Welfare Reform
Impacts on the Public Housing Program:
A Preliminary Forecast

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FOREWORD

When Title I, Temporary Assistance for Needy Families (TANF), of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 placed time limits on the receipt of welfare assistance, the future income of public housing residents who were AFDC recipients was no longer assured, with many now required to find jobs. Because public housing rents are tied to tenant income, a portion of housing authority rent receipts will become equally uncertain. In turn, the effects on Federal budget outlays, through operating subsidies currently provided by the Performance Funding System, will also be uncertain. As directed by the House Appropriations Committee, this report provides a preliminary look at those effects of welfare reform.

The report focuses on a small number of housing authorities which are diverse with respect to welfare reform program rules, their rent and tenant selection policies, the demographic characteristics of the residents mandated under TANF to find jobs, and the economic conditions of their surrounding metropolitan areas. By focusing on a variety of housing authorities, it was possible to assess the role these variations play in forecasting potential future outcomes.

This report responds to a request from the House of Representatives Committee on Appropriations for the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies. We anticipate that it will be a useful tool for Congress, the Department, housing authorities and others in gaining a better understanding of the potential impacts of welfare on the public housing program.

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Special thanks go to staff of the Virginia Department of Social Services (DSS) at its Headquarters in Richmond as well as its branch offices in Richmond and Norfolk. This includes Carol Baron and Mike Theis (at Headquarters), Michael Evans and Pamela Turner (at the Richmond branch), and Suzanne Puryear and Marianne Teasley (at the Norfolk branch). The administrative data and program information they provided are especially appreciated. The contributions of staff at the State Offices of Human Services in Ohio, Texas, and California are also gratefully acknowledged. Invaluable assistance was also provided by many community-based, non-profit service providers including many child care providers, planning experts, market observers, job-skills providers, academicians, and others in all eight of the cities covered in this report.

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EXECUTIVE SUMMARY

This study projects the impacts of welfare reform on tenant incomes and resulting rent revenues at eight public housing authorities (HAs) in four states. These HAs were chosen for their geographic and economic diversity as well as for contrasts in the welfare reform systems implemented by the four states, the major elements expected to influence the impacts of welfare reform. By 2002, virtually all housing authorities and their residents will be affected by welfare reform. The impacts will be generated by those residents who receive TANF benefits and who are required to seek employment according to the welfare reform programs enacted by the states. These residents are referred to here as "mandated public housing residents;" there are non-public housing TANF recipients also "mandated" under reform programs and they are clearly differentiated in this study.

Welfare reform impacts on public housing tenant incomes and HA rent revenues can be expected to vary considerably, depending in large part on: who and how many households are mandated, their potential for finding employment, their contributions to rent revenues and on the mitigating actions taken by the HAs, such as charging minimum rents. Changes in HA rent revenues can impact the federal budget, since the estimated need for operating subsidies is currently linked to such revenues under the public housing Performance Funding System (PFS).

Two housing authorities in Virginia are examined here in particular detail because they were the object of a broadly based data collection effort which included field visits. However, to provide a basis for comparison, as well as some geographic scope for estimating the impact of welfare reform, the study also introduces information on the six other HAs in three states, made possible through telephone conversations and file transfers. Because of the site visits, information on the support network is available for Norfolk and Richmond, which allows for a richer understanding of the potential impacts of welfare reform. Labor market information is available only at the metropolitan level for the Virginia, California and Texas study HAs, but it is provided at the neighborhood level for the three study HAs in Ohio, where a special contracted effort was undertaken. In the Ohio study sites, neighborhood-level information made it possible to consider how many metropolitan area jobs are actually available to inner-city public housing residents after accounting for spatial and transportation barriers and for competition from other entry-level job seekers.

In three of the four study States, time limits will not result in families losing assistance until 2000. In Texas, some families will lose assistance in 1999. To project potential public housing impacts of welfare reform, it is necessary to make assumptions about the success of mandated public housing residents finding jobs before their time limited benefits end. In this study, two principal assumptions provide an upper and lower bound. For the upper bound, or more optimistic estimate, it is assumed that mandated public housing residents will be as successful finding employment as the unassisted people they resemble. For the lower bound, or

more conservative estimate, it is assumed that the success of mandated residents is a function of both how many jobs there will be and how many people will compete for them when TANF benefits end; success, therefore, is limited to what the labor market can absorb.

It is further assumed that the current numbers and demographic characteristics of mandated residents at the study HAs remain constant through the time when TANF benefits cease. This resulting static analysis does not give the total impact but rather a range of possible impacts at HAs similar to the study HA at the present time, dependent upon estimates of how much each mandated public housing resident might contribute to changes in rent revenue. In addition, the analysis does not necessarily reflect total future impacts at the study HAs to the extent that current mandated populations or local economies change over time.

Most housing authority residents are not TANF recipients and, therefore, do not receive benefits which are tied to an obligation to seek employment. This study found that mandated public housing residents represent roughly one-quarter of all public housing residents at 7 of the 8 housing authorities. In Los Angeles, nearly 2 of 5 public housing families were also TANF recipients. Though state plans differ, welfare reform will require all TANF recipients to participate in work related activities and places time limits on the receipt of cash assistance. At some point in the welfare reform timeframe, these households will have to replace their TANF benefits with income from wages (see Table ES-1).

For all eight housing authorities, it is estimated that there are typically three or four times more entry-level job seekers than entry-level jobs in the metropolitan labor markets. At the neighborhood level, mandated residents sometimes face even greater odds because they live in areas where not enough entry-level jobs are in reasonable commuting range, and because large numbers of other entry-level job seekers, including the unemployed, are also concentrated in these areas. Inadequate education and job experience, inadequate transportation to jobs, and difficulty paying for child care also represent substantial obstacles to work.

Mandated tenants contribute between nine and 30 percent of total rent revenues in the eight housing authorities. In some housing authorities, up to 60 percent of mandated households will have to find full-time employment in order for the HAs to maintain current tenant rent contributions. For other housing authorities, however, few, if any, of the affected households will have to find employment to maintain HA rent contributions. The latter is the result of a combination of low rents paid by mandated residents and the use of minimum rents by HAs. Using the more conservative estimate, between less than 10 to about 60 percent of housing authority residents are actually estimated to find an entry-level job (see Table ES-1).

Depending upon which assumption is adopted, the eight housing authorities could either find themselves collectively a little over $5 million ahead or almost $4 million behind their current rent revenue position, if the numbers of mandated residents and their demographic distribution remain at their current levels. Annual revenues from mandated residents at the eight HAs amount to more than $14 million annually. Hence, using conservative estimates of work participation, these eight housing authorities would experience a decrease amounting to about 27 percent of their current rent receipts from mandated households (see Table ES-2).

Table ES-1
WORK PARTICIPATION

Housing Authority	Mandated Public Housing Residents As A Percent Of All Residents	Breakeven Work Participation**	Estimated Work Participation Rates of Mandated Public Housing Residents*	
			Conservative	Optimistic
Richmond	26	48	61***	58
Norfolk	25	28	28	42
Los Angeles	37	61	16	62
San Francisco	24	45	37	63
Cleveland	23	22	9	45
Columbus	25	0****	17	67
Toledo	25	37	8	40
Dallas	25	12	24	72

* Mandated public housing residents are those required to seek employment according to state welfare reform rules.
** The breakeven work participation rate shows the proportion of mandated residents who would have to work in order for the HA to experience no change in rent revenue.
*** Richmond, with relatively few entry-level job seekers, is the only site in which the conservative approach is not lower than the optimistic approach.
**** This is due to minimum rents and very low average rents paid by mandated residents.

At four of the HAs in the study, the increase in work participation as a result of welfare reform appears likely under the more conservative assumption to produce increases in annual tenant rent revenues of between $350,000 and $800,000--or increases of between 30 and 98 percent over current rent revenues at these housing authorities. At the other four HAs, decreases in rent revenues would likely occur, with estimates ranging from about $340,000 at the low end to more than $4 million at the high end. These represent decreases of between 15 and 60 percent over current rent revenues for mandated residents at these housing authorities.

Under current law, HAs are allowed to charge tenants a minimum rent of up to $50, regardless of what proportion of tenant income this represents. Charging minimum rents mitigates some of the rent revenue loss from mandated tenants unable to replace their assistance income. However, families who reach time limits and suffer substantial declines in income may have great difficulty in continuing to pay this minimum rent.

For illustrative purposes, this study considers a "worst case" scenario. In this unlikely event, all non-working mandated TANF participants would fail to get jobs. Without minimum rents in this worst case, annual rent revenues decrease by between $405 to $1,640 per mandated tenant at the study HAs. The minimum rent requirement replaces about $250 of this drop in rent revenue at the six housing authorities which have chosen a $25 monthly minimum rent. For the two HAs choosing $50 minimum rents, about $550 is saved per mandated tenant. Although charging higher minimum rents clearly can reduce an HA's loss of rent revenue, there is a major

tradeoff to consider. As already noted, there will be some number of residents who find it difficult or impossible to pay higher minimum rents if they are unsuccessful in finding jobs to replace lost welfare assistance.

Table ES-2
ESTIMATED IMPACT
ON ANNUAL RENT REVENUES

	Per Mandated Resident		Total Impact, In $1,000's and Pct. Of Rent Revenue	
	Conservative	Optimistic	Conservative	Optimistic
Norfolk	-398	-121	-357 (-31%)	-109 (-10%)
Richmond	+697	+632	+807 (+60%)	+732 (+54%)
Los Angeles	-1,216	+19	-4,031 (-62%)	+62 (<1%)
San Francisco	-253	+551	-338 (-15%)	+736 (+33%)
Cleveland	-191	+347	-349 (-30%)	+632 (+55%)
Columbus	+439	+1,329	+392 (+98%)	+1,187 (+297%)
Toledo	-527	+46	-400 (+55%)	+35 (+5%)
Dallas	+307	+1,501	+403 (-51%)	+1,967 (+250%)
			$-3,873 (-27%)	$+5,242 (+36%)

Despite local efforts that help compensate for some of the obstacles faced by public housing residents affected by welfare reform, the cash income of the majority of TANF participants is likely to be eliminated according to the more conservative estimates of work participation. These are households who are mandated to find jobs, are projected to be unsuccessful and will lose their income source when time limits are reached. At the same time, those TANF recipients who do find jobs are projected to double their current income levels, based upon the assumption that mandated residents will earn the same wage as current, non-mandated, working residents of public housing. As a result, greater income disparities among public housing tenants are expected in the wake of welfare reform.

This study has attempted to project the financial impacts of welfare reform on a sample of diverse public housing authorities. It finds large variation in the expected impacts on housing authority revenues, due in part to the variation of the proportion of HA residents who are affected and by variations in local labor market conditions. It is difficult to project these findings to the full 1.3 million unit public housing program because of the tremendous variations in state welfare policies, on local labor market conditions and on public housing authority tenant selection policies.

WELFARE REFORM IMPACTS ON THE PUBLIC HOUSING PROGRAM: A PRELIMINARY FORECAST

Title I, Temporary Assistance for Needy Families (TANF), of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, effectively ended the Aid To Families With Dependent Children program (AFDC)—a long-standing entitlement to unconditional, long-term welfare assistance based only on the income eligibility of households with minor children. In its stead, households are now eligible for relatively short-term income assistance conditional on participation in work activities. In fact, even before TANF, some states obtained waivers to AFDC requirements and made the receipt of benefits conditional upon work participation; many of them have chosen to continue their waiver programs instead of shifting entirely to Federal rules under TANF.

The effects of state and Federal welfare reform actions can have reverberating impacts on all programs that traditionally have taken welfare income into account. This includes all HUD multifamily programs that require beneficiaries to contribute a portion of their incomes for rent. In particular, it includes HUD's Public Housing program for which the near-term impacts of welfare reform could be significant for program beneficiaries, administering Public Housing Authorities (HAs), and the Federal government.

In many HAs, substantial numbers of residents have been, or soon will be, required to make a transition from welfare to work and, as a direct result, face the end of welfare assistance entirely as time limits on their receipt are approached. Some will have a successful job search and the potential to increase their total income while others may choose to ignore welfare reform requirements and/or drop-out of TANF programs. Such potential income changes would affect an important component of HA income, tenant contributions to rent, either by placing rent revenue at risk as welfare reform requirements take hold and benefits cease, or perhaps by increasing rent revenues if substantial numbers of program participants find jobs which improve their total incomes. Moreover, the Federal government would also be affected by changes in operating subsidies which compensate HAs for operating expenses not covered by tenant contributions to rent, with higher subsidy costs as incomes and consequently rent revenues decrease, or conversely with savings in Federal expenditures if overall rent revenues increase. The extent to which incomes and rent revenues increase or decrease as a result of welfare reform is the focus of this study. Any operating subsidies provided under the Department's program rules would have corresponding changes.

It is recognized that welfare reform can be expected to have a significant impact not only on the Public Housing Program but on other HUD housing programs as well. The Public Housing Program seemed a reasonable starting point for assessing welfare reform because of the potential impact on the Federal budget and because public housing is not a portable subsidy, meaning that most residents face limited options since they are likely to loose housing assistance

if they move to take advantage of job opportunities because they are required to seek work. The assessment methodology utilized here may have the potential to be modified and extended to other HUD programs.

THE SCOPE OF THE STUDY

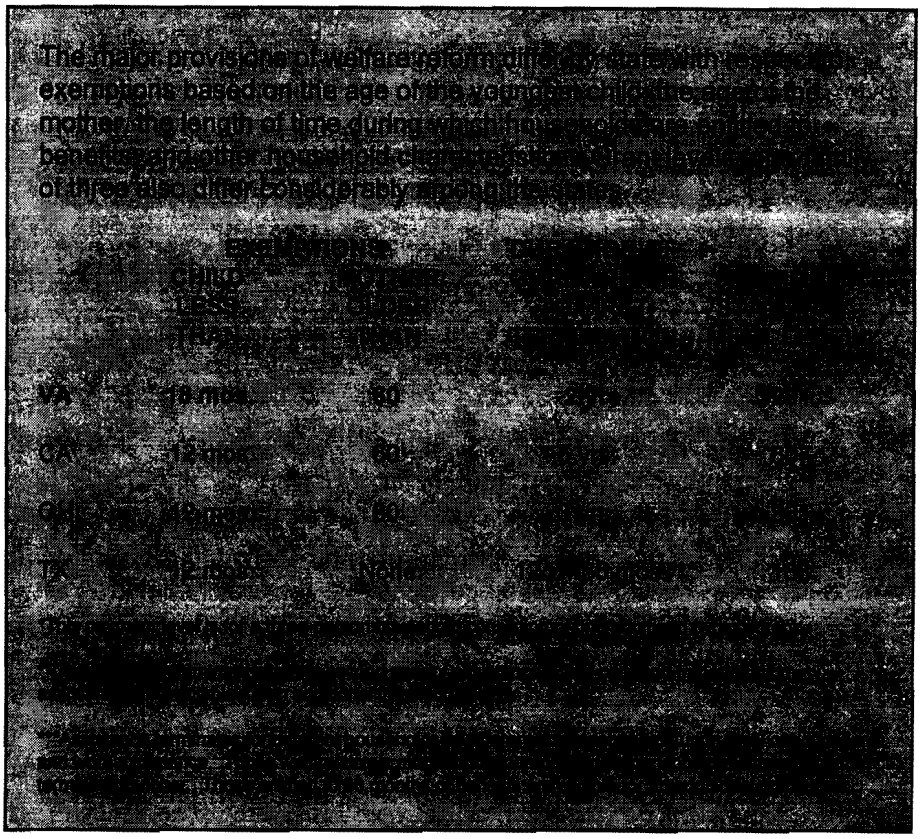
This study was undertaken to offer a preliminary assessment of how housing authorities, their residents, and the Federal government will be affected by welfare reform and to describe the local contexts in which it will unfold. The housing authorities studied here include the Richmond Redevelopment and Housing Authority (RRHA) and the Norfolk Redevelopment and Housing Authority (NRHA) in Virginia; the Cuyahoga County (Cleveland), Columbus, and Lucas County (Toledo) Metropolitan Housing Authorities in Ohio; The City of Los Angeles and San Francisco Housing Authorities in California; and, the Dallas Housing Authority in Texas.

The two housing authorities in Virginia, RRHA and NRHA, are examined here in particular detail because they were the object of a broadly based data collection effort which included field visits by staff of HUD's Policy Studies Division. However, to provide a basis for comparison, as well as some geographic scope for estimating the impact of welfare reform, the study also introduces information on the six other authorities in three states, made possible through telephone conversations and file transfers. Because there is value in comparing different housing authorities within the same state, an unsuccessful attempt was also made to gather information from another Texas housing authority.

The descriptions provided in this report cover a range of features including the size of housing authority populations subject to welfare reform requirements and the demographic characteristics of these residents relevant to their ability to find entry-level jobs. It also includes: the rent revenues at housing authorities (especially the component of revenue likely to be affected by reform); the rent and tenant preference policies of housing authorities; the number and characteristics of those with whom public housing residents must compete for jobs; the existence of entry-level jobs and their location; the wage rates associated with entry-level jobs; and the support networks in place to facilitate work, including child care, transportation, and job readiness preparation.

A. Issues Involving Job Participation

The key to determining the impacts of welfare reform in this study is determining the changes in household income as a result of moving from welfare assistance to possible employment. But, public housing residents required to work have special challenges because they usually did not choose where to live and, therefore, did not account for such practical work-related considerations as proximity to transportation, employment centers, and day care.



Consequently, when considering the likelihood of obtaining a job, their situation is fundamentally different from households against whom they will compete for entry-level jobs, including many with portable subsidies, who have more housing location options. Lack of housing choice, however, might not pose a problem for public housing residents if there were an adequate supply of jobs within reach. But, many jobs in the metropolitan area are not in reasonable commuting distance and hence, are basically inaccessible. And, even though jobs may be accessible, to the extent that public housing residents live within the same commuting zones as other competing for the same pool of jobs, greater competition likely means that fewer jobs would be actually available.

The problems of job access are exacerbated by other obstacles facing public housing residents when searching for jobs. These include insufficient education and skills to be competitive in the job market, lack of affordable child care, and others. Regardless, TANF and alternative State plans under TANF contain time limits and make assistance to residents conditional on work participation.

B. Sources of Information

Some of the information and data required for this study are available for all of the housing authorities included here, but the support network information is available only for Norfolk and Richmond because on-site visits were made there. Labor market information is available only at the metropolitan level for the Virginia, California and Texas study HAs; it is provided at the neighborhood level for the three Ohio housing authorities. The latter were the focus of cooperative agreements that the Office of Policy Development entered into with Case Western Reserve University in Cleveland and the University of Wisconsin-Milwaukee.

A key role in the study was played by participating housing authorities which provided current data covering not only heads of households, but also every family member in residence. In addition, several state agencies responsible for administering the new TANF legislation augmented housing authority information not only for welfare recipients in public housing but also for the remainder of their caseloads in the study sites of interest. This was accomplished through a matching process that permitted the state agencies to identify which of their records related to public housing residents and which did not. The results were the assembling of a richer dataset for all welfare recipients than would have been possible with any other methodology, and the identification of the major population groups that public housing residents would be competing with for jobs as a result of welfare reform.

Information on current and future HA rent revenues and the ability of housing authorities to bolster tenant rent contributions through preference policies, minimum rents, etc., are major components of the assessment of the impacts of welfare reform. The study also draws on information about the work participation patterns of households who do not receive welfare but otherwise resemble public housing residents. Because welfare assistance will soon no longer be available to public housing residents, the work participation levels of unassisted households who resemble them are used as the starting points to estimate the future work participation rates of target populations.

To assess the impacts of welfare reform, information on the location of entry-level jobs relative to the location of public housing residents and other entry-level job seekers is used. In the case of the three Ohio HAs, the additional information on job location gathered through the cooperative agreements has permitted a more fine-tuned assessment of impacts. In these places, neighborhood-level information makes it possible to consider how many metropolitan area jobs are actually available to inner-city public housing residents after accounting for spatial and transportation barriers and for competition from other entry-level job seekers.

C. Assumptions Underlying Study of Welfare Reform Impacts

A major component of this study is a set of estimates of job participation among public housing residents required by the welfare program to find jobs in the study sites and, stemming from these, estimates of the impacts of welfare reform on housing authority rent revenues. Several key assumptions are necessary in order to make these estimates.

This study develops two methods to estimate the job participation rates of mandated residents of public housing developments. The first, "job seekers-to-jobs ratios," relies on predictions of job growth in the study sites in order to estimate the likelihood that mandated residents will identify entry-level jobs and successfully compete for them. This assumes the accuracy of current predictions of available jobs at some future point in time. It also assumes that when welfare benefits terminate and mandated residents enter the job market, the number of entry-level competitors they will face mirrors the number currently existing.

The second method for estimating job participation rates uses 1990 Bureau of the Census Public Use Microdata Samples (PUMS) data and logistic regression models to predict the job participation behavior of mandated public housing residents. This method assumes that mandated public housing residents will mirror the work participation rates of similar people, in the same places, represented in PUMS. The study emphasizes the more conservative estimates that the two methods yield, but presents a range of possible outcomes using both. The conservative approach provides an upper bound on the likely negative effects on housing authority rent revenues.

In this study, the full impacts of welfare reform are assumed to occur in the termination year. Any significant income loss to tenants and revenue loss to housing authorities will become manifest after the welfare reform clock runs out. The clock will run out at different times in different housing authorities. In Virginia and Ohio, the income and revenue impacts of welfare reform should begin to become apparent in the year 2000. In California, these impacts should occur by 2002. In Texas, the impacts could come as early as next year because of the fact that different mandated residents in that state are being held to different work participation timetables, and some have been given just one year to move to work. Federal welfare reform legislation allows for a five-year assistance period to mandated households. However, states have the option of discontinuing assistance for an interval before the full five years of assistance has been received. After the first three years of assistance to mandated households, the Virginia and Ohio waivers programs require a two year interval without assistance before assistance can be resumed. As welfare reform runs its course, other states may decide to apply different timetables to different groups of mandated households, though remaining within Federal guidelines. In these two States, the estimated impacts that are reported in this study are assumed to occur in the year 2000. Obviously, any program decisions to slow the clock for some or all mandated households would reduce the impact in a given year. Therefore, in Texas, although the estimated impacts reported in the sections that follow are assumed to occur in 1999, in fact the impact will be spread out over a several year period.

Finally, it is assumed that, when TANF benefits are terminated, the number and demographic composition of mandated public housing residents will be the same as the current mandated populations. In fact, the number and the mix of characteristics may be different.

D. The Richmond And Norfolk Cases

Norfolk and Richmond Virginia were chosen as the first places to study and as the field sites because they are both convenient to Washington and they have features that make them attractive when considering the context and impacts of welfare reform. To begin with, RRHA and NRHA are large enough for impacts to register; RRHA manages 4,368 units of conventional public housing and NRHA manages 3,575 units. Furthermore, each currently has a substantial number of residents who will be affected by welfare reform. At RRHA there are 1,158 such residents mandated under TANF to find jobs and at NRHA there are 898 mandated residents. Moreover, because Richmond and Norfolk represent contrasting economies within the State--Richmond's the relatively stronger and Norfolk's the relatively weaker--they provide an

Richmond's the relatively stronger and Norfolk's the relatively weaker--they provide an opportunity for exploring the role of the local economy in the impact of welfare reform. Their convenience was particularly important at the initial stage of the study when the value of pursuing a variety of sources and types of information was still being evaluated.

Virginia's reform provisions make it an interesting State to study in depth. It, like many other states, has enacted its own welfare reform legislation, Virginia Initiative for Employment not Welfare (VIEW), which sets the basic parameters of the State program and takes precedence over many features of TANF. Because its waiver limits assistance to two years of cash and one year of non-cash benefits in any three consecutive years (out of a maximum five years in which welfare assistance can be received), the welfare program that is affecting RRHA and NRHA residents is representative of programs that are more stringent than the Federal program; the latter allows participating households to receive assistance for up to five consecutive years. While Federal law allows states to exempt single parents with children under 12 months of age from the work requirement, VIEW is more generous exempting households with children under eighteen months. And, while TANF requires individuals to go to work no later than two years after receiving assistance, VIEW is more stringent requiring all newly enrolled participants who are not otherwise exempted to participate in work activities within 90 days of receipt of assistance and all current households to participate as soon as they enter into agreements of personal responsibility, as all who are mandated must do.

Mandated households typically comprise about one-quarter of all public housing households within study housing authorities.

	Total Households	Percent With AFDC	Percent of Total With AFDC and Mandated*
Richmond	4,398	35	26
Norfolk	3,575	32	25
Los Angeles	8,991	43	37
San Francisco	5,840	29	24
Cleveland	8,074	26	23
Columbus	3,565	29	25
Toledo	[illegible]	34	25
Dallas	5,287	29	25

*Mandated includes all recipients not exempted by virtue of disability, age of head, age of child, or any other applicable exemption (up to the extent the available data permitted).

E. Report Structure

The discussion which follows contains six sections. The first covers labor supply and deals with the number of public housing residents who will be looking for jobs, those who will be competing with them for entry-level jobs and the characteristics that affect employability. Labor demand--the number of entry-level jobs available in the Richmond, Norfolk and other labor markets is then discussed. This is followed by a discussion of the adequacy of support services, including child care and transportation, that facilitate work participation. Next is an assessment of how welfare reform will affect housing authority rent receipts and potential impact

on HUD's PFS payments to housing authorities. A discussion of the impact of welfare reform on tenant income then follows. Finally, some potential policy issues are raised in a concluding section.

I. LABOR SUPPLY

The impact of welfare reform on housing authorities and their residents is, in some part, a function of how well residents who are required to find jobs will succeed. There are two main components used in estimating work participation. The first, described in this section, is the number of people who are in the labor market (the supply of labor) seeking jobs for which public housing residents might qualify. The second is the availability and location of entry-level jobs, i.e. labor demand, discussed in Section II.

The labor supply pool consists of TANF recipients in public housing, and also other welfare recipients and unemployed people not receiving assistance but nonetheless searching for entry-level positions (see the introductory section on Page 4 for important assumptions concerning the competitor groups). The human capital of residents and their competitors--their educational attainment, vocational training, previous work experience and other characteristics--should figure prominently in whether job searches are likely to be successful. These characteristics are considered in this section, which also compares the number of mandated public housing residents to how many other entry-level job seekers they have to compete with in trying to find a job before TANF benefits are terminated.

A. Employability Of Mandated Residents

In four of the five housing authorities for which such information is available, the majority of mandated residents lack a high school diploma and, therefore, may face serious obstacles obtaining even entry-level jobs requiring that credential. Likewise, among all the housing authorities studied, only a minority of mandated residents have recent or current work experience. However, as an alternative route to job preparedness, some mandated residents have received vocational training.

Educational attainment, or some close equivalent, is linked to the job opportunities open to mandated residents,[1] those TANF recipients required to participate in work activities as a result of welfare reform. Obviously, the higher the educational attainment, the larger the pool of jobs for which residents can compete[2] and a high school diploma is a necessary credential for

[1]There are several terms used throughout this report that are fully interchangeable. These include "mandated residents," "mandated households," "mandated heads of households," and others. These all refer to the head of household, in public housing, receiving TANF payments, who must participate in work activity according to TANF or state waiver welfare reform requirements. In a few cases, the reference is made to "total persons in a housing authority." This, too, refers only to heads of household, but without regard to the receipt of TANF or the requirement to work. Finally, whenever reference is made to the group of household heads in public housing but not receiving welfare, they are always referred to as "non-mandated residents." In a few cases, the child of a head of household is included among the "mandated residents" because he or she lives with a parent, receives TANF for his or her own child, and is subject to the work requirements of TANF or a state waiver plan.

