10,619	56%
Business Services	5,112	27%
Health Services	2,009	11%
Social Services	1,144	6%
Personal Services	380	2%
Hotels and Lodging Places	603	3%
Educational Services	529	3%
Retail Trade	4,870	26%
Eating and Drinking Places	2,188	11%
Food Stores	805	4%
Miscellaneous Retail	674	4%
General Merchandise Stores	554	3%
Apparel and Accessory Stores	387	2%
Public Administration	862	5%
Human Resource Programs	449	2%
Manufacturing	721	4%
Transportation, Communication, Public Utilities	621	3%
Finance, Insurance & Real Estate	501	3%
Wholesale Trade	360	2%
Nonclassifiable Establishments	275	1%
Construction	189	1%
Agriculture & Mining	24	0%
TOTAL	19,042	

Note: Industry subcategories may not add to the industry total because only those industry sub-categories that employed more than 300 recipients were listed separately.

Source: The Maryland Department of Human Resources; Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

TABLE 14

**Baltimore City TCA Recipients Employed in 1999
Distance from Residence to Mass Transit Stop, by Type of Mass Transit**

Distance from Transit Stop	Type of Mass Transit											
	MTA Bus		MTA Express Bus		MTA Limited Bus		Light Rail		Metro Subway		MARC Train	
	Number of Households	% of Total	Number of Households	% of Total	Number of Households	% of Total	Number of Households	% of Total	Number of Households	% of Total	Number of Households	% of Total
1/8 mile or less	14,298	79%	9,580	53%	0	0%	34	0%	166	1%	33	0%
1/4 mile or less	17,758	98%	14,395	79%	4,520	25%	232	1%	887	5%	105	1%
1/2 mile or less	18,133	100%	17,120	94%	7,538	42%	1,281	7%	3,051	17%	780	4%
1 mile or less	18,133	100%	18,047	100%	10,866	60%	4,650	26%	8,107	45%	3,500	19%
Over 1 mile	0	0%	86	0%	7,267	40%	13,483	74%	10,026	55%	14,633	81%
Total	18,133		18,133		18,133		18,133		18,133		18,133	

Source: Maryland Department of Human Resources; Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

mile of the nearest bus stop. Most were within one-half mile of an Express bus stop and 79% were within one-quarter mile of an Express stop. Less than half the recipients were within one-half mile of a limited bus stop. Few recipients lived close to a Metro or Light Rail station and fewer lived near a MARC train station.

These results were generally very similar to those for all TCA recipient households (those who found a job as well as those who didn't) shown in Table 6. The implications are that Baltimore City TCA recipients are heavily dependent on the MTA bus system for transportation to work, directly or through connections with train or subway services.

Proximity of Jobs to Public Transportation

We were able to map the employer addresses of 6,610 (35%) of the 19,042 jobs found by Baltimore City TCA recipients in 1999. The remaining 65% could not be mapped because 36% had out-of-state addresses, 14% had discrepancies or inconsistencies in their addresses, 10% had Post Office boxes in Maryland, 3% had incomplete addresses in Maryland, and 2% of the Maryland addresses were outside the Baltimore Metropolitan Area.

The proximity of these employers to public transportation in the metropolitan area is detailed in Table 15. Of the 6,610 employer locations that were mapped, 87% were within one-half mile of an MTA bus stop, 79% were within one-quarter mile and two-thirds of the employers were within one-eighth mile of a bus stop. Express bus stops were accessible from more than half of these jobs, with 58% of the employers within one-quarter mile of an express bus stop. One-third of the employers were within one-quarter mile of a limited bus stop.

Fewer employers were located near to train stops: 12% were within one-quarter mile of a Metro station and 8% were within one-quarter mile of a Light Rail stop. Hardly any employers were within walking distance of a MARC train station, although 25% were within one mile. This could be due to the fact that a number of the employers were located in downtown Baltimore and could have been close to Camden Yards or Penn Station. Very few of the employers were located close to a county bus stop (see Table 16). According to our preliminary data, less than 5% of the recipients found jobs in Howard, Harford and Carroll Counties.

Distance from Residence to Employer

For each of the recipients who found a job, we mapped the distance from the recipient's residence to the location of the employer. We were able to map both home and work addresses for only 6,262 of the 19,042 Baltimore City recipients that found jobs in 1999.