[2]Among others, Ellwood and Bane have shown that level of education influences the jobs and wages attainable by welfare recipients and, therefore, is linked to welfare dependence. David T. Ellwood and Mary Jo Bane, *Welfare Realities: From Rhetoric to Reform*, Harvard University Press, Cambridge, MA.

some entry-level occupations.[3] At RRHA, less than forty percent of the heads of households affected by welfare reform are high school graduates (see Table 1) and 12 percent have less than a 9th grade education. At NRHA, while 43 percent of those required to participate in work activities have a high school diploma, six percent have less than a 9th grade education. Those with minimal education could face significant handicaps when seeking jobs that require basic literacy, especially because educational attainment, in terms of years of school completed, is thought to overstate the functional skill level of residents.[4]

Besides education, work experience is another requirement for some entry-level jobs. At both RRHA and NRHA, however, only a minority of mandated residents would currently meet this requirement. In both, about ten percent of mandated residents are currently working. More of those enrolled in the JOBS program held some kind of job,[5] but about one-quarter held jobs among those who are now mandated to participate in work activities.

Table 1
PERCENT OF MANDATED HOUSEHOLDS HEADS WITH AT LEAST A HIGH SCHOOL EDUCATION, AMONG THOSE WHO RESIDE:

	In Public Housing	Not In Public Housing
[illegible]	39	52
[illegible]	43	52
Los Angeles	58	63
[illegible]	44	51
[illegible]	NA	NA
[illegible]	NA	NA
[illegible]	NA	NA
[illegible]	40	NA

[illegible] of participants in the California Work Pays [illegible] Data Archive & Technical Assistance, [illegible] that all sample members are [illegible] provisions.

Finally, vocational training can often provide an alternative path to job preparedness. But emphasizing job search, while placing time limits on it, as both TANF and Virginia's reform program do, leave little opportunity for vocational training. Therefore, such training would have had to be acquired prior to the implementation of TANF and the State reforms. At RRHA, about 36 percent of mandated residents were previously enrolled in the

[3] The Bureau of Labor Statistics and the Dictionary of Occupational Titles link occupations with typical measures of skill and vocational training. In both classifications, there is a clear connection between greater occupational reach and higher educational attainment.

[4] On average, Richmond's residents are judged to function at the 8th grade level. AFDC recipients in the suburban counties are believed to function at a somewhat higher level than City recipients, on average closer to the 10th grade level.

[5] The JOBS program is operated by the State Department of Social Services. It provides job readiness training, referrals to various job training opportunities, educational opportunities, and other components. Some of the participants are public housing residents but more are not.

JOBS program where they received training and/or assistance finding a job. At NRHA, a somewhat larger group, 46 percent, were enrolled in JOBS.

B. The Competition For Jobs

Among all of the housing authorities studied, mandated residents make up only a small fraction of the entry-level job pool. The competitor/resident ratios vary from a low of 9:1, the case in Richmond, to a high of 102:1 in Los Angeles. In Richmond, Norfolk and Los Angeles, where information on education is available, public housing residents have the disadvantage of less education than some of those with whom they will be competing, other TANF participants who do not live in public housing.

There are about 2,150 TANF recipients in the City of Richmond not living in public housing who are required to participate in work activities and who will be competing with residents for entry-level jobs in the Metropolitan Statistical Area (MSA) labor market (see Table 2). These households constitute about two-thirds of TANF recipients in the City.[6] In addition, there are about another 1,450 mandated households in the remainder of the MSA competing with HA residents for jobs. Altogether, RRHA residents could find themselves competing with about 3,600 other TANF recipients from the City and surrounding areas.

Other TANF recipients are not the only persons with whom mandated RRHA residents will be competing for entry-level jobs. Reflecting an MSA unemployment rate of 3.3 percent, there were about 16,800 people, according to March 1997 CPS data, who were unemployed and looking for work in the Richmond area. According to the CPS, for the Richmond MSA, 38 percent of unemployed job seekers have a high school diploma or less and, therefore, constitute the segment who might be competing with mandated residents in the metropolitan area labor market. Thus, the 1,158 mandated public housing household heads in Richmond could be competing with 6,400 unemployed entry-level job seekers. In total, mandated RRHA residents could find themselves competing with 10,000 others as shown in Table 2.[7] Thus, each public housing resident could be competing with close to nine other MSA residents for entry-level jobs in the MSA labor market (see Table 3).[8] Of course, if there were sufficient jobs in an area, the fact that there are a large number of competitors may not be significant.

In the City of Norfolk there are 1,750 mandated households not living in public housing who will be competing for jobs with public housing residents along with 4,350 TANF recipients from the surrounding counties. Unlike Richmond, the bulk of TANF participants in the Norfolk

[6]Information provided by The Virginia Department of Social Services.

[7]To the extent that entry-level jobs are tagged by gender, some male entry-level job seekers will not be competing in the same labor pool with female entry-level job seekers.

[8]The Bureau of Labor Statistics defines labor market as the Metropolitan Statistical Area.

MSA come from outside of the central city. In addition, the Norfolk MSA had an unemployment rate of 4.6 percent, according to the CPS, with 34,600 unemployed persons. The CPS data for the Norfolk MSA shows 67 percent of unemployed job seekers have a high school diploma or less. Taking this as the proportion of the unemployed competing with mandated residents, then 23,150 unemployed persons could be competing in the same job pool with them, a much larger number of unemployed competitors than in Richmond. In total, the 898 mandated NRHA residents could find themselves competing with 29,250 others for entry-level jobs, swamping them by a ratio of about 33-to-l.

Table 2
ENTRY-LEVEL JOB SEEKERS IN RICHMOND AND NORFOLK

	Richmond	Norfolk
Mandated Public Housing Residents In The City	1,158	898
Non-Public Housing Mandated Households In The City	2,150	1,750
All Mandated Households In Remainder Of MSA	1,450	4,350
Unemployed Entry-Level Job Seekers In MSA*	6,400	23,150
Total Outside Of Public Housing	10,000	29,250

*[illegible] entry-level job seekers in Richmond and [illegible]. Numbers are rounded.

Source: The Virginia Department of Social Services. Data are as of [illegible].

The larger number of competitors that mandated public housing residents face in the Norfolk area is partly the consequence of the unique labor pool found in the area. There are large numbers of military retirees and the dependents of people in the military both willing to work part-time and for lower wages because they are cushioned by government salaries and pensions, either their own or those of other household members. The ebb and flow of military dependents into and out of the area is said to contribute 1.0 to 1.5 percentage points to the unemployment rate.[9] In addition, the weaker economy of Norfolk also contributes to the fact that mandated residents will face more job competition than in Richmond.

Enumerating those who are likely to compete with mandated residents for entry-level jobs does not fully convey the odds facing public housing residents. There appear to be relative advantages due to education for competitors both inside and outside of TANF. About 40 percent of RRHA's and NRHA's mandated public housing residents have a high school diploma, compared with about one-half of mandated non-public housing residents (see Table 1). Therefore, the mandated non-public housing residents may have a slight competitive advantage when seeking entry-level jobs. Similarly, over one-half of Richmond's non-welfare female

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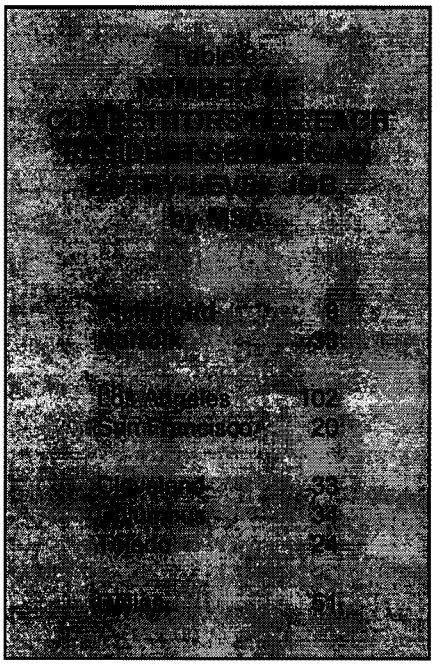
[9]According to staff at the Virginia Employment Commission.

competitors for entry-level jobs have a high school diploma and two-thirds have a high school education in Norfolk, perhaps giving each group a competitive advantage over the public housing residents in their respective cities.[10]



When it comes to having received vocational training in connection with the JOBS program, mandated households who were not public housing residents have the advantage. While less than one-half of NRHA's mandated public housing residents were enrolled in JOBS, almost three-quarters of mandated non-public housing have been enrolled in the JOBS program. In addition, it is possible that any TANF recipient could have received vocational training through other public or private programs.

[10]U.S. Bureau of the Census, Public Use Microdata (PUMS), 1990.

II. LABOR DEMAND

In addition to the size and characteristics of the labor pool within which mandated public housing residents will compete, their success replacing welfare income with income from employment will depend on the existence of sufficient entry-level jobs matching their skills. This section describes the local economies including indicators of their ability to provide such jobs. Among the indicators are unemployment rates, job growth rates, and the number of people seeking entry-level jobs compared to the number of jobs that might be available (see the Assumptions section on Page 4 for important assumptions concerning estimation of jobs). A special feature of the analysis is looking at job availability at the neighborhood level. Neighborhood analysis rests not only on the number of jobs estimated to exist but also on where they are located and their "accessibility"--how long it would take to reach such jobs by whatever mode of transportation is available.

A. The Economies Of Richmond and Norfolk

In both Richmond and Norfolk, the services, retail and administrative sectors are viewed as potential sources of most of the new job opportunities for entry-level job seekers, public housing residents and others. But some of the largest developments on the horizon in the two cities are not likely to directly benefit public housing residents because the jobs they will generate require a level of education or training that many public housing residents do not have. In San Francisco, Columbus, Dallas and Richmond, unemployment rates are below four percent. Dallas and Los Angeles are predicted to lead in terms of job growth.

The economy in which RRHA residents will be competing for entry-level jobs is diverse. The City is the headquarters of eight Fortune 500 and an additional eight Fortune 1000 companies. It is also home to the Fifth District Federal Reserve Office, is the Capitol of the Commonwealth of Virginia, and is Virginia's leading manufacturing, distribution, finance and university center. But none of this may be of much direct benefit to mandated public housing residents since their education and skills may not qualify them to participate in any of these sectors of the economy. Nor are there clear opportunities associated with Richmond's recent entrance into the burgeoning semiconductor industry. Memory chips and microprocessors will be produced at the largest new facilities coming to the area, one involving Motorola and one a joint venture between Motorola and Siemens. These two are expected to employ about 6,500 people in jobs with an average salary of $35,000. But in general, TANF recipients are not viewed as qualified for these jobs which will require at least a high school diploma and, in many cases, more advanced education or specialized training. In some cases, employers may rise to the challenge and prepare some TANF recipients for higher-skilled jobs through a variety of training efforts.

However, there could be some indirect benefit since service industry growth usually accompanies major economic developments. This growth includes the hotels and motels and restaurants with jobs that do not require a high school diploma. Furthermore, in some cases welfare recipients may benefit when people who will be hired by Motorola and Siemens vacate

lower-level jobs they currently hold. In fact, there may be a large number of people in this category. A recent advertisement for 150 job openings at Motorola/Siemens drew 15,000 applications, many from people who are already employed.

In any case, a fair number of vacated jobs can be expected in the retail sector, which presently has an annual turnover rate of between 200-300 percent.[11] Public housing residents and other assistance recipients are viewed as potential candidates for these jobs.

The economy in Norfolk is not as diverse, has not grown as rapidly as that of Richmond and is particularly sensitive to fluctuations in defense spending. Therefore, it has been especially hurt by recent cutbacks in this sector. The City has also lost better paying and more secure civilian jobs including 1,800 civilian shipyard jobs. According to economic development specialists in the City, those jobs which have been created in recent years offer wages below those of the better paying defense jobs and, many of these new jobs are considered transient.

The strength of the metropolitan area economies in which the study housing authorities are located varies in terms of unemployment rates and job growth projections that do not always track each other.

	UNEMP. RATE*	PROJECTED ANNUAL JOB GROWTH** (percent)
Richmond	3.3	1.1
Norfolk	4.6	1.1
Los Angeles	7.2	1.8
San Francisco	3.2	1.0
Cleveland	5.5	1.2
Columbus	3.2	1.6
Toledo	5.0	1.1
Dallas	3.9	2.4

* March 1997, not seasonally adjusted. BLS, Local Area Unemployment Statistics, Washington, DC

** These projections account for both new job growth as well as job separations and replacements. The projections for each MSA are based on estimates that extend beyond the year 2000, in some cases, to 2005.

On the other hand, a better economic future is projected for the Norfolk area.[12] An influx of military personnel is expected as base closings elsewhere cause transfers of personnel to Norfolk. And, despite defense cutbacks, the Norfolk metropolitan area still remains the site of the world's greatest concentration of permanent naval installations. In addition, there are some major new developments slated for the military sector including the Oceana project, which, when built, will become the Navy's largest fighter plane base and will employ 5,100 persons. The Gateway 2000 company will also offer many new jobs in computer assembly. Expected expansion of foreign-based firms and increased port activity should also add to the employment base. In addition, the area has a large and growing tourist industry.

There are several other projects on the horizon that may provide more opportunity. One of these is a big new retail development within the City of Norfolk--the MacArthur Center Mall.

[11]The Retail Merchant's Association.

[12]Economic Assumptions for The United States and Virginia: Calendar Years 1997, 1998, and 1999. Virginia Employment Commission. Economic Information Services Division.

Although such large-scale retail development is now usually suburban, the City had an empty downtown site large enough to accommodate this development. The new Mall, a one million square foot venture in which NRHA has an interest through its redevelopment arm, is expected to provide about 3,000 jobs. Though some of the new jobs would be appropriate for entry-level job seekers including residents of NRHA, the City has no formal arrangement obligating the mall developers to set aside any of these jobs for City residents, let alone those to be affected by welfare reform.

In general, the services sector, which includes hospitals, hotels, and food service establishments, is viewed as the single largest source of entry-level jobs in Norfolk.[13] In particular, a major medical center, though not in the immediate downtown area, is close to some neighborhoods where public housing is located.

How much of this new development will benefit public housing residents is an open question. As was the case with the Motorola jobs in Richmond, few of the new jobs associated with the Oceana project are viewed as appropriate for a TANF population. Even in the stronger sectors of the Norfolk economy, many jobs have not traditionally gone to women or to those without technical skills. These include jobs associated with the shipbuilding industry and those involving the shipment of goods through the Port of Hampton Roads, one of the most active ports in the world.

B. Entry-Level Job Availability

In all of the metropolitan areas included in this study, there are more people including public housing residents, seeking entry-level jobs than there are jobs for them to fill. However, the Richmond metropolitan labor market alone is expected to have enough jobs for the majority of these job seekers. In other cities, public housing residents and other entry-level job seekers are expected to face a more difficult job search, with entry-level jobs for not much more than one-quarter of the job seekers. Among the housing authorities studied, entry-level job seeker-to-job ratios vary from a low of 1.6 job seekers for every job in Richmond, to a high of close to 13-to-1 in Toledo. In the cases of Richmond and Norfolk, the entry-level job seeker-to-job ratio is more favorable for residents of the former, not because the job pool is larger--it is in fact smaller than in Norfolk--but because public housing residents in Richmond face many fewer competitors for the jobs that do exist. More favorable ratios holding out greater job prospects for mandated residents may reflect fewer competitors, as in Richmond, or may reflect more entry-level jobs.

[13]The three occupations accounting for the majority of placements in the ESP/JOBS program were housekeeping/janitorial, food service, and nurses aid/companion.

When the two Virginia housing authorities and the Virginia Department of Social Services refer to the entry-level jobs for which they think their residents or clients might qualify, they are referring to jobs that ordinarily do not require specific previous experience nor more than a high school diploma if, in fact, they have any educational requirements. Indeed, on-the-job training is provided in many of the entry-level occupations available in Richmond and Norfolk eliminating the need for previous specific experience. However, in a major component of the entry-level new job market, the administrative sector, most jobs, including most clerk jobs, ordinarily require a high school diploma or the equivalent.

Table 4
RATIOS OF JOB SEEKERS TO JOBS

	Richmond	Norfolk
Mandated Residents	1,158	898
Competitors	10,000	29,250
Total Job Seekers*	11,150	30,150
Entry-Level Jobs**	6,750	8,400
Ratio of Job Seekers To Entry-Level Jobs	1.7:1	3.6:1

* Totals do not add because of rounding.

** In general, one-third of all available jobs can be classified as entry-level, and this proportion is reflected in the job projections given here. Numbers are rounded.

In contrast, assembly line workers making such products as computers or televisions often do not require a diploma.[14] Such jobs may have fixed routines while jobs in the administrative sector may require the kinds of verbal and quantitative skills associated with a high school diploma. Undoubtedly, there will be a small number of mandated residents who will qualify for more than entry-level jobs, but these are more than offset by those with very minimal educational attainment who will have difficulty qualifying for any entry-level job.

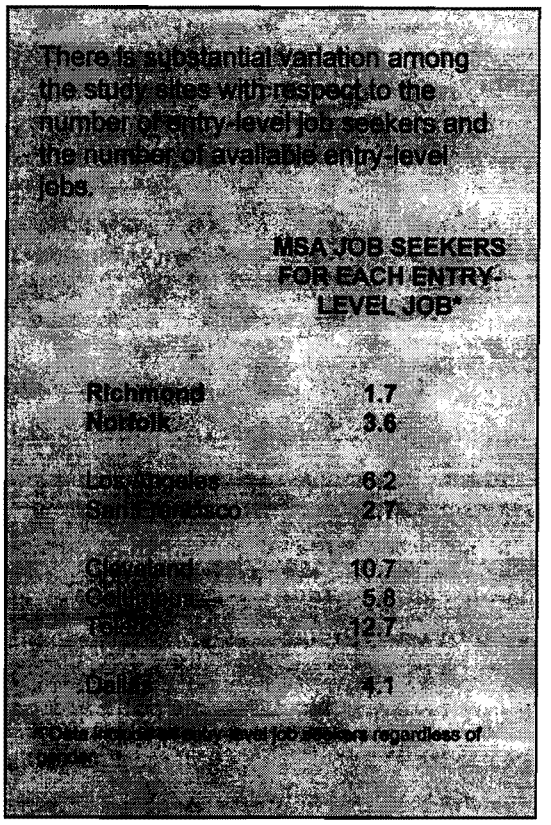
In the year 2000, when currently mandated RRHA residents will have exhausted the three years of TANF assistance they are entitled to in any five-year period, job opportunities will be available in the sectors of the local economy that have traditionally absorbed entry-level job seekers. The annual number of new retail sector job slots in the MSA is projected to be around 2,700. In the same year, the average number of new service job openings is projected to be about 3,500 and there are expected to be about 3,600 jobs in the administrative support and clerical area.[15] Overall, there are projected to be 20,600 jobs available in the MSA in the year 2000. Since about one-third of all openings are entry-level jobs,[16] there will be about 1.7 entry-level jobs seekers for every entry-level job in the MSA (see Table 4).[17]

[14]Mid-Atlantic Guide to Information on Careers. The District of Columbia, Maryland, Virginia, and West Virginia State Occupational Information Coordinating Committee.

[15]In the State as a whole, occupations projected to have the largest number of openings through the year 2005 include sales, cashiers, office clerks, janitors and cleaners, waiters and waitresses, food preparation workers, and nursing aides and orderlies -- all entry-level jobs employing large numbers of women. The greatest growth is projected to occur in the services sector with a 40 percent gain from 1990 to 2005.

[16]This is the proportion derived from empirical studies covering different cities and states. See, for example, Virginia L. Carlson and Nikolas C. Theodore, *Are There Enough Jobs: Welfare Reform and Labor Market Realities*, The Chicago Urban League, 1995; Elizabeth McGregor, "Entry Level Jobs," *Occupational Outlook Quarterly*, Winter 1990-91; *Cutting Wages by Cutting Welfare: The Impact of Reform on The Low-Wage Labor Market*, Economic Policy Institute, 1995.

Overall, the Norfolk labor market is expected to produce about 25,600 jobs per year through the year 2000. The great majority of these will be from turnover, not from new job growth. In the sectors that are expected to provide most of the entry-level opportunities for TANF recipients, there are projected to be 3,000 retail, close to 2,000 administrative support, and over 4,000 service sector job openings in the year 2000. If about one-third of all MSA projected openings are for entry-level jobs, there would then be about 8,453 entry-level openings in the year 2000.[18] In this case, there would be 3.6 entry-level job seekers for each entry-level job. Part IV below discusses some of the fiscal implications of these ratios.

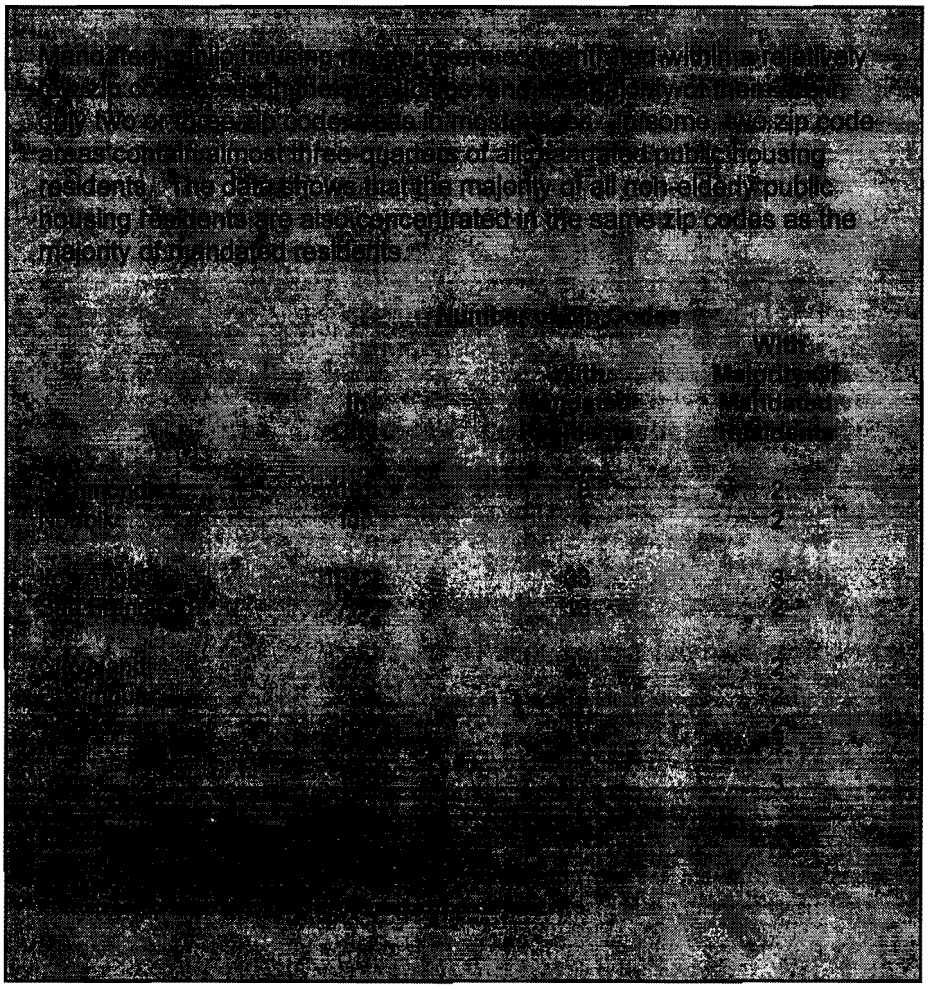


C. Job Accessibility At The Metropolitan and Neighborhood Levels

Before the beginning of the decade, a majority of workers were employed in jobs located outside of the central cities where five of the eight housing authorities are located. Because of the trend toward greater suburbanization of jobs, metropolitan job seeker-to-job ratios may overstate actual job accessibility for mandated city residents. In fact, neighborhood level ratios of job seekers to jobs which account for the obstacles of time and distance and the competition of nearby job seekers show that the odds are even further stacked against mandated residents living in certain city neighborhoods. In Toledo, Columbus, and Cleveland, where such information was available for this study, there is a very large number of other entry-level job seekers competing for the limited pool of jobs that lie within reasonable access of some neighborhoods where mandated residents are concentrated. In some of these neighborhoods, being female and relying on public transportation adds to the difficulty of finding a job. On the other hand, there are some neighborhoods where mandated residents are concentrated in which the odds of finding an entry-level job are at least as good as they would be anywhere in these cities.

[17] These ratios assume that all entry-level jobs will be open to female public housing residents. Census occupational data indicate that most occupants of some entry-level jobs are male. If such jobs are removed from the job growth projections for Richmond, as few as 6,000 of the total of 10,000 entry-level job openings may be available to women. Obviously, the ratio of job seekers to job openings is affected by reductions in both the numerator and the denominator. At the entry-level, fewer people will be competing with female public housing residents but fewer jobs will also be available to them.

[18] *Industry and Occupational Employment Projections: 1990-2005*, Virginia Employment Commission.



A large majority of mandated public housing residents in Richmond are concentrated in just two City zip code areas, both with high levels of poverty and low levels of economic activity.[19] Total jobs there and elsewhere in the City of Richmond declined by over six percent between 1979 and 1994, and the decline is expected to continue through the year 2005.[20] During the same period, total employment in the Richmond MSA grew by over 34 percent and is expected to grow by another 15 percent or so by 2005. The greatest job growth is expected to occur in Henrico and Chesterfield Counties.[21] The City has lost jobs to other jurisdictions in the MSA in almost every industrial and occupational category. About sixty percent of entry-level jobs are located outside of the City.[22] As a result, the search for entry-level jobs among mandated residents of these neighborhoods has been made all the more difficult because many of these jobs have moved away from the City and are not easily accessible by public transportation.[23]

[19]The degree of concentration of mandated public housing residents in Richmond is also true of residents at other housing authorities, and could have implications for their employment prospects. Paul Ong of the University of California found that more Section 8 program participants in the Los Angeles area had jobs than those in public housing. One explanation provided by Ong is that those with a Section 8 subsidy have greater residential choice and mobility. Paul Ong, "Subsidized Housing and Work Among Welfare Recipients, unpublished paper, Department of Urban Planning, School of Public Policy and Social Research, University of California, Los Angeles, CA, February 12, 1996.

[20] John Accordino, *Trends in The Richmond Economy: Industry and Labor Force Analysis*, Department of Urban Studies and Planning, Virginia Commonwealth University, January 1995. Prepared for the City of Richmond Department of Community Development.

[21]Between 1979 and 1994, the number of jobs in the City of Richmond decreased from 187,076 to 175,613. Job growth in the MSA went from 355,105 to 476,999. Another 78,000 jobs are expected in the MSA by 2005.

[22] Virginia Employment Commission.

[23]The concept of spatial mismatch has been used to describe the disjunction between where jobs are now located as a result of economic restructuring and where job seekers live. The construct was first proposed by John Kain in 1968 and has since been elaborated by many others. John Kain, "Housing Segregation, Negro Employment, and Metropolitan Decentralization," *Quarterly Journal of Economics*, 82: 195-97, 1968.

It is not simply the fact that the City has slipped in its share of MSA jobs that is significant, but that it has lost jobs which are appropriate to entry-level job seekers. The loss of retail and manufacturing enterprises in Richmond has particularly reduced the number of less skilled jobs available there. Although there are a number of suburban malls in the Richmond area, much of the core retail sector that used to be in the City no longer exists and the last remaining department store is now boarded up. Many of the retail sector jobs expected to open in the Richmond area will require commuting to suburban job sites. The two industries in which the City has increased its share of metro-wide employment, tobacco and apparel, are industries where overall employment is steadily falling.[24]

Spatial mismatches are, of course, not an issue to the extent that residents are able to get jobs that are close to home. In this respect, the areas in which the Norfolk public housing developments are located are not without opportunity. Although the majority of residents have incomes below the poverty level, the fact that these areas are poor has helped them to obtain Enterprise Community status. This status is expected to stimulate economic development which will benefit community residents, including public housing tenants. Even before the Enterprise Community designation, these areas already had hundreds of enterprises including restaurants, cleaners, hair salons, etc. Furthermore, the developments are within a mile of the downtown area where new development is taking place and where entry-level jobs exist.