TABLE 15
Employers Hiring Baltimore City TCA Recipients
Distance from Mass Transit Stops, by Type of Mass Transit
Baltimore Metropolitan Area, 1999

Distance from Transit Stop	Type of Mass Transit											
	MTA Bus		MTA Express Bus		MTA Limited Bus		Light Rail		Metro Subway		MARC Train	
	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total
1/8 Mile	4,446	67%	3,146	48%	1,639	25%	160	2%	276	4%	8	0%
1/4 Mile	5,253	79%	3,863	58%	2,163	33%	521	8%	789	12%	25	0%
1/2 Mile	5,767	87%	4,803	73%	2,927	44%	1,263	19%	1,350	20%	610	9%
1 Mile	5,925	90%	5,318	80%	3,691	56%	1,968	30%	2,196	33%	1,642	25%
Over 1 mile	685	10%	1,292	20%	2,919	44%	4,642	70%	4,414	67%	4,968	75%
Total	6,610		6,610		6,610		6,610		6,610		6,610	

Source: Maryland Department of Human Resources; Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

TABLE 16
Employers Hiring Baltimore City TCA Recipients
Distance from Bus Stops, by County Bus System
Baltimore Metropolitan Area, 1999

Distance from Transit Stop	County Bus System							
	Annapolis Public Transportation		Carroll County Public Transportation		Harford County Transportation Service		Howard Area Transit Service	
	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total	Number of Employer Locations	% of Total
1/8 mile or less	14	0%	12	0%	34	1%	172	3%
1/4 mile or less	21	0%	12	0%	35	1%	193	3%
1/2 mile or less	21	0%	12	0%	55	1%	205	3%
1 mile or less	44	1%	12	0%	56	1%	213	3%
Over 1 mile	6,566	99%	6,598	100%	6,554	99%	6,397	97%
Total	6,610		6,610		6,610		6,610	

Source: Maryland Department of Human Resources; Maryland Department of Transportation;
Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

The distance traveled from home to work ranged from one mile to 35 miles (see Table 17). Almost one-quarter of the recipients that we mapped found jobs within three miles of their homes. More than one-half of the recipients lived six miles or less from their jobs, while 71% worked nine miles or less from their homes. Eleven percent of the recipients we mapped found jobs that were between 15 and 35 miles from their homes.

Almost all the recipients who found jobs lived within one-quarter mile of the nearest bus stop (see Table 18), and 80% of the recipients worked for an employer that was one-quarter mile or less from the nearest bus stop (see Table 19).

TABLE 17

**Distance by Bus from Home to Work
1998 Baltimore City TCA Recipients Who Found Jobs
in Baltimore Metropolitan Area, 1999¹**

Distance by Bus	Number of Recipients	% of Total
1 to 3 miles	1,374	22%
3 to 6 miles	1,901	30%
6 to 9 miles	1,203	19%
9 to 12 miles	761	12%
12 to 15 miles	417	7%
15 to 18 miles	307	5%
18 to 21 miles	161	3%
21 to 24 miles	64	1%
24 to 27 miles	35	1%
27 to 35 miles	39	1%
Total	6,262	100%

¹The France Center only had sufficient data to map both home and work address for 6,262 of the 19,042 employed TCA recipients.
Source: Maryland Department of Human Resources; Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation

The Jacob France Center, University of Baltimore, June 2001

TABLE 18

**Distance from Home Address to Bus Stop
For the Mapped 1998 Baltimore City TCA Recipients Working in 1999¹**

Distance from Home to Bus Stop	Number of Recipients	% of Total
0 to 1/16 mile	2,831	45%
1/16 to 1/8 mile	2,085	33%
1/8 to 1/4 mile	1,228	20%
1/4 to 1/2 mile	118	2%
Total	6,262	100%

¹The France Center only had sufficient data to map both home and work address for 6,262 of the 19,042 employed TCA recipients.
Source: Maryland Department of Human Resources; Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation

The Jacob France Center, University of Baltimore, June 2001

TABLE 19

**Distance from Bus Stop to Work Address
For the Mapped 1998 Baltimore City TCA Recipients Working in 1999¹**

Distance from Bus Stop to Work	Number of Recipients	% of Total
0 to 1/16 mile	3,357	54%
1/16 to 1/8 mile	898	14%
1/8 to 1/4 mile	782	12%
1/4 to 1/2 mile	414	7%
1/2 to 3/4 mile	135	2%
3/4 to 1 mile	125	2%
More than 1 mile	551	9%
Total	6,262	100%

¹The France Center only had sufficient data to map both home and work address for 6,262 of the 19,042 employed TCA recipients.
Source: Maryland Department of Human Resources; Maryland Department of Transportation; Maryland Department of Labor, Licensing and Regulation
The Jacob France Center, University of Baltimore, June 2001

IV. CONCLUSION

The results of the spatial analysis presented in this report indicate that inadequate transportation does appear to be a barrier to welfare recipients in Baltimore City seeking employment in the suburban counties in the Baltimore Metropolitan Area (Baltimore, Anne Arundel, Howard, Harford and Carroll Counties). Although 84% of the area's TCA recipients currently reside in Baltimore City, two-thirds of the available entry-level jobs in 1999 in industries that have historically hired welfare recipients were in the suburban counties. Since most TCA recipients do not have regular access to reliable cars, they are generally dependent on public transportation for the commute to work.

Baltimore City has an extensive bus system, which provides regular, express and limited services to most areas of the City. We found that almost all the TCA recipients lived within easy walking distance (one-quarter mile or less) of a bus stop. The Metro Subway and Light Rail each serves a narrow corridor through the City so that very few recipients lived within walking distance of a Light Rail stop or Metro Subway stop. There are, however, some bus services that connect with the Light Rail and Metro Subway, which may improve accessibility. The MARC commuter train provides limited access to the suburbs and is expensive. Only 1% of the recipients lived within walking distance of a MARC train station.

For the most part, the suburbs are not readily accessible by public transportation originating in Baltimore City. The MTA bus routes extend into the area immediately surrounding the City in Baltimore County. However, there are no services to northern Baltimore County, Harford County, and Carroll County. There are virtually no services to Howard County, and MTA buses cover only the northern corner of Anne Arundel County with one route to Annapolis. County bus services are very limited and generally do not connect with the MTA bus system, except for some parallel stops with the Annapolis bus system. The Light Rail provides access to a narrow corridor in central Baltimore County and northern Anne Arundel County. The Metro Subway serves a narrow corridor in northwestern Baltimore County and the MARC commuter train has limited stops in Baltimore County, Harford County and Anne Arundel County.

As a result, many of the employers in the suburbs were not located near MTA bus stops or other mass transit services from the City. Almost one-third of all the employers that we mapped were more than one mile from the nearest MTA bus stop and over 80% were more than one mile from the nearest train or subway stop. There were no MTA bus stops in Howard, Harford and Carroll Counties, where 18% of the employers with new hires were located.

Fifty-five percent of the employers that we mapped were within easy walking distance of an MTA bus stop. A relatively high proportion of these employers were concentrated in Baltimore City or neighboring areas of Baltimore County, with some in Anne Arundel County. Very few of the employers were within easy walking distance of the Light Rail, Metro Subway or MARC train stations.

In Howard and Harford Counties, more than half the employers that we mapped in these counties were within walking distance of county bus stops, but there were almost no links with the Baltimore transit system. In Carroll County, 42% of the employers in the county that we mapped were within walking distance of county bus stops but there were no links with MTA bus routes. In Anne Arundel County, 22% of the employers that we mapped were within one-quarter mile of an Annapolis bus stop, which had parallel stops with the MTA bus from Baltimore City.

We also conducted a preliminary analysis to identify where Baltimore City TCA recipients found jobs relative to public transportation routes. It should be noted that we were only able to map the employer addresses for 35% of those who found jobs. Almost all recipients lived within walking distance of a bus stop and almost 80% of the employers where they found jobs, and that were mapped, were within easy walking distance of an MTA bus stop. Very few of the recipients lived close to the Light Rail, Metro Subway or MARC train and few found jobs with employers that were located close to these transit systems. Hardly any recipients found jobs with employers that were accessible using one of the county bus systems.

For those recipients that found jobs, where we were able to map both residential and employer addresses, almost one-quarter had a bus trip of three miles or less. More than one-half had a bus trip of six miles or less, while 11% had a bus trip of 15 miles or more. Almost all those that we mapped lived within one-quarter mile of a bus stop and 80% had a one-quarter mile walk or less from the bus stop to their employer. Nine percent of the recipients that we mapped found jobs with an employer that was more than one mile from the nearest bus stop.

More work is needed to improve the ability to map employer locations in the matched data set showing where TCA recipients found jobs. Therefore, any comparison of the results from this data set, with the analysis of where job opportunities for TCA recipients are located, is preliminary. Given this caveat, a preliminary comparison of the results from the two data sets indicates that TCA recipients are not taking advantage of job opportunities in suburban counties that lack public transportation. In general, TCA recipients found jobs in industries that we had identified as most likely to hire TCA recipients. However, although two-thirds of the job opportunities that we identified were in the suburban counties, half of the jobs taken by TCA recipients were in the City. Preliminary results showed that about 30% of the jobs were in Baltimore County and about 17% were in Anne Arundel County, similar to our estimates of where the job opportunities were located. But preliminary estimates showed only 3% found jobs in Howard, Harford and Carroll Counties combined, although we had identified 20% of the job opportunities in these counties. Baltimore City, the southern half of Baltimore County and parts of Anne Arundel County are served by public transportation. Howard, Harford and Carroll Counties are generally not served by public transportation from Baltimore City. The implications are that inadequate public transportation poses a barrier to TCA recipients in Baltimore City finding jobs in suburban counties, all of which have experienced strong employment growth, in contrast to declining employment

in Baltimore City. Again, we reiterate that these conclusions are preliminary and more work still needs to be done to improve the ability to map the locations of employers hiring TCA recipients.