The majority of new job growth in the metropolitan area, however, is occurring outside of the City of Norfolk in places such as Virginia Beach, Chesapeake and Newport News. This includes most new entry-level jobs at hotels, motels and restaurants slated for development in the metropolitan area to support its burgeoning tourist sector.[25]

Scholars have not always found evidence supporting the hypothesis, but a multiplicity of such elements characterizes the situation of public housing residents living in inner-city developments. In all of the cities in this study, the trend is toward metropolitan job deconcentration. Furthermore, inner-city residents seeking suburban jobs are often racial minorities living in racially concentrated areas where information about suburban jobs is often restricted. In addition, these residents have less access to automobiles, and even if they were able to reach suburban jobs by public transportation, they would be spending more time commuting for lower wages. One characteristic of the great majority of mandated residents is the fact that they are female. Although the literature finds general support for the mismatch hypothesis, it focuses almost exclusively on the mismatch problems of minority men or minorities as a group. However, the gender difference could be as critical as some of the other elements that characterize the situation of public housing residents, because entry-level jobs that traditionally employ women may be located in different parts of the metropolitan area than entry-level jobs that traditionally employ men. Depending upon the proportion of jobs that are traditionally occupied by women and on where these jobs are located, spatial mismatch may be more significant for women than for men, or vice versa. Hanson and Gender provide information and maps which illustrate that men and women in the Worcester, Mass. area are indeed employed in different locations in the metropolitan area, a fact that has implications for their access to jobs. Susan Hanson and Geraldine Pratt, *Gender, Work, and Space*, Routledge, New York, 1995.

[24]According to John Accordino, the City's loss of competitive share has several causes. The loss of retail, construction and some service enterprises is a result of continuing population movement from the City to surrounding jurisdictions as well as faster growth overall outside the City. The loss of manufacturing may be a result of a lack of appropriate sites within the city for business expansion as well as perceived problems of doing business in the City. John Accordino, *Trends in The Richmond Economy: Industry and Labor Force Analysis*, Department of Urban Studies and Planning, Virginia Commonwealth University, January 1995. Prepared for the City of Richmond Department of Community Development.

[25]This assessment was provided by the Hampton Roads Planning District Commission.

No doubt reflecting these urban/suburban shifts that have occurred in metropolitan (MSA) employment, it should not be surprising to find that mandated residents concentrated in particular inner-city neighborhoods are faced with even more difficult odds than MSA-level ratios of job seekers to jobs would suggest.[26] This is certainly the case in Toledo, Columbus and Cleveland where neighborhood level information is available.[27] And, it would be the case in the other cities as well for the simple reason that MSA ratios of job-seekers to jobs assume a metropolitan labor market that is a perfectly porous sorting system for connecting job seekers anywhere in the area to jobs anywhere in the area. And, even at the metropolitan level, there is an inadequate supply of entry-level jobs for the entry-level job seekers in these cities. In Toledo, Cleveland and Columbus, there are about 13, 11, and 6 entry-level job seekers, both male and female, respectively, for each entry-level job (see Sidebar page 17) and 12, 12, and 6, respectively, female job seekers for each entry-level job open to women (see Table 5).

There is substantial variation among study sites with respect to the urban/suburban distribution of total employed persons.

	Percent of Employed Working in Central City*
Richmond**	25
Norfolk	78
Los Angeles	49
San Francisco	45
Cleveland	28
Columbus	52
Toledo	56
Dallas	48

* These data are Bureau of the Census, Labor Force Characteristics, 1990. Given the trends during the 90s it is likely that smaller percentages of people now work in central cities.

** It is likely that the "central city" employment in the Norfolk MSA is spread over the central cities of Norfolk, Virginia Beach, and Newport News.

Neighborhood-level ratios take into account the obstacles of time and distance encountered by the residents of particular neighborhoods as well as the competition they face from others competing in the same restricted entry-level job pool.[28] They do so by incorporating a reasonable commuting time into the estimates. Jobs that cannot be reached within such a time period are regarded as not realistically accessible to mandated residents and other entry-level job seekers living in particular neighborhoods. They do so as well by factoring in the total number of entry-level job seekers from the same and nearby neighborhoods who could be competing for the same pool of jobs and siphoning off some that might otherwise go to mandated residents. Given economic divisions within cities, it is not surprising that large numbers of other entry-level job seekers, including the unemployed, share the same commuting zone as mandated entry-level job seekers.[29]

[26]Research has shown that access to neighborhood jobs in the Los Angeles area -- jobs in close proximity to where recipients reside -- is negatively related to the percentage of the working age population who rely on welfare. Evelyn Blumenberg and Paul Ong, "Job Accessibility and Welfare Usage: Evidence from Los Angeles," to be published in, *The Journal of Policy Analysis and Management*, Fall 1998.

[27]Neighborhood level ratios have been provided under a Cooperative Agreement between HUD's Office of Policy Development and Research and researchers at Case Western Reserve University and The University of Wisconsin. See Appendices A and B for details of the methodology used to provide neighborhood level ratios.

[28]For the purposes of this analysis, neighborhoods are designated by zip code areas.

[29]Under the Cooperative Agreement, a 45 minute commute time was the window within which job accessibility was assessed. This time

For the most part, female entry-level job seekers living in the Toledo, Columbus, and Cleveland neighborhoods where mandated residents are concentrated will have an even more difficult job search than if they had access to the entire metropolitan area job market.[30] While there are 13 entry-level job seekers for each entry-level job at the MSA level, the odds of finding an entry-level job are even lower in three of the four Toledo neighborhoods where residents are concentrated.[31] Likewise, in three of the five Columbus neighborhoods where residents are concentrated, female entry-level job seekers face greater odds than they would if all entry-level jobs in the MSA were accessible to them. And in Cleveland, in three of the four neighborhoods where mandated residents are concentrated, neighborhood ratios of seekers to jobs are higher. In the Cleveland neighborhood with the greatest concentration of mandated residents, there are a staggering 76 female entry-level job seekers for each entry-level job while at the MSA level there are 12 such job seekers for each entry-level job. On the other hand, in all three cities, there is a neighborhood in which female entry-level job seekers face better odds than the MSA ratios would suggest.

The probability that mandated residents living in particular neighborhoods can find entry-level jobs is reduced to the extent that most rely on an inadequate public transportation system and many suburban jobs are inaccessible by public transportation within a reasonable commuting time. Because of the fact that the population of entry-level job seekers consists mainly of low-income mandated residents and people who are unemployed, the analysis above of neighborhood-level seeker-to-job ratios was based on the assumption that all entry-level job seekers will use public transportation.[32]

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interval reflects the time in transit, that is, the time it would take to go from the center of a neighborhood, in this case the neighborhoods where mandated public housing residents are concentrated, and an employment destination. The interval does not incorporate the time it would take to make ancillary trips that might be required before the journey to work is begun. Thus, it does not include the time it would take to drop children off at day care centers or baby sitters. Nor does it include the time it would take to walk from one's house to a bus stop or train terminal.

[30] In Cleveland, two methods have been used to compute seeker-to-job ratios. The distance ring method and the CTPP contour method. For details of these procedures, see Appendix B. In general, the CTPP method is far more time consuming to carry out, although it could be more precise. It is for this reason that one city--in this case Cleveland--was used as a test for comparing the two methods. Using either method, neighborhood ratios are generally larger than metropolitan ratios, as would be expected. The two methods do produce different rank ordering of ratios across the City neighborhoods. Assuming access to cars, the CTPP neighborhood ratios are higher than those generated by the distance ring method. However, assuming dependence on public transportation, neighborhood ratios generated by the ring method are higher in two of the four Cleveland neighborhoods of interest.

[31] The ratios are for neighborhoods which together include at least three-quarters of the mandated population, listed in order of concentration.

[32] It would be fair to expect that most often those with access to automobiles can cover more distance and, therefore, reach more jobs within a given time interval. Although there is disagreement about the proportion, it is generally believed that the majority of mandated residents are dependent on public transportation. Surveys done of other low-income households indicate that they too are often dependent on public transportation. (See p. 21) Because of this high rate of dependence on public transportation, metropolitan and neighborhood ratios assuming the use of public transportation are more often reported here. If it were possible to get more accurate information on the proportion of mandated residents and other entry-level job seekers with access to cars, it might be possible to weight the ratios to incorporate the mode of transportation utilized.

However, the assumption that all entry-level job seekers used an automobile was also considered to see if it made a difference in job participation rates. Although access to an automobile confers an advantage to the residents of some neighborhoods, this is not true in all cases. In Cleveland, assuming all commute by car, job seekers are distinctly better off in one neighborhood where mandated residents are concentrated, but in the others, their probability of finding a job does not seem to depend on how they commute. In three Columbus neighborhoods, use of a car increases the probability of finding an entry-level job, but in two other neighborhoods using public transportation confers an advantage. Assuming that all mandated residents use autos instead of public transportation, there is one Toledo neighborhood in which mandated residents have the advantage. In the cases where public transportation does as good or better than autos in transporting people to jobs, the system may take more efficient routes.

Table 5*
NEIGHBORHOOD LEVEL WORKER-TO-JOB RATIO
(Expressed as Number of Seekers For Each Job)

	MSA**	Selected Neighborhoods***				
		1	2	3	4	5
Cleveland****	12					
Autos/Women		41	19	9	15	
Bus/Women		76	18	9	17	
Bus/Unrestricted*****						
Columbus	6					
Autos/Women		5	10	9	10	2
Bus/Women		6	15	7	15	1
Bus/Unrestricted		6	14	6	14	1
Toledo	12					
Autos/Women		17	7	17	13	
Bus/Women		17	6	18	21	
Bus/Unrestricted		14	5	14	16	

* The Appendix to this report contains full descriptions of the methods employed by university-based researchers working with HUD, under Cooperative Agreements, to identify available jobs, their locations, and the locations of mandated residents and their competitors in three Ohio housing authorities. Table values are from the ring method.

** The jobs referenced here are restricted to those likely to be available to women. Likewise, all job seekers are women. They are different from the ratios found in Table 4, which are unrestricted by gender.

*** The zip code areas in which mandated residents live. Neighborhoods "1" through "5" are, collectively, those in which three-fourths of the mandated population is concentrated, by order of concentration. Even though these are the neighborhoods where mandated residents are concentrated, they vary in the size of their mandated populations.

****Using the CTPP contours method, the ratios for the four Cleveland neighborhoods are: 46,16,12,and 18, respectively, for women using public transportation.

*****Data permitting occupational segmentation by gender were not available for Cleveland.

Dependence on public transportation is not the only obstacle that mandated residents could face. To the extent that occupational segmentation by gender reduces the number of jobs available to women more than it does jobs available to men, women would face greater odds.[33] It is historically the case that women have been underrepresented in certain occupational categories. But, at the MSA level, men seem to have only a very small advantage in the three Ohio cities, and in Columbus, this is true at the neighborhood level. Just as there are some

[33]For the purposes of this analysis, it was assumed that jobs in which fewer than 15% of the occupants were women were not open to women. This assumption reflects historical patterns of segmentation. Obviously, non-traditional training programs for women and other changes in hiring practices could reduce segmentation over time.

occupations where women are underrepresented, there are others where men are underrepresented and these seem to balance out, at least for the residents of these Columbus neighborhoods. However, in all four of the Toledo neighborhoods where mandated residents are concentrated, men seem to have an advantage over women. In these Toledo neighborhoods, the location of jobs that are more frequently held by women may make them inaccessible to female job seekers.

Like metropolitan ratios, the probability of finding an entry-level jobs for residents of a given neighborhood come down to how many jobs there are within the commuting radius of neighborhood residents and how many competitors they face from the same or nearby neighborhoods. In the Columbus neighborhood with the most favorable odds for women using public transportation, about 1.5 job seekers for each entry-level job, the jobs within reasonable commuting range open to women happen to represent the highest concentration of such jobs in the entire metropolitan area. By contrast, in the Cleveland neighborhood with the most unfavorable ratio by far of all neighborhoods in the three cities--76 job seekers for each entry-level job--the number of nearby job seekers competing for entry-level jobs is the highest of any neighborhood in the metropolitan area. This neighborhood, which is also the neighborhood where the largest number of mandated residents are concentrated, actually has more jobs than the average Cleveland neighborhood, but the job pool is overwhelmed by the very large number of entry-level job seekers.

III. THE SUPPORT NETWORK IN RICHMOND AND NORFOLK

Previous sections have focused on identifying and describing the characteristics of job seekers and the characteristics of labor markets that, when taken together, provide a model of the employability of mandated public housing residents. There are a number of other factors, however, that serve to affect employability, though they are not easy to quantify in the traditional sense. These modifying factors are "supportive services" that must be available if public housing residents are to make the transition from welfare to work but do not, by themselves, directly enhance employability or raise the stock of human capital. These include transportation systems that permit travel to and from work within a reasonable time and child care that is accessible and affordable. There are other programs designed to enhance job readiness and provide links to potential employers. Not only must these systems and services be available, they must also be flexible to meet the needs of residents who have children of various ages, a variety of work schedules, and different levels of job readiness. The existence of such factors and their possible impact on employability are explored in this section for Richmond and Norfolk, where data were obtained by on-site visits.

A. Transportation

> *At least in Norfolk and Richmond, mandated residents who depend on public transportation will not find it easy to commute to entry-level jobs, particularly those that are located outside of the two central cities. In Richmond, access to suburban jobs is not easy because of an inadequate public transit system coupled with a low rate of auto ownership among low-income households. The public transit system in Norfolk appears to be more extensive than Richmond's, but the geography of the Norfolk area presents some formidable obstacles to mobility. While plans are underway to meet the transportation needs of mandated residents, it is still too early to tell whether such local efforts will be adequate to the challenge.*

The problems associated with concentrations of mandated residents in particular City neighborhoods, including the fact that they may be located far from centers of employment, are exacerbated by a reliance on a public transit system which is not adequate within the City of Richmond and is far from useful with respect to suburban locations. A 1994 survey prepared for the Greater Richmond Transit Authority (GRTA) reported that 73 percent of GRTA's riders do not have access to an automobile. The reliance was even greater for households earning less than $10,000 per year, which includes almost all of the welfare dependent population.

The shifts in the location of employment centers in Richmond points up the limits of the public transit system, especially for mandated public housing residents. Buses do not travel any real distance into suburban counties, and the suburbs to the south of the City are totally inaccessible by public transit. Also public transportation does not serve the new Motorola jobs in Goochland County and the new Siemens jobs in Henrico County. Similarly, City buses do not go into the Cloverleaf Mall just over the City line. Although many retail jobs are concentrated

there, mandated public housing residents would have difficulty reaching them. Within Henrico County, bus service is confined to an express route that bypasses some employment centers there.[34]

Attempts to modify the Richmond public transit system to reflect employment changes have so far not been successful. Further expansion of transit routes into suburban areas must receive the support of individual jurisdictions because in Virginia, cities are free-standing and not contained within counties. To piece together a regional transit plan, each individual jurisdiction has to agree to a funding formula, and such agreement is not in the offing.

In addition to transit route problems in Richmond, hours of service are also restricted by funding. Such limitations caused GRTA to cut evening and weekend service on a commuter bus it operated within Henrico County. Although bus service would have to run until 9:30 or 10 p.m. to accommodate those working evening shifts, the service actually terminates at 7 p.m. Entry-level job seekers would be especially hard hit by reductions in evening and weekend service because a disproportionate number of entry-level jobs have shifts that do not coincide with regular commuter bus schedules. For example, there are around-the-clock, relatively lower-skilled jobs in Henrico County that, by virtue of the hours, are not accessible by public transit.[35]

Recognizing the limitations of the public transit system, and to provide help with the transportation needs of TANF recipients, Ride Finders, a regional transportation planning group in Richmond, is working with other community partners to make suburban jobs more accessible to city residents who will be affected by welfare reform. Because vans can reach areas not serviced by public transit, Ride Finders will try to establish a van network available to employers on a rental basis. The organization has mapped the location of likely entry-level employment sites, day care providers and concentrations of mandated households to see where the gaps lie. They have identified 2,500 employment sites with at least 20 enterprises apiece that have entry-level jobs. Because it is not viewed as practicable to transport children to day care on public buses and vans, Ride Finders is also considering a separate transportation system for day care providers and the schools. Ride Finders would also like to have some form of transportation available between the hours of 6 a.m. and 10 p.m. to meet the needs of people working non-traditional shifts. With these plans in mind, Ride Finders is optimistic that transportation will not be a barrier to job accessibility in the Richmond Area. Whether van pool and other arrangements will be an adequate alternative to public transit cannot be assessed at this point because Ride Finders' plans have not yet been fully implemented.

In the Norfolk area, greater cooperation among jurisdictions permits one regional agency, Tidewater Regional Transit, to operate the transit system for all five area cities. However, two-

[34]The double issue of job deconcentration and the reliance on an inadequate public transit system characterizes the situation of inner-city residents in other places as well. Using PUMS data for Northern New Jersey, McLafferty and Preston showed that African-American women's long commuting times were linked to their heavy reliance on mass transit and poor spatial access to employment. Sara McLafferty and Valerie Preston, "Spatial Mismatch and Labor Market Segmentation for African-American and Latina Women, *Economic Geography*, Vol. 68, No. 4, October 1992, p406.

[35]These are telephone representative positions at the Capital One Company.

thirds of the service is provided only within the City of Norfolk where the levels of service and the hours of operation are more extensive than in the suburbs. There are some major bus routes connecting Norfolk and Virginia Beach, including one line that runs at 60 minute intervals from Norfolk to a major retail center in Virginia Beach. Although there are also some express routes, many commutes by public transportation in the Norfolk area would involve City residents in 10- to 12-hour days. Like Richmond, many of the major retail centers that could form an employment base for mandated residents are in suburban locations.

There are special commuting difficulties in Norfolk created by significant water barriers that exist between cities. Although there is one passenger ferry, most traffic must move through a tunnel to get to adjacent cities to the north. According to NRHA officials, transportation access may be particularly poor through the tunnel, especially from the South Side of Norfolk, where three of the public housing family developments are located. Though on a fixed schedule, there are two bus routes connecting Norfolk with nearby cities via the tunnel. Although most tunnel traffic is by car, the majority of assistance recipients do not own one.[36] Even among those who do own or have access to cars, these may provide a less than reliable mode of transportation because lower income households have less to spend on their maintenance and upkeep. At least public transit is more reliable even though its service range may be limited.

There is not the single coordinated effort in Norfolk to address the transportation needs of TANF recipients comparable to that in Richmond. Yet Norfolk residents trying to make the transition from welfare to work do receive some help with their transportation needs. Subsidies are available to low-income households through the purchase arrangement that DSS has with the transit authority. Clients participating in work preparation or who are working can also receive gas vouchers. Moreover, there are ride sharing arrangements available involving cars and van pools. Tidewater Regional Transit (TRT) will lease vans to individuals or companies, and employers are expected to partially subsidize the service. TRT has applied to the State to be included in a demonstration called From Welfare To Work: Public Transportation's Role. If chosen, free ride tickets would be made available for people attempting to transition to work.[37]

B. Child Care

During regular working hours, the problem faced by parents looking for child care in Richmond and Norfolk will be mainly one of finding the money to pay for it. Federal welfare reform eliminated the entitlement to child care after TANF assistance terminates, and, although Virginia does have a child care assistance program apart from VIEW, access to it is poor because of high demand and limited funding. Subsidized child care programs in Richmond and Norfolk are heavily

[36]Housing Authority Staff estimate that about 50 percent of its households have access to cars. According to a 1993 HUD Report, 34 percent of public housing residents in the South have cars. *Characteristics of HUD-Assisted Renters and Their Units in 1993*, U.S. Department of Housing and Urban Development, Washington, DC, May 1997.

[37]TRT now receives a fifty percent subsidy from the Federal government but the amount of subsidy will be cut this year as federal funding phases out. The State is expected to pick up some but not all of the shortfall.

oversubscribed, although long waiting lists have been sharply reduced. Aside from cost, finding child care at other than regular working hours is difficult in the two cities and the problem is aggravated by the fact that a disproportionate number of entry-level workers are employed at jobs that have irregular schedules.

In order to find someone to take care of their children while they work, RRHA and NRHA residents can choose between day care centers and day care homes, or they can decide to make informal arrangements. In either case, considerations of availability, convenience and cost undoubtedly are important decision criteria.

Overall, there are estimated to be about 23,000 child care slots in the City of Richmond, close to 11,000 of them in day care homes and 12,400 in day care centers (see Table 6).[38] Assuming that most day care slots in family homes and centers are intended for pre-school age children, each of the close to 1,000 pre-school age children of mandated RRHA residents could have as many as 24 slots to choose from. However, altogether there are more than 16,000 pre-school age children in the City of Richmond who could require these slots. Even so, there are likely to be sufficient slots in the City for all. The convenience, cost and quality of the care, however, are another matter.

Table 6
CHILD CARE SUPPLY AND DEMAND

	RICHMOND	NORFOLK
Slots		
In Registered Day Care Homes	2,700	1,000
In Unregistered Day Care Homes	8,100*	3,000
In Day Care Centers	12,400	4,500
TOTAL	23,200	8,500
Demand		
Pre-School Age Children In City	16,500	6,300
Ratio Of Slots To Children	1.4:1	1.35:1

* This is an estimate based on information provided by the Memorial Child Guidance Prevention Clinic.

Simply because it is more convenient, parents generally prefer to find child care near their homes. But this very preference creates imbalances, with shortages of day care slots for pre-schoolers in the vicinity of some of the public housing family developments and more than enough near others.[39] Again, this does not account for other neighborhood children who might be competing for these slots.

[38]In Richmond, there are 1,608 slots available in voluntarily registered day care homes and 1,080 in regulated and registered child care homes. For each registered slot, there may be as many as three unregistered slots in day care homes bringing the total of these slots to about 10,700 according to staff at the Memorial Child Guidance Prevention Clinic and other members of the Richmond day care provider network.

[39]There are insufficient slots for pre-schoolers at Creighton, Fairfield, and Whitcomb but Gilpin and Hillside, the other public housing family developments, are well served.

Pre-schoolers are not the only children for whom care is needed. Many school-age children also require some kind of care arrangement, but as a group, their needs are not well served anywhere. Some of the 1,765 children between the ages of 6 and 17 living in Richmond's family developments will also require before and/or after school care if their parents are to participate in work activities. But the Richmond public schools operate on a 6 hour day with a 3 p.m. pickup and provide no wraparound care. Thus, even a mother spending only nine hours a day on work activities, including travel, might need wrap-around care for her child.

Child care is also in scant supply for children whose parents work at jobs with irregular shifts, including nights and weekends. Home providers often close their doors at 5:30 and day care centers do not usually keep open beyond 6 or 6:30.

Public housing residents who do have access to automobiles would be hard pressed to take advantage of the concentration of 24-hour, entry-level jobs in Henrico County mentioned above, or any other suburban jobs, because of the lack of evening child care.[40] Competitors from county locations may have even more difficulties than City residents with respect to wraparound and off-hours child care.[41]

In Richmond, the cost of day care may overshadow its supply as a concern, with respect to mandated public housing residents, especially since the number of family day care providers can expand to meet the growing demand. Indeed, there are some unfilled slots among City providers. But in Richmond, day care costs between $45 and $55 a week for a preschooler cared for in a home, rising to $65 to $75 a week at a day care center.[42] Although representatives of the Richmond day care community suggest meeting child care needs with less costly family day care providers rather than day care centers, even the cheaper option is not very feasible, as seen above.[43]

Even the somewhat lower cost of family day care would place a strain on the budget of a very low-income household. Under the Virginia welfare reforms, participants are only entitled to subsidized child care until their transitional assistance terminates. This assistance, provided during the third year of VIEW participation, covers day care costs. But after this point, the cost of day care can become an out-of-pocket expense if a low-income family cannot receive a child care subsidy from the State's Fee-Based Child Care Subsidy program.[44] TANF recipients

[40]These are telephone representative jobs at Capital One.

[41]View of the Memorial Child Guidance Prevention Clinic.

[42]In suburban locations, the cost of caring for a pre-school age child in a home is nearly double, about $100 a week according to the Memorial Child Guidance Prevention Clinic.

[43]The Memorial Child Guidance Prevention Clinic.

[44]Child care costs are an eligible deduction from income when computing tenant rent; this child care cost burden partially shifts to the Housing Authority. Virginia does have a fee-based system of child care support available to all low-income households that is administered by DSS. This program requires participants to contribute 10 percent of gross monthly income but is heavily subscribed to and has limited funding. Federal and State, non-TANF funds cover the subsidy costs.

earning the minimum wage, which many who find work can be expected to earn, could end up paying one-quarter or more of their income for child care. Costs would multiply if low-income wage earners have more than one child requiring care, and fewer than one-quarter of mandated residents in Richmond have only one child. For the majority of households, child care costs could easily eat up one-half or more of their wages.

There may be as many as 4,000 slots in day care homes available in the City of Norfolk. There are an additional 4,500 slots in 56 day care centers for a total of about 8,500 day care slots in the City.[45] Just in Norfolk's public housing developments, mandated residents have 711 children under six.[46] If most slots in day care homes and day care centers are actually intended for pre-school children, there may be as many as twelve slots available for each pre-school age child of mandated residents. When pre-school and school age children of all working parents in Norfolk are taken into account, there are still an adequate number of slots although no surplus.[47]

As in Richmond, Norfolk parents prefer care that is closer to home, and some child care is available to residents right in their public housing neighborhoods. In the Bowling Green Development there is a Boys and Girls Club providing after-school care and a day care center with a Head Start program providing wrap around care. There are a couple of other day care centers near other public housing developments.[48]

According to representatives of the child care network in Norfolk, creating child care slots is not the problem. There are people in the community already trained to provide such care and training others takes just six weeks. There are even people prepared to provide child care outside of the normal day-time hours. As in Richmond, the problem is the inability to pay for such care. In Norfolk, the weekly cost in a family day care home is $65 for an older child and $75 for a younger child. In a center, such costs would be more like $85. Before- and after-school care in a day care home costs about $40 and $60 for the same care when it is provided in a center.[49] But because of the lack of money to pay for day care, either through public funding sources or from parents' income, many children are not receiving adequate care when they need it. The Planning Council estimates that about one-quarter of all children between 6 and 14 have no adult supervision when they are not in school.

Although Block Grant funding for working parents exists to subsidize child care, and there is money from the State as well, in the Norfolk area, there were already 9,000 people on subsidized child care waiting lists before the enactment of welfare reform. And in the At Risk Child Care program, which provides a deep subsidy to working parents who have incomes below

[45]Information provided by The Planning Council, Dependent Care Services in Norfolk.

[46]Information provided by NRHA.

[47]The Planning Council indicates that in 1990 working Norfolk residents had 6,317 children under age 6.

[48]Some of the family day care homes that have been certified and subsidized through The Step Ahead Program are in the areas of Calvert Square, Tidewater Gardens, Diggs Town and Oakleaf Forest family developments.

[49]Schedule of Fees from Norfolk Day Care Network.

$22,000, there are 1,400 families on the Norfolk waiting list as well as 200-400 on the waiting list in Chesapeake. The average time on these waiting lists is 2 to 3 years.

As a way of satisfying their work requirements, some DSS clients in Norfolk have become day care providers themselves. The Day Care Clearinghouse works with the Housing Authority to identify public housing residents who would make good providers and a training program is provided for residents who sign on. After going through the training program, residents become regulated and licensed providers.[50] However, the Clearinghouse is concerned about provider income given that most of their clients are earning salaries at or near the minimum wage. Although they are not encouraged to do so, some providers do lower their rates to accommodate people who cannot afford the market rates.

C. Special Assistance

Unlike many other entry-level jobs seekers, Richmond and Norfolk public housing residents are the targets of organized efforts to improve their employment prospects. In some cases, programs have been created specially for them and in other cases they, along with other TANF recipients, receive special program assistance. In both Richmond and Norfolk, mandated residents who live in Enterprise Communities are also the targets of special efforts to help them get jobs. By and large, these efforts are oriented toward getting mandated households into the work force as quickly as possible as required by welfare reform. Mandated residents are not likely to receive extensive training excepting for that which may have occurred prior to the implementation of welfare reform. Some mandated residents have already succeeded in getting jobs because of the help provided by the programs that target them. However, the numbers are so far small compared to the number of those who will need to find jobs.

Well before the April 1, 1997 welfare reform implementation date, RRHA was offering its residents a number of training opportunities to compensate for vocational deficits. By taking advantage of such opportunities prior to the implementation date, residents were able to receive training not available under the welfare reform guidelines which emphasize job search activities.[51] Job readiness and job search programs that currently target public housing residents and other TANF recipients conform to the welfare reform guidelines. The life skills curriculum run jointly by DSS and the Richmond Career Advancement Center (RCAC), under contract to the Housing Authority, is an example. RCAC provides skills assessment and a three week pre-employability workshop for those found to require such preparation.[52] It also provides help with job placement.

[50]In the past, food subsidies were available to licensed providers, but now that such subsidies are no longer provided, there are few incentives for operators to seek licensing.

[51]Because of this emphasis, assistance recipients, including public housing residents, who have not yet acquired vocational skills may now have little opportunity to do so.

[52]RCAC also provides initial assessments of job readiness, pursuant to Virginia's VIEW program, for existing and new clients of the Richmond branch of the Virginia Department of Social Services. RCAC provides a relatively short program for a subset of those it assesses

Staff job developers work to convince employers to hire people who do not have a work history, and so far RCAC has been successful in moving a number of enrollees into the workforce. Virginia Works, another local organization with which the Housing Authority is a partner, has also established ties to local business and helps public housing residents and other assistance recipients and low income households find jobs. Neither RCAC nor Virginia Works provides vocational training.

The Department of Social Services (DSS) arranges for placements through its full employment program for all assistance recipients who do not get unsubsidized jobs within ninety days of the date at which their job search begins. Client benefits are cashed out and given to an employer who uses them to pay the employee's salary. In addition, if some clients can only function at a 5th-to 7th-grade level, DSS will try to get them into a work experience program to help them compensate for educational deficits.

Although the Enterprise Communities do not specifically target public housing residents in Richmond, program efforts are concentrated in three areas of the city--North, East, and South Richmond--where large numbers of public housing residents are concentrated. The City, which manages the State's program, oversees assistance to businesses that provide on-the-job training to new and existing employees. Businesses are eligible for tax credits and grants for employing low- and moderate-income persons residing in the Enterprise Communities.

As in Richmond, the Department of Social Services in Norfolk has developed a system for assessing the job readiness of TANF recipients. While the agency takes the position that just about all of its clients should be work oriented, it recognizes that clients will follow different paths depending on their backgrounds and aptitudes. To direct people appropriately, DSS operates a Needs Center to assess clients, a process that takes seven weeks to complete. Those who have been recently employed do not need to go through the assessment process and are, instead, provided with child care assistance to facilitate job searching. All other clients are given the Test of Adult Basic Education (TABE) to ascertain their educational level and the California Adult Student Assessment Test (CASAS) to ascertain their suitability for various occupations. A class is held for people who perform below the 8th or 9th grade level and who possess minimal skills.

Because the lack of previous work experience is recognized as a barrier to employability, Norfolk's DSS has identified about 300 slots which will provide on-the-job training. Although DSS has been willing to solicit the non-profit sector for job slots, it is reluctant to subsidize wages paid by private sector employers who, it thinks, might take advantage of such a program. Nevertheless, the TWA Reservation Center is one large, private sector operation in Norfolk that has stepped forward to help train people who lack job experience. Of the 150 people enrolled in TWA's initial training class, only nine got hired with four still on the payroll. Overall, 25 DSS clients have been hired by TWA. But DSS also believes that it will be smaller firms that will end up providing the bulk of the jobs for the TANF population.

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offering skills that job seekers will need as they enter the labor market. This includes resume writing, workplace behavioral training, classes on personal organization and scheduling, information on how to dress for work, and other components.

Another organization of importance in providing help to entry-level job seekers is Norfolk Works, an organization created and spun off by NRHA. It is charged with providing coordinated job training and placements for Enterprise Community residents. Since all eight of the family public housing developments lie within the Community, public housing residents are among the beneficiaries.[53] The organization was able to sponsor vocational training programs to prepare people in such fields as customer service, word processing and data entry, computer technician, home health care, food service, and the shipyard worker and building trades, including building maintenance. For example, in a program sponsored by the Air Conditioning and Heating Association, which has agreed to hire trainees, Norfolk Works offers a non-traditional training class for women in the repair and installation of air conditioning systems. However, Norfolk Works now is under pressure to adapt its training programs to reflect the greater emphasis being placed on getting a job rather than preparing for one. It was for this reason that the organization tried to get as many people trained as possible before the October 1st welfare reform implementation date in Norfolk.

For those with a GED who are relatively job ready, Norfolk Works provides a ten-week career development class which covers life skills, attitude issues, proper dress, etc. Of the participants in this program, 156 have been public housing residents. For those without a GED, Norfolk Works will pay for GED classes, and the organization is encouraging employers to facilitate GED training for their employees. Area businesses that employ Norfolk Works participants receive special incentives, including $1,000 job grants, for each permanent full-time job created. So far, Norfolk Works has been able to put more than 300 people into jobs and over 50 employers have committed to create and/or fill 1,500 jobs over five years by hiring participants of the Urban Apprenticeship Program operated by Norfolk Works. Overall, of the 810 persons receiving services through Norfolk Works since 1995, 310 have been public housing residents.

Either directly or under the impetus of Section 3 of the Housing and Urban Development Act of 1968,[54] the Public Housing program is itself a conduit to a limited number of jobs for residents, including TANF participants. At RRHA, for example, about $150,000 a year goes for wages to residents temporarily hired to work in the Housing Authority's maintenance program. And, RRHA has hired a general contractor for some of its modernization work who, following Section 3 guidelines, employs some residents as subcontractors. With funding from the Drug Elimination Program, some residents also work full-time at the Housing Authority. However, both RRHA and NRHA do not view their mission as being employers of last resort. They lack the resources to provide jobs for anything like the number of TANF participants who will be needing them when the welfare reform clock runs out.

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[53]In December 1994 Norfolk became the first city in the state of Virginia to be designated a Federal Empowerment/ Enterprise Community.

[54]Section 3, as amended by the Housing and Community Development Act of 1992, "requires that economic opportunities generated by certain HUD financial assistance for housing . . . and community development programs . . . shall, to the greatest extent feasible, be given to low- and very low-income persons . . . ." 24 CFR Part 135.

IV. THE FINANCIAL EXPOSURE OF THE HOUSING AUTHORITY AND THE FEDERAL GOVERNMENT

The preceding sections of this study have systematically described the environments in which mandated public housing residents will be competing for entry-level jobs and have estimated both the competition they will face and the probability of success. One of the primary values of such information lies in what it can say with respect to the financial risks that welfare reform may pose for public housing authorities, which is the principal focus for this section. To the extent that mandated residents are unsuccessful in obtaining work and do have their welfare benefits terminated, both their incomes and their contributions to housing authority rent revenues will decrease substantially. Conversely, success in the job market can yield increases in both resident incomes and housing authority rent revenues.

The financial impact of welfare reform will also depend on the ability of the housing authorities to compensate for any losses of rental income by implementing and collecting minimum rents, instituting preferences favoring tenants with more income, and offering ceiling rents and other incentives to attract and retain such households.

Finally, this section explores the possible impact of welfare reform on the Federal government. Under current policy, income losses to the housing authority would be covered through increases in Federal operating subsidy. By the same token, such subsidies would be reduced if tenants are paying more for rent. If the latter were the case, the Federal government would actually save subsidy dollars.

A. Rent Receipt Decreases Under A Worst Case Scenario

In both Norfolk and Richmond, about one million dollars in annual rent receipts come from mandated households. Yet this amount constitutes a relatively small share of total rent revenues because mandated households are in a minority and because their rents payments are generally lower than other RRHA and NRHA residents. Among all study HAs, the proportion of rent revenues at risk as a result of welfare reform varies from a low of 8 percent in Columbus to a high of 30 percent in Los Angeles. As in Richmond and Norfolk, this variation reflects both the proportion of housing authority residents who are mandated and the average rents paid by these households compared to the rents of other housing authority residents.

In a worst case scenario, the mandated residents of RRHA developments would find themselves with neither wage nor TANF income when the time limit on their assistance is reached. If housing authorities had no way of mitigating the rent impacts of such income losses,

$1.11 million or close to 16 percent of the $8.2 million that RRHA receives from tenants in annual rent receipts could evaporate (see Table 7).[55] Only one-quarter of RRHA's 4,398 residents are mandated and their average rent payment of $97 is relatively low compared to that of other groups of residents.[56] Thus, over $7 million in annual rent receipts should be unaffected under this scenario when welfare reform time limits are reached.[57] The average monthly rent paid by mandated households reflects the fact that Virginia's assistance payment standard is below the median when compared with other states.[58]

The extent to which rent revenues are at risk because of welfare reform varies substantially among the HAs included in this study. It ranges from less than 10 percent to almost one-third of total rent receipts.

	PERCENT OF REVENUE AT RISK RESULTING FROM WELFARE REFORM	MANDATED HOUSEHOLDS AS A PERCENT OF ALL R/H
Richmond	16	26
Norfolk	17	25
Los Angeles	30	37
San Francisco	17	24
Cleveland	11	23
Columbus	8	25
Toledo	16	25
Dallas	10	25

Under the present Performance Funding System, in the worst case scenario, RRHA could petition the Federal government to make up the loss to cover the difference between operating costs and tenant contributions to rent.[59] Thus, despite decreased rent revenues, the ultimate effect of welfare reform on RRHA could be negligible but the aggregate effect from many HAs on HUD's budget could be sizable.

[55]Eleven percent of mandated residents currently have some income from wages that would not be affected by welfare reform. Furthermore, both mandated tenants who work and those who don't have other sources of income besides AFDC. For example, income from child support would fall into this category.

[56]The average tenant rent for all households at RRHA is $156 per month.

[57]This report assumes that in the year 2000, the first time that benefit limits will be reached for the current assisted population, the expected population of assisted households will resemble the current population in all relevant characteristics. This allows the maximum impact of welfare reform to occur because all mandated residents would have received assistance long enough for it to have come to an end. The alternative would be to utilize welfare caseload dynamics to predict the number of exits from public housing and the characteristics of those exiting. But historical data on welfare caseloads and on public housing residency do not relate well to current circumstances.

[58]Virginia's AFDC payment to a family of three was $291 a month. The majority of states pay more. Even though low, under VIEW guidelines, assistance will continue to those AFDC households who have children under 18 months and/or care for a disabled household member. There are 278 such households living in RRHA family developments.

[59]PFS has sometimes funded housing authorities at somewhat less than 100 percent of their total need, but these shortfalls are allocated among housing authorities on a pro rata basis.

Table 7
THE IMPACTS OF WELFARE REFORM ON HOUSING AUTHORITY RENT REVENUES

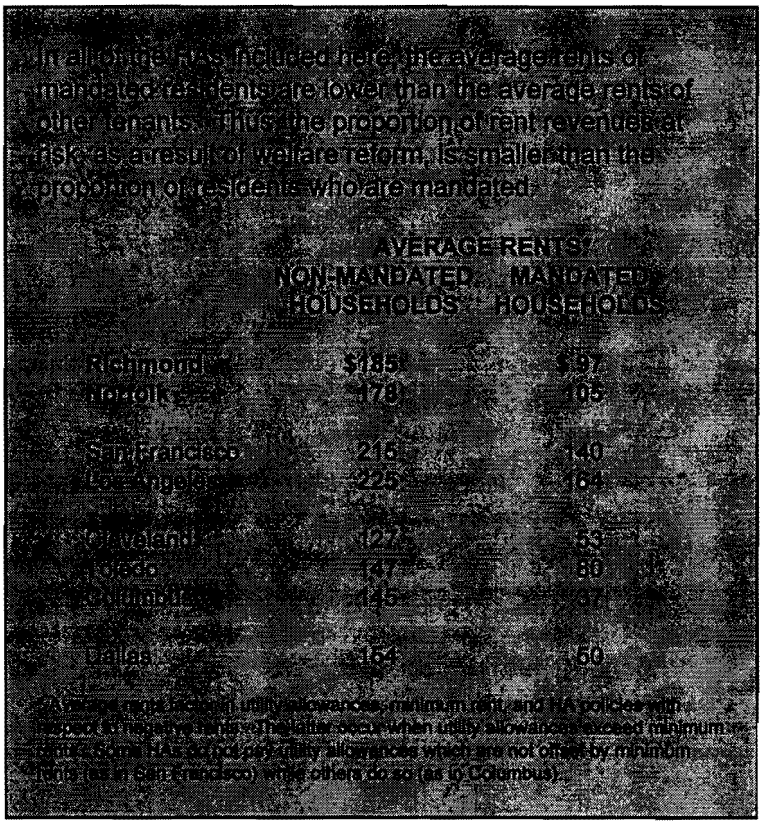
Possible Employment	No. Working	Increase or Decrease in Rent Receipts From Mandated Residents (*rel. to current receipts*[1]) Total ($1,000s)	$ Per Unit
Richmond (n=1,158 Mandated Residents)			
Worst Case[2] Without Min. Rent Payment	127	-1,112	-960
Worst Case[2] With Min. Rent Payment	127	-497	-1,128
Break-even: 28% Work Participation Rate[3]	344	0	0
PUMS: 58% Work Participation Rate[4]	672	+732	+632
MSA Ratio: 61% Work Participation Rate[5]	706	+807	+697
Norfolk (n=898 Mandated Residents)			
Worst Case[2] Without Min. Rent Payment	89	+1,012	-1,128
Worst Case[2] With Min. Rent Payment	89	-772	-859
Break-even: 48% Work Participation Rate[3]	431	0	0
PUMS: 42% Work Participation Rate[4]	366	-109	-121
MSA Ratio: 26% Work Participation Rate[5]	251	-357	-398

Note: All rent calculations assume that those not working pay minimum rents. For those who do work, rent payments are calculated at 30% of the adjusted income of mandated households. The incomes imputed to these households are the wage incomes of non-mandated residents who are now working. In Richmond the rent from these households amounts to $221 and in Norfolk $182.

1/ Current annual rent receipts from Richmond and Norfolk mandated residents are $1,352,000 and $1,138,000 respectively.
2/ The worst case scenario--those required to work but ultimately failing to find it--does not lead to the total loss of rental income because some mandated households are already working. Charging minimum rents for the remainder also mitigates some of the losses.
3/ This is the work participation rate at which the rent revenue impact of welfare reform is neutral. In Richmond, 28 percent of mandated households would have to work and in Norfolk, 48 percent would have to work.
4/ These are the work participation rates of households in the 1990 PUMS sample for Richmond and Norfolk who resemble Richmond and Norfolk residents in terms of salient characteristics like race, education, marital status and existence of children. Only those were counted as working who worked full time, that is, at least 30 hours a week (and, by stipulation, for one-half of the year), according to the TANF criteria for the year 2000 and thereafter.
5/ These are the work participation rates of mandated residents assuming that they get jobs in relation to the MSA ratio of entry-level job seekers to entry-level jobs.

Of NRHA's $6.6 million in rent revenues, a little more than $1 million, or about 17 percent, is generated from the 898 mandated households.[60] As in Richmond, most of NRHA's rent receipts are not affected, even under a worst case scenario. Whereas the average rent of non-mandated residents is $174 monthly, mandated residents pay $105 on average.

B. Possible HA Responses To Lost Revenues



Minimum rents compensate for some portion of the lost rent receipts if mandated households are unable to replace their income from assistance. With higher minimum rents, a larger portion of rent receipts would be preserved. In Columbus, for example, even under a worst case scenario, the $50 minimum rent policy would prop up rents sufficiently to prevent any loss of revenues. If Dallas chose to charge a $50 minimum rent instead of the current $25, it, too, would experience no reduction in rental income even under a worst case scenario in which no mandated residents found jobs. In Los Angeles, the minimum rent of $25 is only a small fraction of the rent currently paid by mandated residents and even if it were raised to $50, it would staunch only a small share of the loss under a worst case scenario. However, revenues from minimum rents are not guaranteed because some residents may be unable to pay even them if they find themselves with no source of cash income after welfare reform runs its course. Aside from adopting minimum rents, renting to households with more income can also compensate for losses when assisted households are unable to replace their income. In the cases of Norfolk and Richmond, instituting new resident preferences favoring higher rent-paying households is viewed as a more promising way of boosting rent revenues

[60]The rent receipts of 274 AFDC households will be untouched by welfare reform because these households are exempt under VIEW guidelines. The rent receipts of mandated AFDC households are also partially sheltered because 10 percent of these households have some wage income.

than instituting ceiling rents that are deemed to be unrealistic because of current restrictions on how they are set.

RRHA has ways of cushioning itself against the impact of even a worst case scenario in which no mandated residents found jobs. RRHA's minimum rent policy acts as a major shield against the impact of welfare reform.[61] Under this policy, residents with no reported source of income must still contribute $50 monthly. This is about one-half, on average, of rent now paid by mandated residents. Because of the minimum rent, the HA would be able to make up $531 annually per mandated unit of its expected loss under a worst case scenario.[62]

Housing Authorities can also compensate for lost rent receipts by instituting a preference for households who can pay higher rents.[63] RRHA's Executive Director sees a close connection between welfare reform and rent reform and indicated that the Housing Authority is eager to attract tenants who can contribute to a better socioeconomic balance. To that end, RRHA has a current preference for working families. Because working families contribute more, RRHA is becoming less reliant on subsidy to cover unit costs. By recruiting such families, the HA has already experienced a significant increase in its rent receipts. In 1996, close to 300 working families became RRHA tenants and 169 other new tenants satisfied a higher income preference on the basis of their SSI and SSDI entitlements. Each working household recruited provides a rent cushion for another paying minimum rent.

RRHA believes that it has at least temporarily exhausted the ranks of potentially higher rent-paying households on its waiting list. It also believes that rent incentives would have to be offered to replenish the supply of such households. But the current ceiling rent of $538 for a 2-bedroom unit, set at the Section 8 FMR level, may not be an adequate draw for such households. Most RRHA tenants pay rents that do not approach this ceiling, and even wage-earning, non-mandated households pay rents which are less than one-half of the ceiling rent. Only 30 HA households had their rents reduced when ceiling rents were instituted. Households that would find ceiling rents attractive would have to be earning over $20,000. The Housing Authority is now considering establishing more realistic ceiling rents that are tied to actual operating costs at particular management centers and to the marketability of particular developments.

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[61]According to PIH Notice 96-81(HA) of September 30, 1996, housing authorities may set minimum rents of anywhere between $0 and $50. The notice was to have expired on September 1, 1997 but it has been extended for another year under the continuing appropriation. The House bill calls for a minimum rent of $50 with an allowance for hardship exclusions, while the Senate bill calls for a minimum not to exceed $25 that would also incorporate hardship exclusions. The Baltimore Housing Authority is one case where the currently allowed minimum of $0 is in effect. Although a number of housing authorities have adopted a $50 minimum, they do not include the largest authorities. The Administration's Public Housing Reform bill proposes to set minimum rents at $25 per month, and permits either HUD or the PHA to grant hardship exemptions. Under this bill, Richmond's $50 minimum rent would be reduced to $25.

[62]Although minimum rents can be waived for three months for hardship cases, RRHA has received no requests for a waiver from households paying minimum rents.

[63]Close to one hundred units (of a total of 4,398) turn over each month. This allows the Housing Authority to increase the number of higher rent paying households over time.

As with RRHA, the minimum rent policy in effect at NHRA partially compensates for rent receipt decreases under a worst case scenario in which no mandated residents were able to find employment after their assistance ended. NRHA's $25 minimum rent is one-half of Richmond's and, as a result, the majority of current rent receipts from mandated tenants would still be lost. With its $25 minimum rent policy, the HA is able to make up $260 annually per mandated household of its expected loss under a worst case scenario without the minimum rent. However, if NRHA had adopted a $50 minimum, it would have been able to make up $537 annually per mandated unit.

Minimum rent payments can be used by housing authorities as a cushion against the level of revenue loss they would experience under a worst case scenario.

REVENUE LOSS UNDER WORST CASE SCENARIO

	WITHOUT MINIMUM RENTS		WITH MINIMUM RENTS	
	Total ($1,000s)	Per Unit ($)	Total ($1,000s)	Per Unit ($)
Norfolk	1,012	1,128	772	859
Richmond	1,112	960	497	429
San Francisco	2,096	1,567	1,727	1,292
Los Angeles	5,438	1,640	4,655	1,404
Cleveland	1,076	590	562	308
Columbus	382	406	+125*	140
Toledo	617	812	429	564
Dallas	628	479	255	194

Note: Minimum rent is $25 in Norfolk, Cleveland, Toledo, Dallas, San Francisco, and Los Angeles. It is $50 in Columbus and Richmond. Under proposed HUD minimum rent rules, all HAs will be required to charge exactly $25.

* The minimum rent policy in Columbus moves the HA from a potential deficit to a positive position, even under a worst case scenario.

The decision to adopt a $50 minimum assumes that residents without income from assistance or wages would be able to pay a higher minimum rent. Despite Richmond's experience, when a $50 across the board minimum was briefly instituted elsewhere, a number of housing authorities reported that it created a hardship among tenants. If large numbers of residents are unable to pay minimum rents when the welfare reform clock runs out, minimum rents will provide less of a cushion for rent revenues lost as a result of welfare reform. Most tenants with very little or no cash income have been able to pay minimum rents at the two housing authorities. Though both housing authorities are able to provide temporary relief to residents who are unable to make such payments, such relief has been largely unnecessary. Minimum rents are set sufficiently low that virtually every household assessed at the minimum rent level can find the cash to make such payments. It seems likely that income from unreported sources, including the underground economy and support from friends and family members, accounts for the ability of some households with no reported income to make minimum rent payments. Although income from wages, benefits and transfers is verifiable, as is the loss of such income, it is much more difficult to account for other kinds of income in a systematic way.

As in Richmond, NRHA Commissioners have changed tenant preferences to alter the socioeconomic mix at the HA. NRHA now targets the employed, those who have graduated from an institution of higher education or a job training program, and those who are currently

enrolled in such programs. To balance its traditional mission of providing housing of last resort with more recent fiscal imperatives, the Housing Authority would like to select one-half of the people on the waiting list from traditional preference categories and one-half from the new preference categories. So far, 120 new households have been selected on the basis of the latter. With a 10 percent annual unit turnover and about 50 evictions per year, the HA can reach between 200 and 300 families yearly using the new preference categories.[64] The composition of NRHA'S waiting list would allow it to continue to draw people from the new preference categories for the foreseeable future.[65]

Like RRHA, NRHA believes that rent flexibility in the form of minimum and ceiling rents is the key to making welfare reform work. In addition to the minimum rent of $25, it has a ceiling rent capped at an amount no higher than that necessary to cover operating costs including utilities.[66] Participants in the Economic Empowerment Demonstration have had the option of either electing to pay ceiling rents that allow the housing authority to recover operating costs, but not debt service or interest, or having their rents frozen at pre-employment levels and the difference applied to an escrow account..

Both housing authorities are also concerned about the effect on rent collections of income sanctions applied to residents. As it now stands, residents whose TANF grants are reduced as a result of non-compliance with work related activities, should end up having their rent reduced. As the Federal statute now requires, a reduction in income leads to a downward adjustment in rent. However, this reduction has the perverse effect of softening the income sanction. Housing authorities have supported HUD's efforts to have sanctions disregarded when setting rents, but so far Congress has not acted.

NRHA is concerned about how much PFS would fill the gap created by any loss of rental income if it instituted income disregards. The Housing Authority also is concerned that a block grant funding system would not compensate for any loss of rental income.[67] If the HA felt secure that PFS would compensate for lost rent receipts, it would be inclined to exercise the greater discretion it now has in this area to grant an income incentive to all new workers, it could, for example, not count the income of a second wage earner in calculating the rent contribution, or not count income increases of less than $1,000 per year.

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[64]However, in a number of the larger developments where mandated residents live, the average resident stay is between 13 and 16 years.

[65]Over 500 waiting list households are employed and close to 200 have non-employment income from sources other than TANF including Social Security and SSI.

[66] Section 402 (b) of the Balanced Budget Downpayment Act, I, 1996 amended Section 3 (a) (2) of the 1937 Act to permit the establishment of ceiling rents that reflect reasonable market value but that are not less than monthly operating costs. Some housing authorities believe that the requirement to cover operating costs pushes rents beyond levels that would make them attractive to working households in certain locales. The Administration's pending Public Housing Reform bill would allow HAs, for family developments, to adopt ceiling rents that reflect market value but that are not less than 75 percent of operating costs.

[67]Legislation to create block grant funding of the Public Housing program has been proposed at various times. Although housing authorities might end up with more flexibility with respect to tenant selection under a block grant, the housing authorities are concerned that a capped funding mechanism would also leave them unable to cover part of the income loss when currently mandated residents are unable to replace their assistance income.

Both housing authorities could end up having some of their rent receipts sheltered as a result of the 20 percent across the board "hardship" exemption that each State is able to apply under TANF. This exemption is above and beyond the exemption for TANF households who have children under 18 months or care for disabled household members but it is too early to know how Virginia will select those who would qualify. Among those who would be eligible are households with children under six with no suitable child care arrangements and victims of domestic abuse. RRHA reports that domestic abuse is an issue for a significant number of its households.

Because of educational and other deficits among residents, DSS believes that the TANF 20 percent exemption would be easy to fill in Norfolk. However, the State is keeping this exemption in reserve, taking the position that even people with multiple barriers should make the effort to participate in work related activities. Thus, even if some mandated households become exempt from the time limits on assistance, in the near term, they are subject to sanctions if they do not participate in work-related activities. In Richmond, if the Housing Authority benefited from a proportionate share of the 20 percent exemption, about $271,000 in rent receipts could end up being sheltered and in Norfolk close to $227,000 would be sheltered.

HAs with substantial operating reserves have an additional cushion against a worst case scenario. Furthermore, housing authorities are eligible to receive revenues from community development block grants and other funding sources, some of which can be used for public housing.

C. Estimates of Income From Work

Two estimates of work participation are used in this study. One is more optimistic and one more conservative and as a consequence they lead to very different predictions about the impacts of welfare reform on HA rent receipts, tenant income, and the Federal budget. Richmond is the only one of the eight housing authorities studied where the majority of residents are estimated to work, based on the more conservative estimates of work participation. In fact, in most of the other housing authorities work participation would fall below one-quarter of mandated residents. Based on the more conservative estimate, five of the eight housing authorities studied would end up with lower levels of rent revenue after the welfare reform clock runs out. Estimated revenue impacts range from an increase of $697 per mandated unit, the case in Richmond, to a decrease of $1,216 per mandated unit, the case in Los Angeles. Using the more optimistic estimate based on the assumption that mandated residents will be able to work at the same level as non-assisted households whom they resemble, all of the housing authorities but one--Norfolk is the exception--would end up with increased rent revenues. When the more conservative estimates are computed at the neighborhood level as they were in the three Ohio cities, Cleveland alone would

suffer a further decrease in rent revenues over the decrease based on MSA job growth estimates.

What happens to HA rent receipts as a result of welfare reform depends on whether mandated residents find jobs. Given that the welfare reform time limits on cash benefits in Virginia will not be reached until the Year 2000, any estimates of future job prospects must rest upon analytic techniques such as extrapolating from job participation rates of those resembling the population affected by welfare reform or combining available information on projected numbers of entry-level job seekers and new entry-level jobs at the time when the welfare reform clock runs out.[68]

Estimating employability by extrapolating from the work participation rates of a similar group of people is possible using 1990 Public Use Microdata (PUMS) from the Census Bureau,[69] as described in Appendix C. Doing so rests on the assumption that when the welfare reform clock runs out, assisted households will participate in the labor market to the same extent as similar households represented in PUMS. But while resembling PUMS households in salient respects, the labor force participation rate of mandated households may also be influenced by characteristics that reduce their employability but are more difficult or impossible to measure using PUMS data. The motivation to work is one such characteristic. Although differences in motivation have seemingly been legislated out of existence by welfare reform requirements, experience suggests otherwise. The fact that there are currently mandated households who have already been sanctioned for failure to comply with the rules of Virginia's JOBS program suggests that motivation to work is not entirely subject to legislated work participation requirements.[70]

It is also optimistic to assume that PUMS work participation rates can be applied to mandated residents to the extent that doing so presumes the latter face no greater obstacles than their competitors when it comes to finding child care and transportation that will make jobs more accessible.

The PUMS sample shows that some of those who met the work criterion[71] worked considerably more than 30 hours a week and some worked during the entire year.[72] Thus, the

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[68]Welfare officials in the two cities are not sanguine about the prospects of a successful transition from welfare to work on the part of mandated households. It is the judgment of officials at the Richmond office of the State Department of Social Services that about one-half of the mandated population will be relatively easy to place in work situations. The other half will be harder to place because of multiple barriers including educational deficits, criminal records, and substance abuse problems. Officials at the Norfolk office of the State Department of Social Services believe that "large numbers" of clients in Norfolk will not make the transition to work at the 3 and 5 year cut-off points because of their educational and other deficits even though they may be able to find jobs in the near term to fulfill work participation requirements.

[69]Easily measured characteristics that have been shown in PUMS to be important for estimating the employability of mandated residents include: educational attainment; sex, race and age of head; age of children; single parenthood; and, marital status. Logistic regressions from PUMS were utilized to determine which characteristics were of importance in each site. The regression coefficients were then applied to the distribution of mandated residents to estimate how many would have been employed for at least 30 hours per week for at least 26 weeks.

[70]The Housing Authority in Richmond suspects that many of these households have unreported sources of income because they have no problem coming up with the minimum rent nor do they do what is required to have the sanctions lifted. For such households, participation in work and training could require an unacceptable opportunity cost.

[71]Working at least 30 hours a week is the criterion adopted in this study for "having worked" because it is the minimum work requirement to be applied to assisted households under TANF by the year 2000. Households that met the "having worked" criterion also had to have worked for at least one-half of the year.

labor force participation rates of proxy households in PUMS data should be interpreted as an upper bound on the possible participation rate of mandated households.[73] The PUMS estimates of work participation rates, taking into account changes in the economy since 1990, are given in Table 8.

One other basis for estimating the percentage of mandated RRHA and NRHA residents who will be successful finding jobs is to use information on entry-level job growth predicted for the future and on the number persons expected to be looking for entry-level job when the welfare reform clock first runs out (see Table 4). Predictions of new entry-level jobs are typically made by state employment commissions, and include both jobs that will be new to the local economy and normal turnover. In a number of states, these predictions have now been extended out to the year 2005. They reflect recent trends in employment, but they do not incorporate extreme economic shifts brought about by such things as a depression. Unlike PUMS, the estimates derived with this method incorporate TANF recipients new to the labor force, and, therefore, include more entry-level job seekers than the PUMS estimates. However, although they utilize job growth predictions, these estimates do not incorporate the impacts on the economy of an influx of new entry-level job seekers, namely the TANF population. Thus, they do not consider expansions in the number of jobs which could incorporate increases in the size of the labor force.

Using the assumption of work participation based on job growth, ratios of entry-level jobs to entry-level job seekers can be computed. These ratios can be converted into work participation rates by adopting the assumption that each entry-level job seeker, mandated residents included, has an equal chance of obtaining an entry-level job and that all open jobs will be taken if there are fewer jobs than there are seekers. Thus, for example, if it can be assumed that mandated public housing residents are able to get jobs in the same proportion as other entry-level job seekers, 61 percent of residents in Richmond and 28 percent in Norfolk could be successful.

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[72]These work participation rates reflect the 1989 economy. Trends in employment since then were checked in each of the sites using the Census Bureau's Current Population Survey (CPS) for the years from 1990 through 1997. For the CPS population similar to the public housing TANF mandated population, the estimated proportion employed at least 30 hours per week for at least 26 weeks showed the following: Richmond, Cleveland and Dallas were virtually unchanged; Norfolk dropped to a level about one third less employed; employment in Columbus rose about five percentage points; Toledo's sample was extremely small for the target group and employment was very volatile, but for larger groups seemed to stay steady; employment in Los Angeles dropped about five percentage points; and, there is a mixed picture in San Francisco, where employment seemed to drop about ten percentage points in the MSA as a whole, but may have increased in the central city based on a fairly small sample size (for a larger group without the target group's age, race, ethnicity, kids and marital status constraints the employment in the central city decreased slightly). The large change in Norfolk's economy from 1990 to 1997 is reflected in the PUMS work participation estimates. Appendix C contains the details of how these trends were developed.

[73]In fact, the work participation rates of proxy households may be peak work participation levels since they reflect just a one year period. Over a longer time period, the work participation of households with the characteristics of proxy households should fall based upon the preponderance of evidence about the work participation patterns of such households. Many of these households hold jobs that are at the least stable end of the labor market. Necessarily, the work participation estimates used in this study assume a long-term trend and are, therefore, optimistic.

The estimate based on projected job growth (the ratio estimate) and the estimate based on the job participation patterns of people who resemble mandated residents (the PUMS estimate) lead to different estimated revenue impacts of welfare reform[74] because they are based on different estimates of work participation. The ratio estimates are lower. Thus, the ratio estimate can be viewed as more conservative and the PUMS estimate as more optimistic.[75]

Table 8
Estimates of Work Force Participation After TANF Assistance Terminates
(in % of mandated households)

	Ratio Estimate	PUMS Estimate
Richmond	61	58
Norfolk	28	42
Los Angeles	16	62
San Francisco	37	63
Cleveland	9	45
Columbus	17	67
Toledo	8	40
Dallas	24	72

Richmond is the only one of the eight housing authorities studied where the majority of mandated residents are estimated to find work, based on the more conservative estimate of work force participation. In fact, in most of the other housing authorities, work participation rates would fall below one-quarter. But based on the more optimistic assumption that mandated residents will behave like households they resemble, the majority of mandated residents are expected to find work in six of the eight housing authorities studied.

While it makes sense to consider the more conservative or lower of these estimates when projecting the fiscal impact of welfare reform on the HUD budget because this estimate calls for a greater response, the more optimistic estimate sets another kind of mark since it is the best case estimate. There is no way of judging which of these estimates will come closer to actual work participation rates, but the assumption is that they will fall somewhere between the more conservative and the more optimistic estimate.

In order to apply work participation rates to mandated public housing households for the purposes of estimating the impact of welfare reform on rent receipts, it is necessary to also impute a wage income. One source of such information is the HAs themselves. The income earning capacity of current non-welfare wage earners may be a good indication of the income earning capacity of mandated residents since the two groups share many similarities including

[74]In order to calculate the fiscal impacts of welfare reform, this study assumes that the number of residents now mandated will be seeking entry-level jobs when assistance terminates. In fact, some currently mandated assistance recipients will have left the welfare rolls by then and those who replace them could still be eligible for assistance which they can use to pay rent. Although this study does not utilize a dynamic model to predict the impacts of welfare reform on rent revenues, one possibility is that adverse fiscal impacts would be mitigated in the assistance termination year if some current tenants were replaced by households still entitled to assistance income. However, over a longer time frame, the churning created by welfare reform could reduce HA rent revenues considerably as successful households moved on and unsuccessful households clung to their public housing units. To some extent, housing authority policies affecting tenant mobility including evictions for failure to pay rent, marketing to working households, etc. will affect the longer term fiscal consequences of welfare reform.

[75]Richmond is the only one of the eight housing authorities studied in which the estimates of work participation based on predicted job growth are higher than the estimate based on the assumption that mandated residents will demonstrate the same work participation rates as the population they resemble.

place of residence. Among all eight housing authorities studied, wage income varies from a high of $13,705 in Los Angeles to a low of $8,467 in Norfolk.[76]

According to the more conservative estimate, five of the eight housing authorities studied would end up with lower levels of rent revenue than they now receive from mandated tenants. Based on this estimate and no change in housing authority minimum rent policies, there would be an increase over current rent revenues of as much as $697 annually per mandated unit, the case in Richmond, and a decrease of as much as $1,216 annually per mandated unit, the case in Los Angeles. Besides Richmond, Columbus and Dallas would also come out ahead. Using neighborhood level estimates of work participation based on predicted future job growth, rent revenues in Cleveland would drop further, from a decrease of $191 per mandated unit, the MSA level estimate of revenue impact, to a decrease of $466 annually per mandated unit.[77] In Columbus, rents will remain positive, going from $439 per mandated unit to $416 annually per mandated unit. In Toledo, though rents would still show decreases from current levels, the decrease would be moderated, going from $527 to $372 per mandated unit.

Whether mandated residents obtain employment and the amount of income they earn from work help determine if HAs can offset the potential losses stemming from welfare reform.

NET REVENUE IMPACT OF WELFARE REFORM*

	Per Mandated Unit ($)	Per Total Unit ($)
Richmond	+697	+183
Norfolk	-398	-100
Los Angeles	-1,216	-448
San Francisco	-253	-60
Cleveland	-191	-43
Columbus	+439	+110
Toledo	-527	-134
Dallas	+307	+76

* Increases or decreases over current rent revenues reflect the more conservative ratio estimates of work participation rates. The values shown here incorporate not only the effects of work participation but also the effects of minimum rents and residual income not affected by welfare reform.

Adopting the more optimistic assumption, every housing authority with the exception of Norfolk would exceed current rent revenues from mandated households, in some cases by a substantial margin. Thus, Dallas and Columbus would increase their receipts from mandated residents by $1,501 and $1,329 annually, respectively. Four of the housing authorities that would experience a deficit under the more conservative assumption would end up with an increase under the more optimistic assumption, including Los Angeles which is estimated to experience the greatest decrease under the less optimistic assumption regarding work participation.

[76]Selecting an annual income finesses the issue of hours worked and hourly wage rates. There are some residents who will work longer hours for lower wages and others who will work shorter hours for higher wages.

[77] Neighborhood estimates are based on taking the weighted sum of the revenue impacts in each of the Cleveland, Columbus and Toledo neighborhoods where residents are concentrated.

Los Angeles is the only HA where a majority of mandated residents, 61 percent, would have to work in order for the HA to break even, but according to the more conservative estimate of work participation, only one-quarter of those who would need to work, in order for the authority to break-even, are estimated to find jobs. In Columbus, Dallas and Cleveland, less than one-quarter would have to work, and even assuming the more conservative estimate, mandated residents are estimated to exceed this break-even work participation rate in Columbus and Dallas though not in Cleveland. Even under the more conservative assumption about work participation, only one-half of the Richmond and Dallas residents estimated to have jobs would actually need to work in order for these housing authorities to break even. According to the more optimistic estimate of work participation, only Norfolk residents are estimated to work at less than the break-even level.

V. THE IMPACT OF WELFARE REFORM ON TENANTS

Welfare reform will have impacts on residents of public housing that will differ depending upon their progress through the various stages of welfare reform. For example, during the early stage of most welfare reform programs, before assistance terminates, recipients are required to participate in activities related to work preparation and sanctions are applied when requirements are not met. These usually take the form of grant reductions rather than a complete withdrawal of assistance. Assistance recipients, however, do face termination of benefits when welfare reform time limits are reached. The potential consequences of this loss are much greater than those experienced under sanctions. When time limits are reached, the only way for residents to replace income is through employment. This section of the study explores variations in tenant income losses resulting from welfare reform and describes some potential unexpected changes in the composition of public housing authority tenancies.

A. Income Changes Due To Sanctions

Sanctions will affect a smaller portion of the income of mandated residents than the loss they will suffer if they cannot replace their welfare income with wages. Based upon previous program experience, a minority, though not an insignificant number, of residents might be expected to find themselves sanctioned for failure to comply with program rules.

During the initial three-year period in Virginia when mandated residents are still entitled to assistance, sanctions, not the termination of benefits, will be the main cause of income reductions. In Virginia, able-bodied parents receiving assistance are required to participate in work activities within 90 days after initial receipt of assistance. If they fail to show up for an assessment or attend a job readiness class, they receive a series of graduated sanctions. The first would be the loss of one month, followed by the loss of three months, followed by the loss of six months of benefits. Recipients can also be sanctioned if they fail to cooperate in identifying the fathers of children for whom assistance is provided, fail to see that children are attending school on a regular basis, or fail to have children immunized. Sanctions for truancy can lead to the removal of the child who is truant from the welfare grant. Failure to get a child immunized can lead to a $50 fine for the first child and a $25 fine for the next. Failure to cooperate in establishing paternity can lead to a 25 percent reduction in grant amount or the removal of the caretaker from the grant.

It is still too early to know how many households will end up being sanctioned although RRHA's Director of Social Services estimates that as many as one-third of mandated households might be subject to sanctions. The JOBS program provides another source of information on the prevalence of sanctions. Similar to VIEW requirements, enrollees were required to participate in job search or placement, job readiness, education, or work training activities. In Norfolk one-quarter of program enrollees were sanctioned because of some failure to meet program

requirements and in Richmond one-fifth of enrollees were so sanctioned.[78] These numbers are significant considering the fact that VIEW work participation requirements cover a broader population than the population covered by the JOBS program where selection criteria were stricter. Thus, under VIEW an even higher proportion of households might be expected to be sanctioned. On the other hand, RRHA reports that sanctions for failing to identify fathers, to have children immunized, or to comply with school attendance requirements have affected only a tiny fraction of those already enrolled in the VIEW program.

For the near term, NRHA resembles RRHA in that sanctions will be the major threat to the income of mandated residents. DSS will be aggressive in imposing sanctions if a client does not comply with the employability plan, for truancy and for failure to cooperate in establishing paternity, with a portion of the assistance grant deducted according to TANF rules.[79] The Housing Authority estimates that between 5 and 15 percent of mandated households with school age children might end up receiving sanctions on the basis of school attendance and that another 2 to 5 percent could be sanctioned for other forms of non-compliance.[80] In the past, DSS has found that some households don't respond to sanctions. These cases are referred to the Agency's fraud units because it is assumed that a person who does not protest loss of income could have some other unreported income source.[81]

B. Income Changes From Required Work Participation

Among mandated residents, as few as forty percent in Richmond and over 90 percent in Cleveland and Toledo could lose almost all cash income when their TANF assistance terminates and they are unable to find jobs, according to the more conservative estimates. Among all Norfolk and Richmond public housing residents, the growth rate of indigents will exceed the growth rate of working households and this could be true not only in Norfolk and Richmond, but in the other HAs studied here. In Los Angeles, 30 percent of all housing authority residents are estimated to end up with hardly any cash income, and Toledo is not far behind with 26 percent.

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[78]According to data from the Virginia JOBS program reported to HUD by the Virginia Department of Social Services.

[79]The State provides DSS with a list of truants accompanied by social security numbers so that they can be matched with client files to enforce sanctions. Beginning with the 1997-98 school year, NRHA will also receive attendance reports on public housing youth from Norfolk public schools, listing students who have missed 3 or more consecutive days of school during the month.

[80]Welfare reform necessarily places the Housing Authority and DSS in opposing camps. From the point of view of DSS, households who lose benefits because of sanctions free up resources for other households. In terms of the impact on the housing authorities, the income reductions as a result of sanctions automatically trigger lower rents. Both DSS and the Housing Authority agree that present rent rules have a perverse affect by rewarding sanctioned behaviors. The Housing Authorities would like to find a way, as the Portland Housing Authority has done, to maintain the rent levels of sanctioned households, and HUD's Public Housing Reform bill contains such a remedy. The bill would disallow reductions in public or assisted housing rents that are triggered by tenant income reductions caused by the application of sanctions for non-compliance with welfare or public assistance program requirements. The bill allows rent reductions related to drops in income that result from the termination of welfare assistance because of time-limits.

[81]The fraud unit finds fraud in about one-third of the cases that it investigates. In some cases, people have well paying jobs that they have not reported. But in other cases, the unit finds that the sanctions were unwarranted.

Because of special job accessibility and availability obstacles, mandated residents living in particular neighborhoods could end up especially disadvantaged. In the Cleveland neighborhood where the greatest concentration of mandated residents live, virtually none are estimated to find employment. In the comparable Toledo neighborhood, the situation is not much better. In these cases, there could be a wholesale loss of cash income to mandated neighborhood residents.

After the welfare reform clock runs out, the major income loss will come when income from assistance is not replaced by wages. Prior to welfare reform, even after paying rent, assisted residents have been able to retain the greater portion of their cash income. However, under a worst case scenario in which welfare income is not replaced after the clock has run out, RRHA residents not now working would lose $2,840 annually in cash income that they had left over after paying rent. Collectively, these households stand to lose over to $1.5 million in income that they have been receiving from welfare assistance. In Norfolk, the collective tenant losses would amount to over $460,000 in after-rent income. The income lost as a result of termination of benefits, however, represents only a portion of the income available to some mandated households. According to the experiences of the Housing Authorities and the State Department of Social Services, there are strong indications that many mandated residents have unreported sources of income.

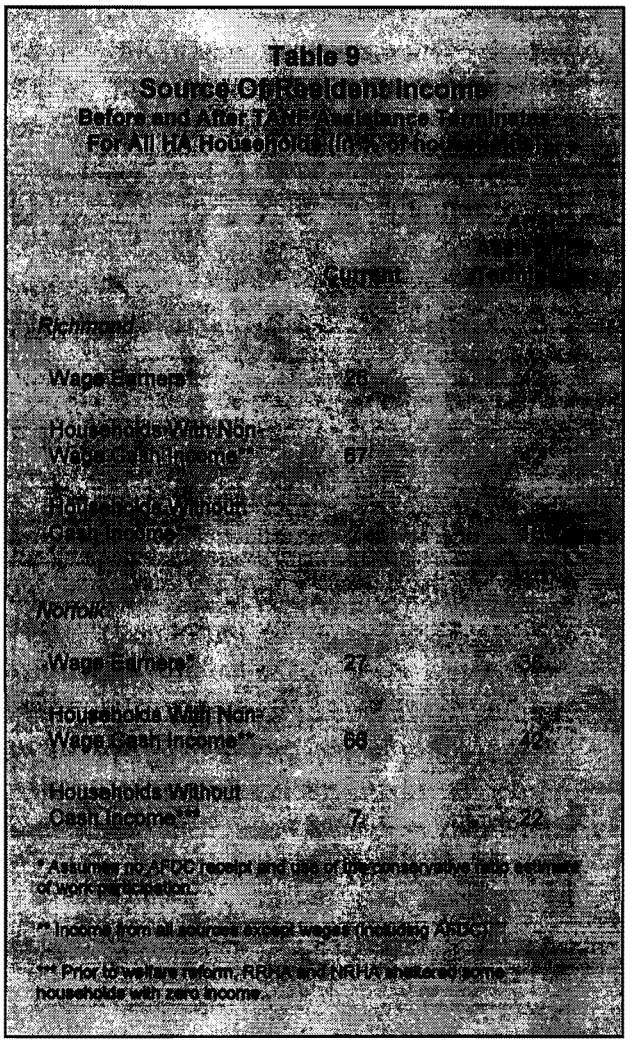

Table 9
Source Of Resident Income
Before and After TANF Assistance Termination
For All HA Households (in % of households)

	Current	After TANF Termination
Richmond		
Wage Earners*	26	26
Households With Non-Wage Cash Income**	67	42
Households Without Cash Income***	7	32
Norfolk		
Wage Earners*	27	38
Households With Non-Wage Cash Income**	68	42
Households Without Cash Income***	7	22

* Assumes no AFDC receipt and use of the conservative high estimate of work participation.

** Income from all sources except wages (including AFDC).

*** Prior to welfare reform, RRHA and NRHA sheltered some households with zero income.

Assuming that their incomes would approximate those of residents who are currently working, mandated Richmond and Norfolk residents who are successful in their job search should find themselves with at least twice as much after rent cash income than they had as TANF recipients although those who are successful in Richmond could be earning several thousand more than their counterparts in Norfolk.[82] Furthermore, their earnings will be enhanced as a result of the Earned Income Tax

[82]However, when the loss of non-cash benefits is factored in, it is less clear whether those with minimum wage jobs have improved their economic situation. In addition to rent subsidy, AFDC recipients were also entitled to Food Stamps and medical benefits which have monetary values. On the other hand, the Earned Income Tax Credit and any HA earned income disregards should add to the net value of income from employment.

Credit which could add substantially to their household income. Nevertheless, most of them will probably fall below the poverty line.[83] And their out of pocket expenses for child care and transportation could consume a large share of their disposable income.

On the other hand, both mandated residents who do find jobs and those who do not are likely to have continued access to shelter, an advantage they maintain over TANF recipients not receiving any housing subsidy. Even those recipients in public housing whose incomes are reduced to zero because they could not find jobs but still find ways to make minimum rent payments--$50 in Richmond and $25 in Norfolk--will maintain this advantage.

Estimates of work participation indicate that after welfare reform has runs its course, housing authorities will be providing shelter to a larger proportion of households with little or no income.

	PROPORTION OF ALL HOUSEHOLDS WITH LITTLE OR NO CASH INCOME	
	PRE-TANF	POST-TANF*
Richmond	7	16
Norfolk	7	22
Los Angeles	2	30
San Francisco	2	13
Cleveland	8	24
Columbus	4	17
Toledo	8	26
Dallas	11	22

* The number of households expected to have no source of cash income after welfare reform was added to the number of HA households who now have zero income.

Although RRHA and NRHA, like many other housing authorities, are interested in establishing a greater income balance among residents, welfare reform may result in greater representation of residents at both the higher and lower end of the income range (see Table 9). When TANF assistance time limits are reached, employed housing authority residents will increase as a group because previously unemployed TANF participants who are successful in finding jobs will be added to the ranks of TANF and non-TANF residents who are already working. But even as this group grows, the group of those with hardly any or no income will grow even more relative to its current size, as residents who until now have had assistance income, loose it. Hence, housing authorities may end up providing shelter not only to a larger group of working households but to a larger group of households who have been reduced to the status of long-term indigents. Prior to TANF, Housing Authority households at the bottom of the income scale were primarily those who had at least welfare income as well as a much smaller group of households, including the formerly homeless, who had not yet been signed up for AFDC, disability, or other benefits. In the Post-TANF environment, very-low income households will be replaced by households without any cash income and without much prospect of obtaining cash income.

Although an increasing proportion of housing authority residents may end up with little or no cash income, more and more units could also be occupied by relatively better off, wage

[83]In 1996 the poverty line was $12,600 for a mother with two children.

earning households. Just as the goal of achieving an income balance and shoring up rent revenues may be affected by the possibility that housing authorities will house a larger proportion of residents who have become indigent, so their ability to provide housing of last resort may also be affected by welfare reform. If wage earning households do not move on as their incomes rise, the units they occupy would not be available to low-income households. But, as welfare reform takes hold, there may be even more households in the future who will be unable to afford housing in the private housing market. Housing authority waiting lists could swell. Even if housing authorities wanted to recruit such households, they would have fewer resources for serving their needs.

VI. CONCLUSION

It may be concluded from this study that there is likely to be wide variation among housing authorities with respect to the impacts of welfare reform among housing authorities. But it is not so easy to provide a simple explanation for this. Besides geographic diversity, one reason for choosing the particular housing authorities for this study was the variation in State welfare program features, the assistance levels provided to mandated residents and such indicators of the strength of the local economy as unemployment rates. In addition, there was variation with respect to local policies such as the level of minimum rents charged. The fiscal impacts of welfare reform that are based upon the more conservative estimates of work participation do suggest that such factors play a role. Yet, multiple factors are at work in each housing authority making it difficult to pinpoint a particular explanatory factor.

For reasons having to do with the amount of wage income mandated residents could command to replace welfare assistance, some housing authorities are in the fortunate position of not needing many of their mandated residents to work in order to retain current rent levels. In four of the eight housing authorities, not many more than one-quarter of the mandated residents would have to find jobs, although in Los Angeles close to two-thirds would need to find work. Obviously, in housing authorities in which only a small minority of the mandated population needs to find work, the strength of the local economy will be less critical. This having been said, it does appear that the local unemployment rate proved to be a stronger indicator than state differences in assistance levels in explaining fiscal impacts based on the more conservative estimate of work participation.

For HAs within the same state there are large differences in rent revenues per mandated resident. In Virginia, RRHA is estimated to experience a very large increase, while NRHA is estimated to experience a decrease per mandated resident. There is a similar picture in Ohio. Even though both HAs in California are expected to suffer losses of rent revenue, there is great variation, with the estimated decrease in Los Angeles about five times larger than in San Francisco. Using a conservative job growth assumption, the three Housing Authorities for which welfare reform impacts are estimated to be positive, Richmond, Dallas and Columbus, are those with the lowest unemployment rates. The three housing authorities that are estimated to experience the largest drop in rent revenues as a result of welfare reform, Norfolk, Toledo and Los Angeles, have higher unemployment rates.

Because assistance income provided to residents of housing authorities within the same state is generally governed by a uniform payment standard, one expectation would be that the fiscal impacts of welfare reform at housing authorities within the same state should not be as varied as the fiscal impacts of reform at housing authorities located in different states. Yet, this does not seem to be borne out. Within state differences in fiscal impact are very great. Aside from the economy, minimum rent policy seems to play a substantial role. Though they are in different states, the two housing authorities in the study with minimum rents of $50, Richmond and Columbus, are both estimated to have increased rent revenues as a result of welfare reform. In considering appropriate minimum rent policies as a tool for mitigating losses in rent revenues,

however, there is a major tradeoff to consider: many residents may have great difficulty in paying higher or any minimum rents, perhaps even having to give up their public housing assistance.

In addition to minimum rent policies, other housing authority policies covering such areas as evictions, preferences, and income incentives can also significantly affect rent revenues, even before the impacts of welfare reform begin to register. Recently, Richmond has been able to double its rent revenues just by selecting working and other higher rent paying families from its waiting list. When the impact of welfare reform begins to affect the ability of mandated residents to pay rent, those evicted for non-payment of rent will obviously be much worse off than residents who continue to be sheltered despite losing their assistance income. This could be an important issue since, assuming a more conservative work participation estimate, the study shows that in most of the housing authorities, the majority of tenants would be unable to replace their assistance income with income from wages.

Neighborhood level information gathered for the three Ohio housing authorities demonstrates that the outlook for mandated tenants can be affected not only by the metropolitan economies in which they will conduct their job search but by such local factors as the number of entry-level jobs within reasonable commuting distance and the extent of competition from other, nearby entry-level job seekers. There are some neighborhoods where mandated residents are estimated to have virtually no job prospects. In these neighborhoods, there could be a much larger loss of income. The fixed location of public housing residents leaves HAs and the public housing program with the challenge of deciding the extent to which they should offer assistance to overcome some of the extreme disadvantage some residents will have in competing for a paucity of entry-level jobs and against large numbers of better prepared job seekers. Special intervention in especially impacted neighborhoods could be useful, but may not be feasible. If it were possible to provide additional assistance of some kind the question arises of whether it would be preferable to improve competitiveness, or to extend the "safety net" of benefits for some residents likely to be unsuccessful in searching for jobs.

APPENDIX A

GEOGRAPHIC DISTRIBUTION OF OF JOB OPENINGS

APPENDIX A

GEOGRAPHIC DISTRIBUTION OF JOB OPENINGS WITHIN THE CLEVELAND-AKRON, COLUMBUS, AND TOLEDO METROPOLITAN AREAS: DATA SOURCES AND METHODOLOGY[1]

This paper was prepared by Neil Bania and Laura Leete under a Cooperative Agreement between HUD and The Center on Urban Poverty and Social Change at Case Western Reserve University in Cleveland, Ohio. The focus of the paper is on estimating the total number of job openings and their geographic distributions in three Ohio MSAs--Cleveland-Akron, Columbus, and Toledo. The estimates are at the zip code level and are used as input data for a determination of job availability for specified mandated public housing residents and their competitors at the neighborhood level (see Appendix B and Section IV of this report). In addition, some of the Bania and Leete information is used directly in Sections II and IV of this report.

Bania and Leete develop five steps or "goals" necessary to produce estimates of job openings that welfare recipients and other low-income job seekers could qualify for at a level approximating the neighborhood. Essentially, the goals can be viewed as a disaggregation of industry employment data for a metropolitan area into occupational categories (rather than industry categories) and into zip codes rather than metro areas. These goals are sequential and include: estimating existing employment by 4-digit SIC codes and allocating them to zip codes within a specified MSA; converting "industry by zip code" data into "occupations by zip codes;" estimating net job openings by occupations for metropolitan areas and counties; allocating net job openings by occupational skill groups to zip codes; and computing the number of unemployed, the number discouraged, and the number of welfare recipients by Census tract and zip code. These steps require an assumption of an appropriate percentage of jobs that welfare recipients would qualify for. Here, Bania and Leete create a 4-group matrix, using education and skill data, and then assume that the first quartile of education is the minimum acceptable credential.

Bania and Leete go on to test the efficacy of alternative industry employment datasets by comparing ES202 and County Business Patterns industry employment reports. Essentially, they report that both are likely to produce similar results. The choice of data, therefore, rests on ease of use and there, the authors suggest that County Business Patterns data are both easier to obtain and somewhat easier to use.

What follows is a discussion of how Bania's and Leete's goals were accomplished for this study. The process and computer programs necessary to replicate the methodology in any MSA are fully documented and available.

The implementation of welfare reform, with an emphasis on moving people from welfare to work, has raised various questions about the ability of local labor markets to fully absorb everyone who is seeking employment. Specifically, policy makers and program administrators need to know the number and location of expected job openings which are skill and education appropriate for welfare recipients. This appendix describes in detail a method for developing estimates of job openings for low skill occupations at the zip code level within three metropolitan areas: the Cleveland-Akron CMSA, and the Columbus and Toledo MSAs. The method is general and sufficient detail is provided here to replicate this methodology for any metropolitan area in the United States. Estimates can be updated annually.

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[1]Neil Bania and Laura Leete, Center on Urban Poverty and Social Change, Case Western Reserve University, Cleveland, Ohio.

Overview of Methodology

General Description: In order to develop estimates of the number of job openings which are education and skill appropriate for welfare recipients, we use estimates provided by the Ohio Bureau of Employment Services. To group these occupations into four discrete education/skill categories, we use information on the job content for a given occupation as well as the distribution of education of those who are currently filling the occupation. To develop estimates which are geographically detailed (at the zip code level), we use employment data for industries by zip codes from the Zip code version (CD-Rom) of the County Business Patterns file. Next, employment by industry is converted to employment by occupation using an industry-occupation matrix derived from the 1990 Census (Five percent Public Use Micro Sample -- PUMS). This method assumes that every firm in a given industry uses the same set of occupations regardless of geographic location. Finally, we compute the number of unemployed, discouraged workers, and welfare recipients using census data (PUMS and Summary Tape File 3A – STF3A). These estimates are then allocated to the zip code level and to the census tract level based on the incidence among various population subgroups and the geographic distribution of those population subgroups.

This paper has three parts. First, we describe our methodology in section I. In section II, we provide sufficient detail and explication of computer programs needed to implement this methodology elsewhere. Finally, we report on our analysis of the use of County Business Patterns versus ES202 data as the basis of our estimates.

Description of Methodology

The methodology for creating zip code level estimates of low skill job openings for the Cleveland-Akron, Columbus, and Toledo metropolitan areas consists of five steps.

Employment by Industry for Zip Codes

First, we estimate employment by industry from the County Business Patterns file. The County Business Patterns data file reports total employment and the number of establishments by four digit SIC code in various employment size classifications. These data must be converted to point estimates of employment by industry for each zip code. An alternative data source is ES202, which reports actual employment for individual establishments at the address level. Each record also includes four digit SIC codes. The advantages and disadvantages of using ES202 and County Business Patterns are discussed below.

Employment by Occupation by Zip Codes

Second, we convert industry employment estimates to occupation employment estimates using an industry occupation matrix. The matrix is derived from the 1990 Five Percent PUMS

file for each metro area.[2] Sensitivity analysis is used to determine the validity of imposing metropolitan wide industry occupation matrices on smaller geographic units. We conclude that this method introduces only a small error and that it is a reasonable method for estimate employment by occupation.

Projected Job Openings by Occupation

Third, we use projected job openings prepared by the Ohio Bureau of Employment Services to form detailed occupational estimates for counties or groups of counties within each metro area. Projections of the expected number of annual openings by occupation for the years 1991-2000 were taken from the Ohio Bureau of Employment Services (OBES, 1993. Annual job openings come from two sources: the annual growth projections for each occupation and the expected number of net annual replacement openings. These projections are full-employment forecasts; they forecast changes in equilibrium employment, anticipating normal labor force growth.[3]

In the Cleveland-Akron area, we were able to develop projected job openings separately for six (Lorain, Cuyahoga, Medina, Lake, Portage, Summit) of the metropolitan areas eight counties. Ashtabula and Geauga counties could not be separated. Thus, we had different rates of projected job openings for 7 distinct geographic areas in the Cleveland-Akron metropolitan region. In the Columbus and Toledo metropolitan areas, we were able to develop separate estimates for the central counties (Franklin and Fulton respectively) and for the reminder of the metropolitan area. Less detail was available due to the smaller size of these regions.

Employment by Broad Occupation Skill/Education Levels for Zip Codes

Fourth, we used the distribution of employment by occupation (developed in step 2) as a basis for allocating the net openings within a specific geographic area. Thus, if we know that zip code 44113 (located in Cuyahoga county) currently contains 10.5% of the county's employment of stock clerks, then we would allocate 10.5% of Cuyahoga counties projected net job openings for stock clerks to zip code 44113.

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[2]Alternately, one can use the distribution of industry employment across occupations which is estimated for all of Ohio by OBES. However, because data for any industry/occupation combination with less than 100 employees is suppressed in this dataset (for confidentiality) considerable detail is lost, and extensive industry/occupation aggregation is required. A preliminary analysis found that the OBES data was available for 4,915 detailed (slightly aggregated 3-digit codes) industry/occupation combinations, while the Census data provided information on 8,806 such combinations. For this reason we use the Census occupation/industry employment breakdown.

[3]Ohio's occupation and industry employment projections are derived from the national projections prepared by the U.S. Bureau of Labor Statistics. Rosenthal (1992) finds the level of Bureau of Labor Statistics occupation projections for the period 1980-90 to be quite accurate, with actual employment in 1990 totaling 1 percent more than projected employment. Differences between actual and projected employment for the aggregate occupational groups were also generally quite small, with five out of eight major groups exhibiting projection errors of less than 6 percent. At the detailed occupational level, projections of the magnitude of occupational growth and decline exhibited a conservative bias, where the projected degree of growth or decline was smaller than that actually experienced. Less (1992) evaluates Ohio's industry employment projections for the period 1985-1990. Detailed industry employment projections during this period exhibited a weighted mean absolute projection error of 14.4 percent at the 1-digit level of disaggregation. Much of the error in these estimates resulted from failing to forecast that Ohio's longer than average recovery from the 1981-82 recession and associated the structural shift from manufacturing to services that occurred in Ohio during this time period.

In addition, we grouped the occupational categories reported on the Census into four discrete skill/education based categories. As a starting point, we identify those occupations which could be considered to represent job opportunities for current welfare recipients. In order to reduce the list of 407 occupational classifications reported in the Census to a more manageable set, we identified three categories which represent occupations with relatively homogeneous skill and educational requirements. They are: entry-level occupations, requiring 11 or 12 years education and less than six months of job-specific training; short-term training occupations, requiring high school graduation and 6 to 12 months of additional education or training; and long-term training occupations, requiring from 1 to 3 years of post-secondary education and/or training (possibly corresponding to community college or vocational education).

We assign occupations to these categories on the basis of occupational skill content, for which we use two types of measures: First, we measure occupational requirements via the general educational development (GED) and specific vocational preparation (SVP) scores developed by the U.S. Department of Labor in *The Dictionary of Occupational Titles* (U.S. Department of Labor, 1977).[4] These measures are an idealized version of the training and skills an employer would like to see in an employee. In order to select occupations consistent with each public policy scenario, we used three measures of occupational requirements for each of 407 occupational categories found in the 1990 Census.[5] These measures are the general educational development (GED) and specific vocational preparation (SVP) required for an occupation, and the actual education of those currently employed.

GED and SVP are both measures of job content developed by the U.S. Department of Labor for the 12,000 occupations described in the fourth edition of the *Dictionary of Occupational Titles* (1977).[6] GED captures:

> "those aspects of education that contribute to the workers' reasoning development and ability to follow instructions; and the acquisition of 'tool' knowledge such as languages and mathematical skills" (U.S. Department of Labor, 1956, pp.-vi).

Jobs are rated on a scale of 1 to 6 for the level of reasoning, mathematical and language development needed (see attached material for a description of each of these levels). An occupation is then assigned the highest of these three scores as its final GED level. The SVP scale indicates (in ranges of months) the total amount of training time needed in order to perform

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[4]GED captures "those aspects of education that contribute to the workers" reasoning development and ability to follow instructions; and the acquisition of "tool" knowledge such as languages and mathematical skills" (U.S. Department of Labor, 1956, pp. vi). The SVP scale indicates (in ranges of months) the total amount of training time needed in order to perform in an occupation at an average level. Despite some limitations, many have argued that the GED and SVP are still the richest available source of information on the job content of the U.S. economy (e.g. Spenner, 1983, Miller et. al., 1980).

[5]We limit our analysis to those occupations in which at least 100 individuals were estimated to be employed in the Cleveland-Akron metropolitan area in 1990. Our occupational categories are slightly aggregated versions of 506 Census categories; this aggregation was necessary in order to make the Census occupational categories match those used by Ohio Bureau of Employment Services. All calculations from Census data refer to individuals who report that their place of work is in the eight-county Cleveland-Akron metropolitan area; a geographic definition which will be compatible with our future work in this area. The difference between the six- and eight-county areas should not affect any calculations here.

[6]These 12,000 detailed occupations are then aggregated into the 407 broader occupational categories used here.

in an occupation at an average level (see attached material for the ranges). This training time might include all types of vocational schooling, on-the-job training, and/or actual job experience.

The GED and SVP scores used here were developed by the Department of Labor between 1966 and 1976. The scores were assigned by analysts following their observation of workers on the job, and interviews with company officials and human resource personnel. They were intended to reflect the skills and development needed for average performance in a given occupation. Despite some limitations, many have argued that the GED and SVP are still the richest available source of information on the job content of the U.S. economy (e.g. Spenner, 1983, Miller et.al., 1980).[7] Second, we measure actual worker characteristics in each occupation using data from the Five Percent Public Use Microdata Sample (PUMS) of the 1990 Census on the education levels of workers in an occupation in the Cleveland-Akron, Columbus, and Toledo metropolitan areas. To measure minimum acceptable education levels for workers in a given occupation, we compute the first quartile of education in each occupation. Far from being idealized, this is a measure of the characteristics of workers actually hired into an occupation under current conditions in the local labor market.

We look at both types of measures for each of 407 occupational categories. Using factor analysis on GED, SVP and the first quartile level of education, we construct a "skill content" index which rises with each of these variables. Occupations are ranked by this index and cut-points are selected to create each group of occupations.

Computing the Number of Persons Seeking Employment

Fifth, we use the five percent Public Use Micro Sample (PUMS) data to estimate the number of persons who meet the following criteria: unemployed at the time of the census (April 1, 1990); not unemployed but available for work at the time of the 1990 census; or received public assistance income during calendar year 1989. These estimates were produced at the Public Use Micro Area (PUMA) level. PUMAs are geographic areas which contain at least 100,000 persons but sometime contain as many as 200,000. In Cuyahoga county, there are 11 PUMAs. Sometimes, one county is a PUMA – as in the case of Medina county. However, sometimes two or more counties form a PUMA (as in the case of Ashtabula and Geauga counties). In order to allocate these estimates to lower levels of geographic units (census tracts and zip codes), we produced our PUMA-level estimates separately for 48 distinct age, racial, and education population subgroups. Then these estimates were allocated to tracts within each PUMA according to the distribution of that population subgroup across tracts within a given PUMA. Finally, tract level estimates were then aggregated up to zip codes. In the few instances where tracts cross zip code boundaries, we use the portion of land area as an allocation method to spilt the tract total across zip codes.

[7]Miller et.al. (1980) report that the sampling methodology used to select firms for observation was ad hoc and that manufacturing firms were consistently oversampled. In addition, concerns have been raised regarding the accuracy of these scores twenty to thirty years following their creation. In the ensuing time period jobs may have been either upgraded or deskilled; empirical work finds evidence of both (e.g. Cappelli, 1993, and Keefe, 1991; see Spenner, 1983, for a review) with no clear conclusion regarding the net effect.

II. Methodological Details

The following section provides detailed information about the algorithm and computer programs needed to implement the methodology described above. Enough information is given so that the reader could easily implement this methodology in another metropolitan area.

Summary of Steps To Implement the Methodology:

Step 1 Estimate employment from the County Business Patterns by zip and industry.
Step 2 Convert employment estimates from industry to occupation.
Step 3 Compute net job openings by occupation for metro areas and/or counties.
Step 4 Allocate net job openings by occupation skill groups down to zip code level.
Step 5 Compute unemployed, discourage workers, and welfare recipients by zip code.

Data Files Needed for Step 1:

- County Business Patterns data files (from the CD-ROM):
- CBPSUM.DBF
- CBPZPXSC.DBF
- REFZIP.DBF
- REFSIC.DBF
- Industry cross walk: SIC code to Census Industry Code (CIC).

Files Needed for Step 2:

- 1990 Five Percent Public Use Micro Sample (PUMS) for Ohio
- Occupation Cross walk: Census Occupation Codes to OES occupation codes
- Industry Cross walk: CIC to SIC codes
- Zip code to County cross walk (with population and land area shares)

Files Needed for Step 3:

- Net Job opening projections for State, including a list of all occupations in state
- Net Job openings projections for counties or other geographic areas within metro areas
- Occupation Cross Walk: OES to Census Codes

Files Needed for Step 4:

- 1990 Five Percent Public Use Micro Sample (PUMS) for Ohio
- Occupation cross walk: Census Occupation codes to OES
- Industry cross walk: Census Industry Classification Codes (CIC) to SIC codes
- GED/SVP data for occupations

Files Needed for Step 5:

- 1990 Census of Housing and Population, STF3A for Ohio
- 1990 Five Percent Public Use Micro Sample (PUMS) for Ohio
- Census tract to zip code cross reference file, including land area shares

Detailed Methodology and Description of Computer Programs.

Step 1: Estimate employment from the County Business Patterns by zip and industry.

Goal: County Business Patterns contains data for total employment by zip code. In addition, the file reports the number of establishments in various employment size classifications. The goal of this step is to develop estimates of employment by 4-digit SIC code for each zip code. In a final step, SIC codes are converted to Census Industry codes (CICs).

Description of the Data Set: County Business Patterns data for zip codes are available from the Census Bureau on a single CD-ROM. The file covers the entire United States and as of December 1997, the most recently available data are for the first quarter of 1994. The data are collected from the filings that business establishments make in order to comply with the requirements of the Social Security Administration.

In brief, the data file contains total employment, the total number of establishments, the number of establishments by various employment size classifications, and the total payroll for each 5 digit zip code in the United States. In addition, all but the employment variables are reported for each four digit standard industrial classification (SIC) code.

Methodology: In order to develop estimates for the number of employees by zip code and SIC code, we used information on the total employment by zip code and the number of establishments in various employment size classifications. First, we developed an estimate of the total employment by SIC by multiplying the number of establishments by the number of workers in each establishment. We assumed that employment in a given establishment was equal to the midpoint of the employment size classification in which it was reported. Thus, if there were 12 establishments in the "one to four employee" size classification, we estimated total employment for that zip code, SIC code, and employment size classification as being equal to: 12 establishments x 2.5 employees per establishment = 30 employees. For the top coded category (over 1,000 employees) we assume that all establishments had exactly 1,000 employees.

Next, we summed the employment for all employment size classifications and all SICs within a given zip code. This estimate was then compared to the actual number of workers in a given zip code. If the estimate was low (high), then we followed this procedure:

- we "scaled up (down)" the estimated number of workers in each establishment (which was just the mid-point of the employment size classification) by the appropriate percentage. Thus, if our first employment estimate was 10% too low, we would "scale up (down)" the mid-point estimates by 10%.

- If we apply these scale factors exactly to our "first cut" employment estimates described above, we would match exactly the total employment in that zip code. However, doing so might possibly violate the known minimum and maximum employment totals that are possible for each employment size classification range. These ranges are know because we know the number of establishments that fall into each employment size classification. Thus, if there are 12 establishments reported in the "one to four" employee employment size classification for a given zip code and SIC code, then we know that these must be at least 12 and no more than 48 workers in that group of 12 establishments.

- To account for these constraints, we never let our estimate fall outside the range of the reported employment size classification. For example, the mid-point is 2.5 for the one to four employee size classification, and if our scale factor was 70%, then this would result in a new employment estimate of 4.25 (2.5 plus the 70% scale factor) workers per establishment, which is clearly not possible (all establishments must have between one and four employees). Thus, we force the employment estimates for a given employment size classification to be consistent with the minimum and maximum employment values possible in that employment size classification range. For the top coded category (over 1,000 employees), we would scale up but we would never scale downward.

Because the appropriate scale factor would not necessarily yield an estimated employment total which would match the actual reported employment for each zip code, we would follow an iterative procedure. We repeatedly applied the above process until our estimated employment in a given zip code exactly matched the known total for that zip code. There were a few instances in which it was not possible to choose a set of "scale factors" that would yield employment estimates that summed exactly to the reported total and were entirely consist with the employment size classifications reported in the data set. These anomalies are obviously inconsistent with the data and are thus indicative of an error in the original data file. That is, there exist no distribution of establishment sizes which are consistent with the minimum and maximum bounds and yield the reported total employment. Fortunately, in Ohio, with a total employment of over 4 million, these cases accounted for only a total of 47 employees. Therefore, we ignore these anomalies.

Step 2: Convert employment estimates from industry to occupation.

Goal: To convert the industry by zip code employment estimates created in step 1 to occupation by zip code.

Methodology: The method is straight forward except for two issues which arise due to slightly incompatible classification schemes. First, we use the 1990 5% PUMs to compute an industry occupation matrix for each metro area. On the five percent PUMS, metro areas are not directly identified. However, using collections of Public Use Micro Areas (PUMAs), it is possible to approximate the official metropolitan area definitions. For the Cleveland-Akron

CMSA, the correspondence is exact. For Columbus and Toledo, we selected PUMAs which included the entire MSAs, and two additional counties in Columbus and one additional county in Toledo. Since the industry occupation matrix is a proportional allocation method, the higher totals in Columbus and Toledo do not matter.

The PUMS using the Census Occupation Classification and the Census Industry Classification codes. These are incompatible with SIC and OES occupations codes. Therefore, we developed a cross walk to facilitate the conversion. Finally, some zip code boundaries cross county boundaries. This means that part of a zip code may lie outside of the metro area boundary. We developed a zip code to county cross walk, which included population and land area shares so that we could allocated employment by within such a zip code between the two counties.

The industry occupation matrix reports the distribution of the percent of workers in a given industry across occupations for a given metro area. Thus, for a given zip code in a metro area, we assume that the employment distribution across occupations for each industry does not vary geographically: If there are 10 workers in a given industry and 50% of the workers in that industry in the relevant metro area work in occupation A, then we assume that this industry will contribute 5 workers to occupation category A. If industry staffing patterns (occupations) are not related to geography, then this is a good assumption. If, on the other hand, industries vary their occupation staffing according to their location, then this assumption is suspect. To address this question, we use this methodology to estimate employment by occupation for PUMAs located within the Cleveland CMSA. The estimated employment by occupation was then compared to the actual employment by occupation for each PUMA. We find that employment estimates vary from actual employment by about 5% (Leete and Bania, 1997).

Step 3: Compute net job openings by occupation for metro areas and/or counties.

Goal: Develop estimates of net job openings by occupation for metro areas and for counties (or groups of counties) within the three metro areas.

Methodology: Estimates of net job openings by occupation can be obtained from the Ohio Bureau of Employment Services (OBES). Estimates are tabulated for the State, for each metro area and for Service Delivery Areas (SDAs) which are typically counties or groups of counties. Estimates are suppressed when the total employment is given cell (geography and occupation) is less than 100. Thus, suppression increases as the size of the geographic decreases. To fill out the estimates and to insure that we have a "balanced" set of data files, we imputed the missing occupational categories. The imputation method involved using the share of employment at the state level in a given occupation category. Using this share, we allocated the residual unassigned net job openings for the lower level of occupational detail in the classification scheme. Typically, the total number of net job openings imputed was less than 5% of the total for a given geographic area. Including this step is mostly a computation convenience, the imputation process does not affect the total job openings significantly.

Interpretation of Net Job Openings: These estimates are the number of new job openings which are expected to become available and be filled in a typical year between 1995 and 2005. Thus, are estimates of labor demand and labor supply changes in a typical year in equilibrium. These estimates do not include cyclical effects and assume a steady state full-employment economy. Most important, these estimates do not represent job vacancies. If, due to welfare reform or any other sudden shock to the economy, the labor supply would suddenly and unexpectedly increase, then the economy would have to generate additional job openings to absorb this increase. See Leete and Bania for more discussion of this point. Also, see Mishel (1995) and Bloom (1997) for a discussion of possible labor market changes due to welfare reform.

Note: We define net job openings as the sum of the number of "growth openings (which can be positive or negative) plus the number of replacement openings (which can only be positive). Unlike the OBES method, we allow growth openings to be negative instead of assigning a zero value when growth openings are less than zero. Thus, if there is a need for 10 replacement workers, but expected growth is -7, which define net openings to be 3. OBES would define this as 10, which creates an upward bias in their estimates.

Step 4: Allocate net job openings by occupation skill groups down to zip code level.

Goal: Develop estimates of net job openings by occupation for zip codes within the three metro areas and develop a method for classifying occupations into four broad skill categories.

Methodology: The estimated number of job openings for each county or group of counties in a metro area is allocated down to the zip code by using the distribution of employment in that occupation and county (county group) across zip codes. Occupational characteristics are created by merging the GED/SVP data with education levels (the first quartile of education) by occupation. A complete description of the GED/SVP is contained in Leete and Bania (1997). These three variables (GED, SVP, and the first quartile of education) are combined using factor analysis to create a single factor (or score). This score can then be used to create four discrete occupational groupings. These are designated as entry-level occupations, then short term training occupations, long term training occupations, and high skill occupations. Occupations which are male dominated (that is over 85% male) are excluded from the estimate of job openings. This is because the welfare population is over 90% female and it is unlikely that these jobs will offer much in the way of employment opportunities for former welfare recipients.

Step 5: Compute unemployed, discourage workers, and welfare recipients by zip code.

Goal: Compute the number of unemployed persons, persons available for work (discourage workers), and public assistance (welfare) recipients. Develop estimates of these numbers by census tract and zip code.

Methodology: We use the 1990 PUMS (5% file) to estimate the number of unemployed persons at the time of the 1990 Census. We also include the number of persons who were not

unemployed but who were available for work (discouraged workers). Finally, we included any person who received public assistance income in the year prior to the Census (1989). Using this method, we hope to identify those who might be seeking employment and thus are "competing" for the limited number job openings.

The methodology of using the PUMS to compute these numbers is straightforward. However, the lowest level of geography in the PUMS is the PUMA, an area of about 100,000 persons. Thus, we compute these estimates at the PUMA level for separately for various age, education, and racial subgroups. For example, there might 50 persons in a given PUMA who are African American, high school graduates, between the age of 25 and 49 who also fall into the unemployed, discouraged, and welfare recipients groups. Next, we identify the census tracts which belong to a given PUMA and compute the distribution of various population subgroups across tracts in the PUMA. Thus, we might compute that tract 1234 in a given PUMA has 2.1% of the PUMAs African Americans who have high school degrees and are between the age of 25 and 49. Thus, we would allocate 50 x 0.021 = 1.05 persons (who are unemployed, discourage, or welfare recipients) to tract 1234. Our total estimates for each tract are built by following this allocation scheme for each of the relevant population subgroups.

Finally, the tract level estimates are aggregated to the zip code level using a tract to zip code cross walk file. When tracts cross zip code boundaries, we allocate the total using the land area shares of the tract – if 75% of a tract falls into one zip code, then that zip code receives 75% of the tract total.

III. ES202 vs. County Business Patterns as Data Source for Industry Employment

The basis of the methodology described above rests on a data file which describes employment by industry for some small geographic unit (such as a zip code or census tract). We report here on the use of the ES202 unemployment compensation files in lieu of the County Business Patterns Zip Code (CD-ROM) data base. The methodology described (steps 2 through 4) above could be implemented using any data file that describes employment by industry for zip codes or some other small geographic unit.

ES202 contains data on employment for every reporting establishment with one or more employee. Summary reports from the ES202 data indicate that the coverage is quite complete and that total employment estimates for states and counties compare favorable with other data sources on employment.

The main advantages of the ES202 data are as follows:

- **Geographic Description**. In principle, the exact address is included on the ES202 for each establishment location. Thus, it is possible to assign the establishment to any geographic unit, including zip codes, census tracts, census block groups, or even census blocks.

- **Exact Employment is Reported**. The ES202 file reports employment for each month and the files is produced and updated quarterly. Thus, it is possible to track changes in employment with great frequency.

- **Data are reported in a Timely Manner**. Data are available with a lag of about 6 months, so frequent updates are possible and analysis will not be outdated as quickly.

- **Four Digit Industry Code is Reported**. Each establishment reports a four digit industry SIC code, so it is possible to assign occupations on the basis of the most detailed industry information.

- **Name of Establishment is Reported**. Since the name of the establishment is reported, it is possible to verify the accuracy of the data. In addition, it is possible to contact employers for surveys or to involve them job training or other programs.

The main disadvantages of the ES202 data file are:

- **Address information is often inaccurate**. Addresses reported should be the location of the work site. However, many companies use their headquarters address or even the address of a third party such as an accountant or law office which fills out the paperwork for the company. In other work, we report that

nearly 25% of the ES202 data records are inaccurate at the zip code level.[8] Accuracy is probably worse for smaller units of geography.

- **Confidential Data**. ES202 is a confidential data set requiring that the users jump significant legal hurdles to gain access to the data. In some states, access is not allowed for research purposes.

- **Data are Difficult to Verify**. Although the name of the establishment makes verification possible, the size of the file and the limited amount of other information on the employment levels in firms makes verification costly at best and problematic at worst.

On the other hand, County Business Patterns has some significant advantages. These include:

- **Available for entire U.S.** This file is available in single standard format for the entire United States. Researchers can develop methodologies similar to ours and the results can be shared and implemented elsewhere. The data set is not confidential and is easily purchased and used as it comes a CD-ROM disk.

- **Data include Four Digit SIC Code**. County Business Patterns data use the standard four digit industry SIC code. This makes integration into other data sets easy.

- **Already Aggregated to ZIP Code Level**. The data are already aggregated to the zip code level, which is probably the most appropriate geographic unit for analyzing local labor markets. Census tracts are too small and too numerous. Counties are too large for understanding the implications of access to jobs. Zip codes represent a compromise.

The County Business Patterns data also have significant disadvantages. These include:

- **Long Delay in Availability**. As of September 1997, the most recently available data set was for March 1994. This represents a lag of 3 and ½ years, which is about 3 years longer than ES202.

- **Reports Interval Data for Zip Codes/Industries**. This requires an elaborate imputation scheme to develop point estimates for employment by zip code. Obviously, this introduces more error in the process.

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[8]Establishment location information in these records is not always accurate, as it sometimes represents the location of company headquarters or of a personnel management or accounting firm responsible for filing the report. Comparing a random sample of 2,304 establishment records (stratified by county and firm size) to 1994 phone books, we estimate that 74 percent of all establishments are reported in the correct zip code. Since not all establishments are listed in the phone book by the exact name reported in the ES-202 data, this is a lower bound for accuracy. Error rates were not distinctly different between counties or among large or small firms. Among the 40 zip codes with the largest employment, the share of reported employment which was falsely reported in those zip codes averaged 11.4 percent; the share of reported employment which was falsely reported in other zip codes averaged 13.8 percent.

- **Data cannot be directly verified.** No names of companies are reported, so the data cannot be verified and employers cannot be contacted from this data set.

Criteria for Comparing ES202 and County Business Patterns

An empirical comparison of the two data sources is difficult because of the absence of a standard, that is, we don't know the true employment level by industry and by zip code, so we really have no basis for judging whether one data set is more accurate than the other. Therefore, we propose the following set of criteria for judging which data set to use for the application described in this paper. Because of ease of use, non-confidentiality, and ease of replication across the United States, we would choose the County Business Patterns if the results obtained from the analysis with ES202 and County Business Patterns are substantially similar.

We define "substantially similar" in the context of this application as:

11. Is the distribution of the net job openings in low skill occupations across zip codes similar for ES202 based estimates and County Business Patterns based estimates? Specifically, is the correlation coefficient at least 0.90?

2. Is the list of the top zip codes ranked by total low skill job openings using the ES202 method contain the same members as the list based on the County Business Patterns method? Specifically, does the list of top ten zip codes ranked by low skill job openings based on the two methods contain at least 7 common members?

3. Among the zip codes with the largest number of low skill job openings, are the two sets of estimates close to each other? Specifically, among the set of zip codes with the 20 largest number of low skill openings based on either measure, do 75% of these zip codes fall within 30% of each other?

The correlation coefficients between the entry-level job openings estimates based on the two methods are 0.895, 0.963, and 0.935 for Cleveland-Akron, Columbus, and Toledo respectively. In the Cleveland-Akron metropolitan area, the top ten lists of zip codes produced by each method contains 8 common members. For the Columbus metropolitan area, there are also 8 common members, while the Toledo metropolitan area has 7 common members. Finally, among the zip codes with the largest number of entry-level openings (top 20 zip codes based on either measure), we find a significant percentage of the zip codes have job openings estimates within 30% of each other. In Cleveland-Akron, 21 of 25 zip codes are within plus or minus 30%. In Columbus, the figure is 16 of 23 zip codes and in Toledo it is 14 of 22 zip codes.

The results are clear – while there are differences in the two sets of estimates, these differences are not substantial enough to justify choosing ES202 over County Business Patterns. (indeed, it is not clear on what basis we would choose the ES202 based estimates over the County Business Patterns based estimates). Fortunately, the two sets of estimates are similar enough that we conclude either estimate yields substantially similar results.

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APPENDIX B

THE DERIVATION OF JOBS-TO-WORKERS RATIOS

APPENDIX B

THE DERIVATION OF JOBS-TO-WORKERS RATIOS[1]

This paper was prepared by Virginia Carlson under a Cooperative Agreement between HUD and the School of Architecture and Urban Planning of the University of Wisconsin-Milwaukee. Essentially, Carlson's work picks up where Bania and Leete left off; it uses their zip code level occupational job estimates and locations as input data to develop ratios of job seekers to jobs within neighborhoods of Cleveland, Columbus, and Toledo. To do this, Carlson determines the number of jobs available to welfare recipients based on where they live, where jobs are located, and how many other people are likely competing for the same jobs. A distinction is made between jobs that are "accessible" within commuting distance and jobs that are "available" taking competition into account. Carlson employs GIS technology in order to generate commuting ring patterns for mandated residents and their competitors. Section IV of this report relies heavily on Carlson's work.

There are several intermediate steps that Carlson develops, in conjunction with HUD, in order to reach a bottom-line. They are: determining the number and location of public housing residents affected by welfare reform; determining the number and location of all welfare recipients within an MSA; determining the number and location of other low-skilled competitors for entry-level jobs; determining the number and type of available jobs; and determining typical commuting patterns within an area.

Of special note is that Carlson's work offers important advancements to the knowledge and methodology of labor market analysis especially through the use of place-specific job and worker variables as overlays onto geographic boundary files and through the accounting for activity in nearby geographies (including the number of competitors contained therein). Of note also is that the use of sophisticated GIS software along with the Census of Transportation Planning Package (CTPP) permitted a degree of specification of commuting patterns not achieved elsewhere in the literature. Moreover, previous work in this area rarely, if ever, accounted for the effects of competition for jobs among individuals in nearby communities or in more suburban locations. Finally, Carlson employs both "distance ring" and CTPP contours to estimate job seeker-to-job ratios. The use of CTPP contours permits calculations of commute zones based on existing transportation infrastructure and tabulations of places to which people within specified areas actually do travel.

This project posed a unique challenge—to estimate job availability for welfare recipients given several parameters: the location and number of individuals on assistance, low-skilled labor market competitors, the number and type of jobs of available, and typical commuting patterns. Previous work on job availability in the context of welfare reform has been very thorough with regard to careful estimation of appropriately-skilled jobs, and with accounting for labor market competition (Carlson and Theodore 1995, Kleppner and Theodore 1997, Steuernagel 1995). However, less research has been done which makes more geographically precise estimates by considering the match between the location of jobs and typical commuting sheds for workers. This paper first looks at the means by which recipients, competitors, and jobs are estimated, then turns to a discussion of the geographic derivation of workers-to-jobs ratios.

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Geography, Commuting, and Job Seekers-to-Jobs Ratios

The goal was to develop seekers-to-jobs ratios for individuals in neighborhoods. How many jobs are available to a typical TANF recipient in a given neighborhood, taking into account jobs available in their commuting reach, and given that there is competition for jobs from individuals in their neighborhood as well as other neighborhoods? Geographic specification comes into play here both in the definition of jobs available within a commute, and in the identification of possible competitors. The derivation of our ratios required five steps: the definition of neighborhoods, the definition of neighborhood commute zones, identification of jobs within commute zones for each neighborhood, the specification of job seekers, and the final calculations of ratios.

It should noted that the methodology discussed here represents a unique application of Geographic Information Systems (GIS) analysis. The complex geographic analysis presented here would not have been possible without the use of a sophisticated spatial analysis software. ARC/INFO 7.11 for NT, a (GIS) package developed by Environmental Research Systems Institute, Inc. (ESRI) of Redlands, CA, was used for geocoding and mapping. The extensive subsetting and overlaying of geographic coverages with attached jobs and worker variables, including the identification of associated and nearby geographies, represents a sophistication in job availability analysis not performed previously.

Specifically, the analysis for neighborhoods counts neighborhood jobs seekers and accessible, but also takes into account the fact that jobs ultimately available to community residents also depends on labor market activity in nearby neighborhoods. In addition, this paper employs a more sophisticated method of estimating commuting patterns than has been used in previous job availability studies. With the use of the Census of Transportation Planning Package, the methodology is better able to capture existing transportation infrastructure.

The Metropolitan Areas and their Neighborhoods

Three metropolitan areas were examined: the Cleveland MSA (Geauga, Lake, Lorain, Median, and Cuyahoga counties); Columbus metropolitan area (Franklin, Licking, Fairfield, Pickaway, Delaware and Madison counties) and Toledo (Lucas, Sandusky, Wood and Fulton counties). In each area, neighborhoods are defined at the zip code level. This resulted in 98 neighborhoods in Cleveland,[2] 101 neighborhoods in Columbus and 58 neighborhoods in Toledo. Zip codes were chosen for several reasons. Zip code boundary files were readily available for use with our spatial analysis software. In addition, input data were zip-code friendly: the jobs data, as discussed above, were generated for zip codes; and the job seekers data (recipients and competitors) could be easily converted from census tracts to zip codes. Zip codes are a standard method of defining neighborhoods in much social science research.

[2]The Cleveland MSA actually contains 147 zip codes. However, an analysis we performed using the Census of Transportation Planning Package (CTPP), discussed below, relied on the geography found in that data set. Numerous zip codes in the Cleveland metropolitan area are not found in the CTPP; for example, information on Ashtabula County, part of the metropolitan area, is not contained in the CTPP files.

Commute Zones

A search of the existing literature revealed one previous attempt at estimating worker/jobs ratios at the neighborhood level that used commuting zones (Henle and Kinsella 1996). However, Henle and Kinsella used the standard "distance rings" or "trade areas" method to draw a typical commuting zone around individual communities. Used widely in retail market research, such distance rings consist of a geographic boundary drawn from a central point (in Henle and Kinsella's research, the center of the neighborhood) where the distance from the central point to the boundary is based on consumers' typical driving or commuting distance. The activity located at the central point can expect to draw customers from the area inside this distance ring. Conversely, for this paper, the boundary can be drawn using typical work-travel distances from the central point. The area within the circle thus inscribed is an estimate of all places that individuals located at the central point can be expected to be able to reach for available jobs. This area is referred to as a commute zone. Distance rings analysis was performed for Cleveland, Columbus and Toledo, as mentioned above. Analysis was performed for typical commuting distances for public transportation and for automobile separately.

Although distance rings are an acceptable method of estimating typical commute zones around a central point, such rings do not take into account travel obstacles and opportunities afforded by highways, special bus routes and other "real" transportation infrastructure (Peterson 1997). In order to take the existing travel system into account, this paper uses information on commuting patterns available from the Census of Transportation Planning Package (CTPP), for a special analysis of Cleveland.

Twelve sets of workers-to-jobs ratios were obtained for this project using these two definitions of commute zones (and two definitions of jobs). In Cleveland, four sets of ratios were obtained, using both CTPP-defined commute zones and distance ring-defined commute zones, where each of these rings was drawn twice: once using public transportation distances and once using auto distances. Ratios were calculated using the definition of "female-dominated entry-level jobs" as discussed previously. Four sets were also obtained for Toledo and Columbus. In these two cities, only distance-ring commute zones were drawn, once for public transportation distances and once for autos. However, the calculation of ratios was done twice, once using "all entry-level" jobs and once using "female-dominated" jobs.

Although the specific methodology for distance rings and CTPP commuting contours will be discussed separately below, there are some elements common to both methods which can be explained here. First, after an examination of typical travel times for low-skilled workers in several metropolitan areas and a general discussion among researchers involved in the project, an expected commuting time of 45 minutes was established. This commute time was used both for travel by public transportation and travel by auto.

Second, an explanation of the structure of the CTPP file will help clarify some of the discussion found below. The geographic unit of analysis for the CTPP is called a Traffic Analysis Zone (TAZ). Depending upon population in and trips generated from, TAZs can vary in size from half-square miles to four or five square miles. The information used here is in the

form of TAZ pairs: information about travel modes and times are given for pairs of TAZs, consisting of the TAZ of origin and the TAZ of destination.

Finally, the CTPP file does not give information for all public transportation modes as a single item. Public transportation is split between bus, train, trolley, etc. The public transportation analysis here is, therefore, averages for bus and train times in the Cleveland CMSA, and for bus only in Columbus and Toledo.

Distance Rings

The drawing of distance rings required the definition of an appropriate number of miles for the radius, given typical work-travel distances. The CTPP is used for this. Distances between the central points of TAZs were calculated using a State Plane coordinate system based on distances measured in feet. Then, all origin/destination pairs were selected for which median travel time between was 45 minutes (two sets in each city--one for public transportation and one for autos). These pairs were then used to find the median distance for travel times of 45 minutes.[3] A ring was then drawn around every neighborhood. The edge of the zip code was used as the starting point for measuring the ring, so that the ring is the same shape as the zip code. The distance between the zip code edge and the commute zone boundary is the distance given by the median commute distance for 45 minutes.

An argument could be made that the distance ring should have been based on the maximum distance traveled within 45 minutes rather than a median. The median was chosen, however, because a wide range of travel distances was observed and it was decided that commute boundaries should not reflect one unusually accessible situation. In this, the median distance may underestimate the full range of accessibility for some neighborhoods. However, the choice was made to use the edge of the zip code rather than a central point from which to begin drawing the commute zone in order to partially compensate for this possibility.

Census of Transportation Planning Package (CTPP) Contours

As mentioned above, a CTPP-contours analysis attempts to account for existing transportation infrastructure, which is overlooked by a simple distance-rings analysis. Since the CTPP reports time and distance traveled between TAZs, it is possible to draw commute zones based on places to which persons from particular communities really do travel. In essence, a CTPP-derived commute zone can be thought of as "fingers" emanating from a neighborhood rather than the "area ring" surrounding a neighborhood one obtains from a distance ring procedure. These finger contours arise because not all areas within a theoretical ring are within the same commuting time. Highways, arterial streets, and bus schedules make some areas more accessible than others.

[3]These distances were as follows: Cleveland auto 8.52 miles, public transportation 4.69 miles; Columbus auto 9.57 miles, bus 4.73 miles; Toledo auto 10.42 miles, bus 5.22 miles.

A CTPP-contour commute zone was drawn for every neighborhood, where the contour is defined as all TAZs accessible in 45 minutes or less for a given mode of transportation (public transportation or auto). To do this, zip-code boundary files were overlaid with TAZ boundary files so that TAZs within zip-code neighborhoods could be identified. The neighborhood was thus then defined as a set of origin TAZs. All destination TAZs within the 45 minute limit were then selected by our spatial analysis software to be part of the CTPP-contour commute zone for that neighborhood.

Distance Rings *vs.* The Census Of Transportation Planning Package

Although a "fingers vs. circle" analogy can begin to describe the way in which a CTPP-contour commute zone differs from a distance-ring commute zone, an examination of the actual CTPP contours shows that there are many "holes" or empty areas in the "fingers." A destination TAZ does not get counted as part of a neighborhood's commute zone if no one from that neighborhood commutes to the TAZ for work. What is suggested, therefore, is that the CTPP reflects not only the existing transportation infrastructure, but also the outcomes of complex social and labor market processes. In this, "holes" may exist for several reasons. Jobs may not be located in the empty areas. Or, the jobs may be of a nature such that few or none of the neighborhood residents hold those jobs. It may be also that businesses in these areas may not have historically hired residents from neighborhoods containing public housing residents few or none of neighborhood residents hold those jobs.

Thus, these empty areas found within the commute zones delivered by the CTPP method suggests that a CTPP-based analysis takes into account not only existing transportation infrastructure, but also the historical operations of labor markets and the social nature of the employer-employee relationship. Therefore, it may be that the CTPP offers a more rigorous method by which to specify typical; commute zones for neighborhoods. A distance-rings analysis may indicate what jobs are nearby, but cannot account for transportation nodes, micro-level locations of specific occupational niches, or for the geographical scope of residents' historical job search activity and success.[4]

Identification of Accessible Jobs

But how many jobs were within each of these commute zones? Low-skilled jobs, as defined previously, were attached to the underlying GIS geography in order to permit identification of such jobs within commute zones. Although job totals are given for zip codes, commute zone boundaries split these zip codes inasmuch as residents commuted only halfway or so "into" a zip code. To compensate, zip code totals were converted into densities (total jobs/zip code area). As commute zones were drawn, either with distance rings or by overlaying

[4] The job seeker-to-jobs ratios generated by The CTPP method and distance rings analysis are autocorrelated at 81 percent (Pearson's r=.9).

destination TAZs, the software counted the total number of jobs in a given zone as given by the underlying densities. These densities differed in areas of the commute zone wherever the commute zone crossed zip code boundaries.

Identification of Job Seekers

As discussed above, competitors and TANF recipients make up the definition of job seekers. Each neighborhood (zip code) was assigned a number of job seekers according to the method discussed previously.

Calculation of Seekers/Available Jobs Ratios

As may be apparent, commute zones for neighborhoods overlap. Zip codes are contiguous, so that drawing commute zones for all neighborhoods results in a series of overlapping polygons, creating sub-polygons. These sub-polygons represent areas where two or more neighborhoods each have a claim on jobs. In the CTPP-based commute zones, these sub-polygons are destination TAZs.

That is, not only do job seekers in one community face competition for jobs in their commute zone from fellow neighborhood residents, but jobs in their commute zone may be "claimed" by individuals in other neighborhoods whose commute zone overlaps their own. These other claimants must be taken into consideration when determining how many of the "accessible" jobs are actually "available" to residents of a particular neighborhood. If not, and all jobs in a commute zone are attributed to a neighborhood, jobs in areas where commute zones overlap will be counted more than once. The GIS-basis of our analysis permitted allocation of jobs in a manner not previously attempted. Henle and Kinsella's analysis using commute zones merely normalized the resulting total number of jobs attributed to all communities by giving each neighborhood a proportion of existing jobs based on its proportion of the total of double-counted jobs. Although an improvement over job double-counting, what this method does not do is to account for variation in the number of seekers across neighborhoods. For example, more claimants may be found two neighborhoods away than in the neighborhood next door. This may be either because there are more people in the further neighborhood, or because there are fewer jobs in that neighborhood's commute zone and so residents claim more jobs further away from home.

Instead, an algorithm was developed that takes into account variation in claimants and in job availability across neighborhood commute zones. In essence, each sub-polygon (for distance rings) or TAZ (for the CTPP) in the metropolitan area was assigned a number of jobs (as explained above in "Identification of Accessible Jobs"). Then, all the neighborhoods that had that sub-polygon or TAZ in their commute zone were identified. The jobs in the smaller areas were then allocated as available to a respective neighborhood based on relative concentrations of job seekers and accessible jobs.

Total jobs allocated as available to the i^{th} neighborhood is the sum of jobs allocated from each TAZ or sub-polygon in its commute zone:

$$A_i = \sum_{n=1} A_{in},$$

where A_{in} = jobs from the n^{th} TAZ or sub-polygon allocated as available to seekers from the i^{th} neighborhood.

Job allocation from the n^{th} TAZ (or sub-polygon) in a commute zone to seekers from the i^{th} neighborhood is itself based on the seekers from the i^{th} neighborhood allocated to the TAZ or sub-polygon as a proportion of seekers from all neighborhoods allocated to the TAZ or sub-polygon:

$$A_{in} = J_n * B_{in}/B_n,$$

where J_n = total jobs in TAZ n,
B_{in} = seekers from the i^{th} neighborhood allocated to the n^{th} TAZ or sub-polygon in their commute zone, and
B_n = total seekers, from all neighborhoods, allocated to the n^{th} TAZ or sub-polygon.

Seekers from the i^{th} neighborhood allocated to the n^{th} TAZ or sub-polygon is given by (total number of seekers from the i^{th} neighborhood) * (total jobs in the n^{th} TAZ/total jobs in the i^{th} neighborhood's commute zone):

$$B_{in} = T_i * J_n/K_i,$$

where T_i = total seekers from the i^{th} neighborhood and
K_i = total jobs in all of the TAZ's or sub-polygons in the i^{th} neighborhood's commute zone.

These ratios were calculated for entry-level "female jobs" as defined above. In Toledo and Columbus, ratios based on "all entry-level" were also calculated to serve as a comparison.

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APPENDIX C
THE USE OF PUMS DATA

APPENDIX C:

ESTIMATES OF THE EMPLOYABILITY OF THE PUBLIC HOUSING POPULATION SUBJECT TO WELFARE REFORM USING BUREAU OF THE CENSUS PUBLIC USE MICRODATA SAMPLES (PUMS)[1]

This Appendix provides information on how estimates of probable employment for mandated public housing residents were developed using 1990 Census Public Use Microdata Samples. These estimates are presented in Section IV of this report. The methods presented here are replicable in any community containing public housing and represented in PUMS samples. The primary steps shown in this Appendix concern the kinds of data necessary to develop PUMS employment estimates, the modifications to the data necessary for analysis, and the criteria for choosing independent variables (those characteristics likely to predict employability). The results of logistic regressions on PUMS populations are weighted by the demographic distribution of the mandated public housing residents. Adjustments in the estimates of work participation are made to take into account lack of information on education from some housing authorities and the trends in employment in each city between 1990 and 1997.

Background. The five percent sample of the 1990 Census of Population and Housing from the Public Use Microdata Samples (PUMS) was used to estimate the long-term probability that certain heads of household in public housing would be employed if they sought work and had the same degree of success as similar persons in PUMS. For each of the eight study Housing Authorities (HAs), these residents of public housing are those mandated by Temporary Assistance to Needy Families (TANF) to find employment. The estimates were done in support of the report's analysis of rent revenue impacts on the Public Housing Program (Section IV), which centers on changes in rent revenues paid to HAs by those households mandated to find jobs under the rules of TANF.

Important household factors affecting housing authority rent revenues include residents' household income, adjustments to income, and utility allowances. Incomes are expected to change dramatically for many households as they reach the end of their welfare assistance under TANF. The key unknown in determining a household's long-term income is its potential wage income.

This appendix describes how PUMS data and logistic regressions were used to estimate the probability of being employed some time after TANF benefits end. In Section IV of the report, these estimates were combined with current HA program data to complete the needed calculation of wage income.[2] Finally, rent revenues could then be determined.

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[2]The analysis in the report's Section IV, "The Financial Exposure of the Housing Authorities," relies on the wage income of other public housing heads of household, who are working but not receiving welfare assistance, for what might be expected as a wage for those coming off of welfare.

In the first step of estimating job participation, data for the Public Use Microdata Areas (PUMAs) which make up each of the eight study cities were extracted from PUMS. For the smaller sites, one PUMA encompasses the entire city. The largest cities are made up of more than one PUMA. Table C-1 gives the PUMS identification numbers of the Metropolitan Statistical Areas (MSAs) and PUMAs used for analysis.

Table C-1
PUMS GEOGRAPHICAL DESIGNATIONS

City	MSA	PUMAs
Richmond	5720	02100
Norfolk	6760	02700
Los Angeles	4480	06501-21
San Francisco	7360	01901-06
Cleveland	1680	03901-04
Columbus	1840	05101-07
Toledo	8400	03601-04
Dallas	1920	02501-09

Key Demographic Characteristics. To estimate the probability of having a job in each of the eight study cities, subsamples of households which closely resemble the public housing residents with respect to potentially key demographic characteristics were drawn from PUMS. The subsamples were restricted to households with no children under 2 years old, to simulate the mandated households who are exempted because of the presence of very young children.[3] The subsamples were further restricted to heads of household who were nonelderly, single females, not in school, and who were in the civilian labor force in 1990. Finally, in Norfolk, Richmond and Cleveland, the PUMS subsamples also selected only Black heads of household, reflecting the very small proportion of non-Black mandated public housing residents in those cities.

Demographic data available both from the PUMS and each HA, which could be used as potential predictors of job participation, included ages of children and age, sex, marital status, race and ethnicity of head of household. What likely would be regarded as the most important characteristic, educational attainment, is part of the PUMS data for each city, but was available from only the Norfolk, Richmond and Dallas HAs. Education was also provided by California Social Services for San Francisco welfare recipients. A match with about 45 percent of the mandated households in public housing allowed education to be included as a variable for estimation of the probability of mandated households working in San Francisco.

Logistic Regressions: Logistic regressions were run from PUMS data, utilizing SPSS statistical software, to estimate job participation for public housing residents mandated by TANF to find a job. The dependent variable for the regressions was employment, defined as working in 1989 at least 30 hours per week for 26 weeks or more. The independent variables used were presence of children under six years of age and education, age and race/ethnicity of head of household as given in Table C-2. Presence of children under six and age of head were treated as a combined independent variable with six categories (none or some children under six by three age categories). All independent variables were defined as indicator variables, with zero being the value of the variables for the excluded categories.

[3]Under two years was selected instead of one year, the requirement in most places, because employment was determined based on job experience in the previous year (1989), not 1990 when the Census was actually taken.

The forward likelihood-ratio method was used to determine which demographic characteristics were of importance in each site with respect to employment. Independent variables were added if their entry significance level was sufficiently small. The regression coefficients are given in Table C-4. Estimated work participation rates, applying the demographic distribution of the mandated residents in public housing, are given in Table C-5. The distribution for the each of the eight HAs is given in Table C-6.

Table C-2
INDEPENDENT VARIABLES

Education of Head:	• Less than 9th grade • 9th through 11th grade • High school diploma • More than high school
Children under six years old:	• None • At least one present
Age of Head:	• 18-29 • 30-39 • 40 plus
Race of Head:	• Black • Other
Race/Ethnicity of Head:	• Black (non-Hispanic) • Hispanic • Other

Except for Richmond, education was the first independent variable to be entered. Surprisingly, the education data did not enter into the regression at all for Richmond.

Work Participation Estimates and Adjustments for Education. Regression coefficients were applied to the distribution of mandated public housing residents to estimate how many would be employed, assuming they would have the same probability of being employed as the data show for their counterparts in the PUMS. In addition to the distribution of mandated public housing residents for each city, Table C-5 gives the estimated probabilities of employment for each applicable regression equation.

In the three cities where education data was available and entered in as an independent variable, estimates of employment were made both with and without inclusion of education. As seen in Table C-5, removing education in the regressions for Norfolk, Dallas and San Francisco reduced the estimated employment by at least ten percentage points. For those cities, the estimate used in the Section IV of the report was that obtained including education. In each of the four cities (Cleveland, Columbus, Toledo and Los Angeles), where education was unavailable, the estimated employment was reduced by ten percentage points to compensate for what might be the result if data on education had been available. It is recognized that the correctness of this may be questionable, but given the consistency with which education played a role in the estimates for other sites, it seems to be a reasonable correction to make. For Richmond, no adjustment was made since education did not enter into the regressions there using the forward likelihood ratio method.

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Table C-3
PUMS ESTIMATES OF WORK PARTICIPATION

Housing Authority	
Richmond	58
Norfolk	63
Los Angeles	62
San Francisco	63
Cleveland45	
Columbus	67
Toledo	40
Dallas	72

Table C-3 gives the adjusted estimates of employment as used in Section IV of the report. In addition to the adjustments considering the effect of educational data, there was an adjustment in the employment estimate for Norfolk taking into account changes over time, as described in the next section. The work participation rates in Table C-3 vary from 40 percent in Toledo, to 72 percent in Dallas.

Potential Change in Employment Over Time. The work participation rates reflect the 1989 economy. Under a contract with Standard & Poor's DRI, trends in employment since 1989 were analyzed in each of the sites using the Census Bureau's Current Population Survey (CPS) for March in each of the years from 1990 through 1997. Six target populations were examined for trends over the seven years using restricted populations of different configurations to overcome the generally very small sample sizes obtained when all constraints are imposed which are similar to those for HA mandated residents. These variations are given below:

Target 1: Black or Hispanic females in the civilian work force, single, age 18-54[4], not in school, with no more than a high school education, and with no children under age 2. (Closest to HA mandated population.)

Target 2: Females in the civilian work force, not in school, with no more than a high school education. (Least restrictive--does not include constraints with respect to race, marital status, age, and children<2.)

Target 3: Black or Hispanic females in the civilian work force, single, not in school, with no more than a high school education, and with no children under age 2. (Omits age constraint.)

Target 4: Black or Hispanic females in the civilian work force, single, age 18-54, not in

[4]The upper age limit was 64 for sites other than Richmond and Norfolk.

school, and with no more than a high school education. (Omits children under 2 constraint.)

Target 5: Females in the civilian work force, single, age 18-54, not in school, with no more than a high school education, and with no children under age 2. (Omits race constraint.)

Target 6: Black or Hispanic females in the civilian work force, age 18-54, not in school, with no more than a high school education, and with no children under age 2. (Omits marital status constraint.)

Note that even when the population is constrained to resemble the HA mandated population, the CPS sample still has a different distribution with respect to variables such as education achieved, number of children under six, age, and other important variables potentially making a difference in job participation. Sample sizes for the 1990 data, which comes from PUMS, vary between 4 and 176 for Target 1 and between 70 and 1,205 for Target 2. For the CPS in years 1991-1997 the sample sizes are roughly one-half those of the 1990 data. Table C-7 presents the sample sizes by MSA and target population for 1990 and averaged over the years 1991 through 1997.

The charts at the end of this Appendix show the trends in the estimated proportion employed at least 30 hours per week for a minimum of 26 weeks. The trends are given for Targets 1, 2, 5 and 6 for the MSA and central city for each site.[5] The trends shown are based on weighted data.

For the CPS population most similar to the public housing TANF mandated population (Target 1), trends in the estimated proportion employed showed the following: Richmond, Cleveland and Dallas were virtually unchanged; Norfolk dropped to a level about 40 percent less employed; employment in Columbus rose about five percentage points; Toledo's sample was extremely small for the target group and employment was very volatile, but for larger groups seemed to stay steady; employment in Los Angeles dropped about five percentage points; and, there is a mixed picture in San Francisco, where employment seemed to drop about ten percentage points in the MSA as a whole, but may have increased in the central city based on a fairly small sample size (for a larger group--Target 2--without Target 1's age, race, ethnicity, children under six and marital status constraints, the employment in the central city decreased slightly).

With the possible exception of Norfolk, the trends do not indicate a rationale for substantial adjustments to the work participation estimates. For the analyses in Section IV, the estimates in Table C-3 were not adjusted further for cities other than Norfolk.

In the case of Norfolk, employment decreases about 40 percent in the central city and 45 percent in the MSA. Although not shown in Table C-7, sample sizes can be considerably smaller for central cities than for MSAs, although they are fairly close in Norfolk. For Norfolk,

[5]Targets 3 and 4 were not included here because they did not seem to contribute any additional information useful in assessing what may have occurred between 1990 and 1997.

the Target 1 MSA sample is all in the central city for 1990 and 88 percent are in the central city for 1991 through 1997. For Targets 2, 5 and 6, the Norfolk central city sample is 78 to 100 percent of the sample for the MSA as a whole, depending on target population and year. Given the forty percent decrease shown for Target 1 in the central city, and taking into account the differences between PUMS, CPS and HA populations, it was thought reasonable to adjust Norfolk's employment estimate downward by about one-third. Thus Table C-3 shows 42 percent employed for Norfolk, which is one-third less than the 63 percent obtained by applying the logitistic regression coefficients to the distribution of mandated public housing residents in Norfolk.

Table C-4

PUMS LOGIT REGRESSION COEFFICIENTS FOR JOB PARTICIPATION

(Mandated Heads of Household in Public Housing/No Kids<2, Single, In 1990 Civilian Labor Force, Not In School)

City		Sample Size	Constant	Education <9th	Education 9-11	Education HS	Education HS+	Age:	No Kids<6 18-29	No Kids<6 30-39	No Kids<6 40-54	Some Kids<6 18-29	Some Kids<6 30-39	Some Kids<6 40-54	Race/Ethnicity Black	Race/Ethnicity Hispanic	Race/Ethnicity Other	Last Entry Significance
Richmond*	***	150	1.075	-2.203	-1.467	-0.555	0		1.776	1.224	1.469	-0.053	-0.024	0	0			(all entered)
	****	"	1.075	-2.203	-1.467	-0.555	0		1.776	1.224	1.469	-0.053	-0.024	0	0			0.059
	*****	"	0.693						1.386	0.934	0.993	-0.288	-0.154	0	0			0.108
Norfolk*	***	146	-0.013	-0.514	-0.680	-0.074	0		0.411	1.513	1.383	0.643	0.765	0	0			(all entered)
	****	"	-0.693						0.693	1.966	1.897	1.012	1.204	0	0			0.090
	*****	"	-0.693						0.693	1.966	1.897	1.012	1.204	0	0			0.090
Cleveland*	****	296	0.693	4.660	-1.346	-0.819	0		1.236	0.125	0.847	-0.249	0.172	0	0			0.035
	*****	"	0.693						0.496	-0.416	0.182	-0.930	-0.308	0	0			0.057
Columbus*	****	666	-0.399	5.386	-1.009	-0.366	0		2.571	2.766	1.870	1.213	1.998	0	0			0.011
	*****	"	-0.693						2.565	2.665	1.819	1.253	2.028	0	0			0.037
Columbus**	****	"	1.039	-1.309	-0.905	-0.051	0		1.196	0.718	0.599	-0.026	0.289	0	0		0.355	0.104
	*****	"	0.867						1.104	0.664	0.574	-0.129	0.308	0	0		0.385	0.074
Toledo**	****	302	2.088	-2.511	-1.609	-1.069	0		-1.893	-0.943	-0.680	-1.788	-0.746	0	0		0.915	0.042
	*****	"	0.795						-1.396	-0.366	0.007	-1.376	-0.019	0	0		0.954	0.005
Dallas	***	787	2.545	-1.375	-1.320	-0.790	0		0.030	0.327	0.332	-0.320	-0.450	0	-1.008	-0.077	0	(all entered)
	****	"	2.545	-1.375	-1.320	-0.790	0		0.030	0.327	0.332	-0.320	-0.450	0	-1.008	-0.077	0	0.028
	*****	"	2.056						0.138	0.430	0.414	-0.335	-0.259	0	-1.224	-0.665	0	0.015
Los Angeles	***	1,980	1.540	-1.162	-1.290	-0.704	0		0.203	0.265	0.271	-0.063	0.032	0	-0.379	0.323	0	(all entered)
	****		1.743	-1.149	-1.315	-0.713	0								-0.388	0.289	0	0.000
	*****	"	1.351						0.052	0.144	0.201	-0.271	-0.039	0	-0.473	-0.370	0	0.148
San Francisco	***	249	1.673	-1.163	-0.931	-1.034	0		-0.060	0.259	0.035	-1.173	0.720	0	-0.547	0.826	0	(all entered)
	****	"	1.772	-1.057	-1.161	-1.038	0								-0.636	0.772	0	0.021
	*****	"	1.357						-0.150	0.310	0.003	-1.247	0.650	0	-0.640	0.411	0	0.172

* *Black only*
** *Black or White*
*** *Education x Age/Kids<6 x Race/Ethnicity - All Entered*
**** *Education x Age/Kids<6 x Race/Ethnicity - Forward Likelihood-Ratio Method*
***** *Age/Kids<6 x Race/Ethnicity - Forward Likelihood-Ratio Method (Education Omitted)*

Table C-5

ESTIMATED WORK PARTICIPATION RATES
Mandated Public Housing Residents

PHA	Independent Variables Included	HA Sample Size		Estimated Employment
Richmond	Education x Age x Kids<6 (Black only)	1,079	**	58.5
	"	"		58.5
	Age x Kids<6 (Black only)	"		70.9
Norfolk	Education x Age x Kids<6 (Black only)	486	*	60.0
	Age x Kids<6 (Black only)	"		62.8
	"	898		63.1
Cleveland	Education x Age x Kids<6 (Black only)	1,854		-
	Age x Kids<6 (Black only)	"		55.2
Columbus	Education x Age x Kids<6 (Black only)	892		-
	Age x Kids<6 (Black only)	"		71.4
Columbus	Education x Age x Kids<6 x Race	"		-
	Age x Kids<6 x Race	"		75.5
Toledo	Education x Age x Kids<6 x Race	760		-
	Age x Kids<6 x Race	"		50.1
Dallas	Education x Age x Kids<6 x Race/Ethnicity	1,292	***	72.1
	"	"		72.1
	Age x Kids<6 x Race/Ethnicity	"		82.1
Los Angeles	Education x Age x Kids<6 x Race/Ethnicity	3,315		-
	Age x Kids<6 x Race/Ethnicity	"		72.4
San Francisco	Education x Age x Kids<6 x Race/Ethnicity	584	****	55.9
	Education x Race/Ethnicity	"		61.5
	Age x Kids<6 x Race/Ethnicity	"		67.6
	"	1,336		69.1

* *412 missing education data*
** *79 missing education data*
*** *19 missing education data*
**** *753 missing education data*

Table C-6

SELECTED CHARACTERISTICS OF MANDATED PUBLIC HOUSING RESIDENTS

Richmond

No Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	4	22	28	54
9-11	19	116	74	209
HS	19	82	50	151
HS+	2	13	7	22
Total	44	233	159	436

Some Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	53	15	15	83
9-11	194	101	23	318
HS	100	88	26	214
HS+	12	9	7	28
Total	359	213	71	643

Total Kids

Education	Age 18-29	'30-39	40-59	Total
<9	57	37	43	137
9-11	213	217	97	527
HS	119	170	76	365
HS+	14	22	14	50
Total	403	446	230	1079

Norfolk

No Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	0	5	5	10
9-11	11	46	21	78
HS	5	36	14	55
HS+	2	3	4	9
Total	18	90	44	152

Some Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	10	5	4	19
9-11	107	54	13	174
HS	75	43	9	127
HS+	10	4	0	14
Total	202	106	26	334

Total Kids

Education	Age 18-29	'30-39	40-59	Total
<9	10	10	9	29
9-11	118	100	34	252
HS	80	79	23	182
HS+	12	7	4	23
Total	220	196	70	486

Los Angeles

No Kids<6

Race/ Ethnicity	Age 18-29	'30-39	40-59	Total
Black	109	216	173	498
Hispanic	46	340	561	947
Other	6	17	72	1445
-				0
Total	161	573	806	1540

Some Kids<6

Race/ Ethnicity	Age 18-29	'30-39	40-59	Total
Black	395	179	56	630
Hispanic	294	506	286	1086
Other	24	16	19	59
-				0
Total	713	701	361	1775

Total Kids

Race/ Ethnicity	Age 18-29	'30-39	40-59	Total
Black	504	395	229	1128
Hispanic	340	846	847	2033
Other	30	33	91	1504
-	0	0	0	0
Total	874	1274	1167	3315

Table C-6 (continued)

San Francisco (with education data)

Black - Non Hispanic

No Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	3	3	1	7
9-11	41	42	14	97
HS	17	49	48	114
HS+	0	6	6	12
Total	61	100	69	230

Some Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	5	1	0	6
9-11	115	30	2	147
HS	50	32	8	90
HS+	5	3	0	8
Total	175	66	10	251

Hispanic

No Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	0	1	4	5
9-11	1	1	3	5
HS	1	0	3	4
HS+	0	0	0	0
Total	2	2	10	14

San Francisco (with education data, continued)

Hispanic

Some Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	0	1	0	1
9-11	4	4	1	9
HS	2	0	0	2
HS+	0	0	0	0
Total	6	5	1	12

Other

No Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	1	2	10	13
9-11	3	7	6	16
HS	2	3	3	8
HS+	1	1	2	4
Total	7	13	21	41

Some Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	0	2	1	3
9-11	12	3	2	17
HS	8	5	0	13
HS+	2	1	0	3
Total	22	11	3	36

San Francisco (with education data, continued)

Total (by Ethnicity and Kids)

Education	Age 18-29	'30-39	40-59	Total
<9	9	10	16	35
9-11	176	87	28	291
HS	80	89	62	231
HS+	8	11	8	27
Total	273	197	114	584

Table C-6 (continued)

San Francisco (all)

Race/ Ethnicity	No Kids<6 Age 18-29	'30-39	40-59	Total
Black	98	163	132	393
Hispanic	5	5	24	34
Other	13	49	95	157
Total	116	217	251	584

Race/ Ethnicity	Some Kids<6 Age 18-29	'30-39	40-59	Total
Black	367	159	40	566
Hispanic	23	26	4	53
Other	67	48	18	133
Total	457	233	62	752

Race/ Ethnicity	Total Kids Age 18-29	'30-39	40-59	Total
Black	465	322	172	959
Hispanic	28	31	28	87
Other	80	97	113	290
Total	573	450	313	1336

Table C-6 (continued)

Cleveland

No Kids<6				
	Age			
Education	18-29	'30-39	40-59	Total
<9				0
9-11	109	327	218	654
HS				0
HS+				0
Total	109	327	218	654

Some Kids<6				
	Age			
Education	18-29	'30-39	40-59	Total
<9				0
9-11	784	288	98	1170
HS				0
HS+				0
Total	784	288	98	1170

Total Kids				
	Age			
Education	18-29	'30-39	40-59	Total
<9	0	0	0	0
9-11	893	615	316	1824
HS	0	0	0	0
HS+	0	0	0	0
Total	893	615	316	1824

Columbus

No Kids<6				
Race/	Age			
Ethnicity	18-29	'30-39	40-59	Total
Black	50	144	84	278
Hispanic				0
Other	3	21	35	59
-				0
Total	53	165	119	337

Some Kids<6				
Race/	Age			
Ethnicity	18-29	'30-39	40-59	Total
Black	350	99	40	489
Hispanic				0
Other	40	16	10	66
-				0
Total	390	115	50	555

Total Kids				
Race/	Age			
Ethnicity	18-29	'30-39	40-59	Total
Black	400	243	124	767
Hispanic	0	0	0	0
Other	43	37	45	125
-	0	0	0	0
Total	443	280	169	892

Toledo

No Kids<6				
Race/	Age			
Ethnicity	18-29	'30-39	40-59	Total
Black	53	105	51	209
Hispanic				0
Other	7	8	15	30
-				0
Total	60	113	66	239

Some Kids<6				
Race/	Age			
Ethnicity	18-29	'30-39	40-59	Total
Black	353	60	20	433
Hispanic				0
Other	63	18	7	88
-				0
Total	416	78	27	521

Total Kids				
Race/	Age			
Ethnicity	18-29	'30-39	40-59	Total
Black	406	165	71	642
Hispanic	0	0	0	0
Other	70	26	22	118
-	0	0	0	0
Total	476	191	93	760

Table C-6 (concluded)

Dallas

Black - Non Hispanic

No Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	1	13	10	24
9-11	75	122	58	255
HS	38	116	41	195
HS+	2	4	2	8
Total	116	255	111	482

Some Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	18	4	3	25
9-11	313	60	24	397
HS	209	60	16	285
HS+	9	3	1	13
Total	549	127	44	720

Hispanic

No Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	0	5	6	11
9-11	2	9	3	14
HS	0	2	0	2
HS+	0	0	0	0
Total	2	16	9	27

Dallas

Hispanic

Some Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	4	7	4	15
9-11	11	4	0	15
HS	7	0	1	8
HS+	0	0	0	0
Total	22	11	5	38

Other

No Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	0	2	3	5
9-11	0	2	3	5
HS	0	0	0	0
HS+	0	0	0	0
Total	0	4	6	10

Some Kids<6

Education	Age 18-29	'30-39	40-59	Total
<9	3	1	2	6
9-11	3	4	0	7
HS	1	0	1	2
HS+	0	0	0	0
Total	7	5	3	15

Dallas

Total (by Ethnicity and Kids)

Education	Age 18-29	'30-39	40-59	Total
<9	26	32	28	86
9-11	404	201	88	693
HS	255	178	59	492
HS+	11	7	3	21
Total	696	418	178	1292

Table C-7

CPS SAMPLE SIZES BY MSA
(By Target Population and Year)

	1990						1991-97 Average				1991-97 Average as percent of 1990			
MSA	T1 *	T2	T3	T4	T5	T6	T1	T2	T5	T6	T1	T2	T5	T6
Richmond	11	70	11	11	29	15	5.6	32.3	12.9	8.3	50.6	46.1	44.3	55.2
Norfolk	17	108	21	18	30	43	8.0	50.1	16.4	14.6	47.1	46.4	54.8	33.9
Los Angeles	328	1205	338	341	567	615	181.9	566.0	238.6	381.4	55.4	47.0	42.1	62.0
San Francisco	17	165	17	18	67	41	9.3	45.6	18.3	19.6	54.6	27.6	27.3	47.7
Cleveland	24	233	25	24	85	38	12.4	103.0	36.1	20.7	51.8	44.2	42.5	54.5
Columbus	22	196	22	22	77	30	7.9	84.9	29.7	12.7	35.7	43.3	38.6	42.4
Toledo	4	89	4	4	31	10	3.3	40.4	15.7	5.1	82.1	45.4	50.7	51.4
Dallas	39	279	40	43	111	83	23.3	110.1	43.4	46.3	59.7	39.5	39.1	55.8
TOTAL	462	2345	478	481	997	875	251.6	1032.4	411.1	508.7	54.5	44.0	41.2	58.1

* *Target 1: Black or Hispanic females in the civilian labor force, single, age 18-54 (Norfolk & Richmond) or 18-64 (other cities), not in school, no more than a high school education, and with no children under age 2.*

Target 2: Females in the civilian labor force, not in school, and with no more than a high school education.

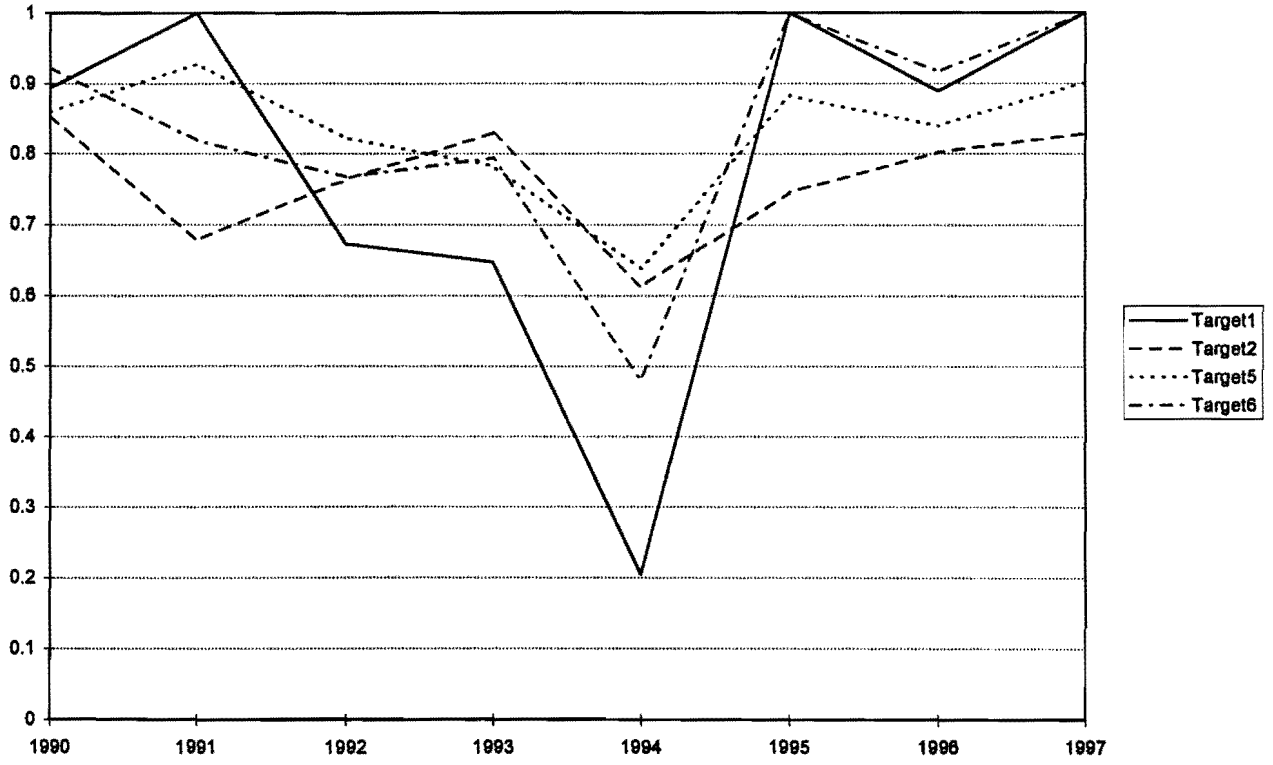
Target 3: Target 1 omitting age constraint.

Target 4: Target 1 omitting children under age two constraint.

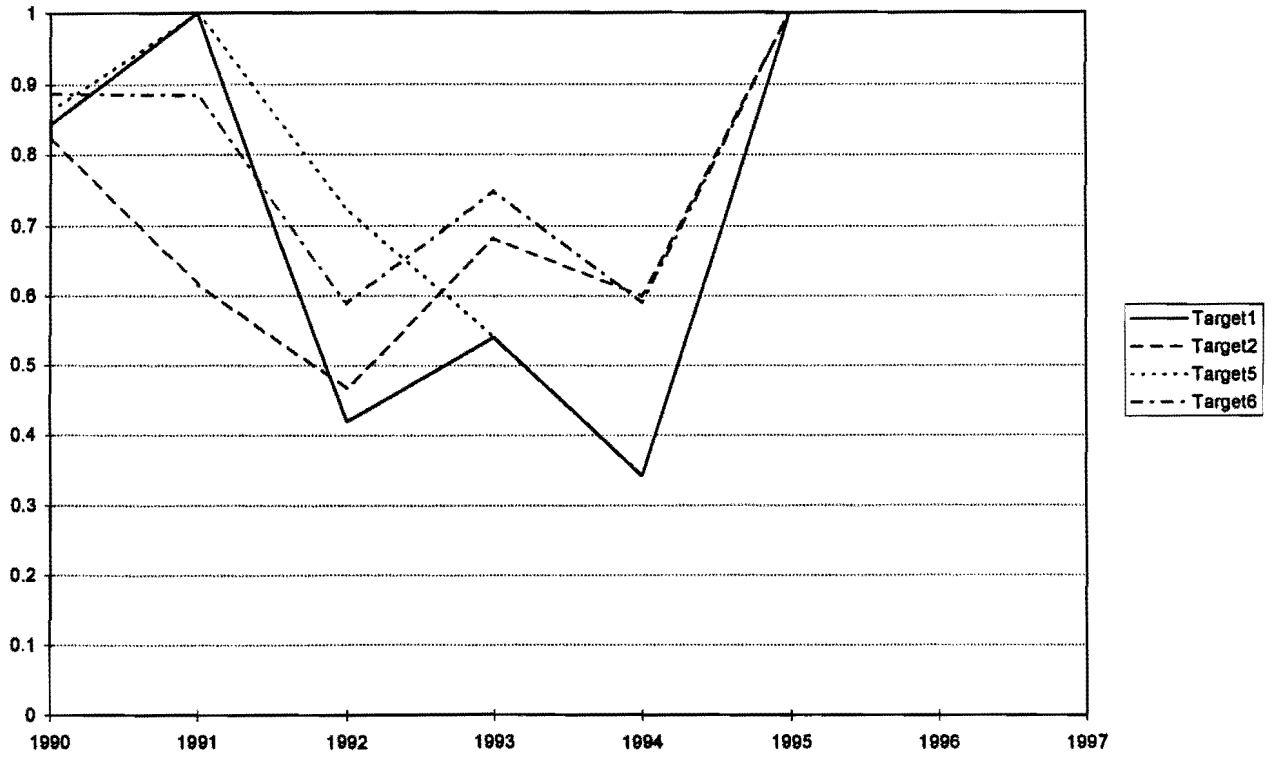
Target 5: Target 1 omitting race constraint.

Target 6: Target 1 omitting marital status constraint.

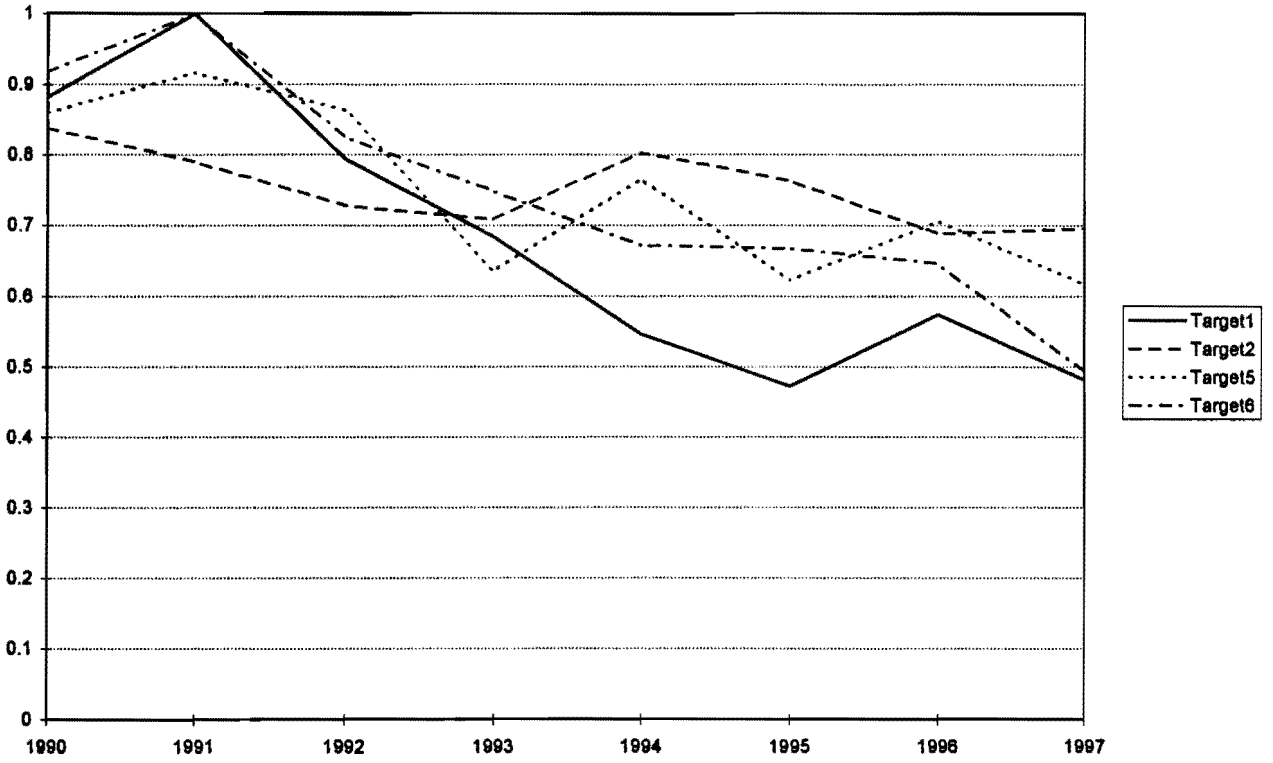
Measures of Labor Force Participation: Richmond MSA



Measures of Labor Force Participation: Richmond Central City



Measures of Labor Force Participation: Norfolk MSA



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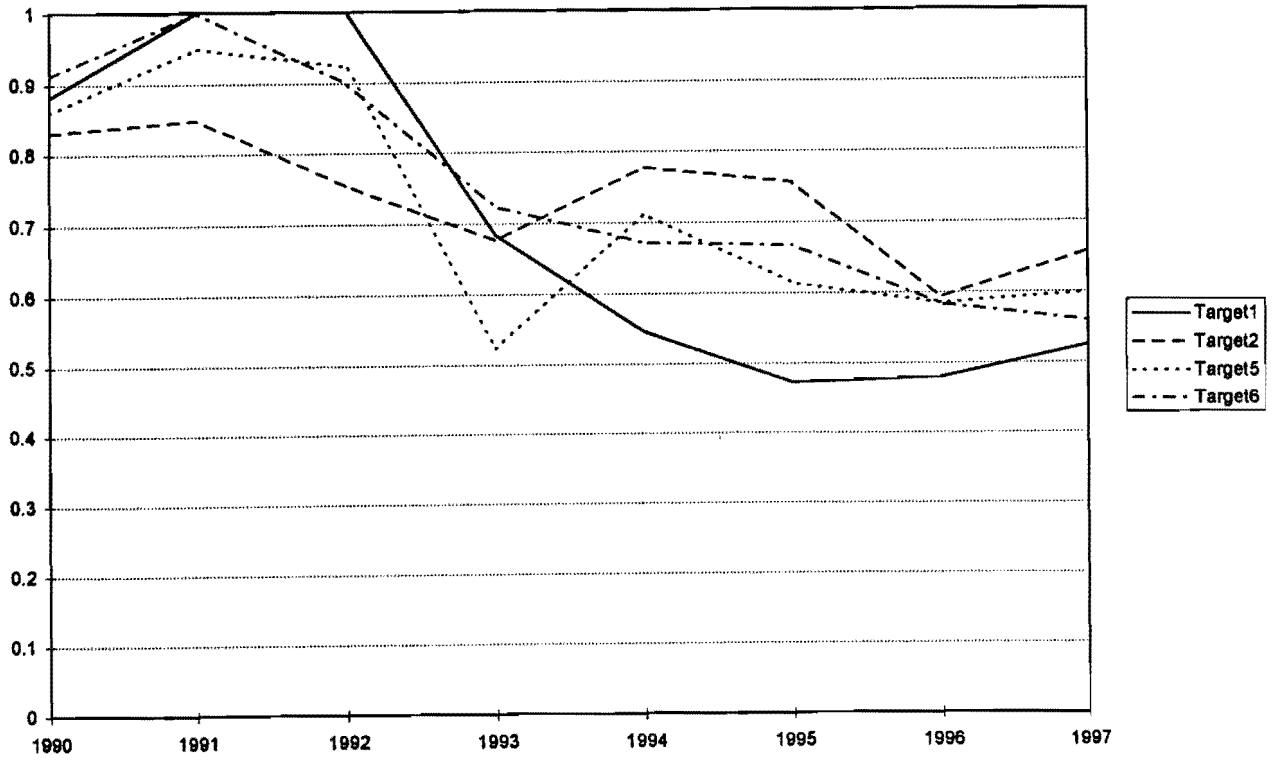
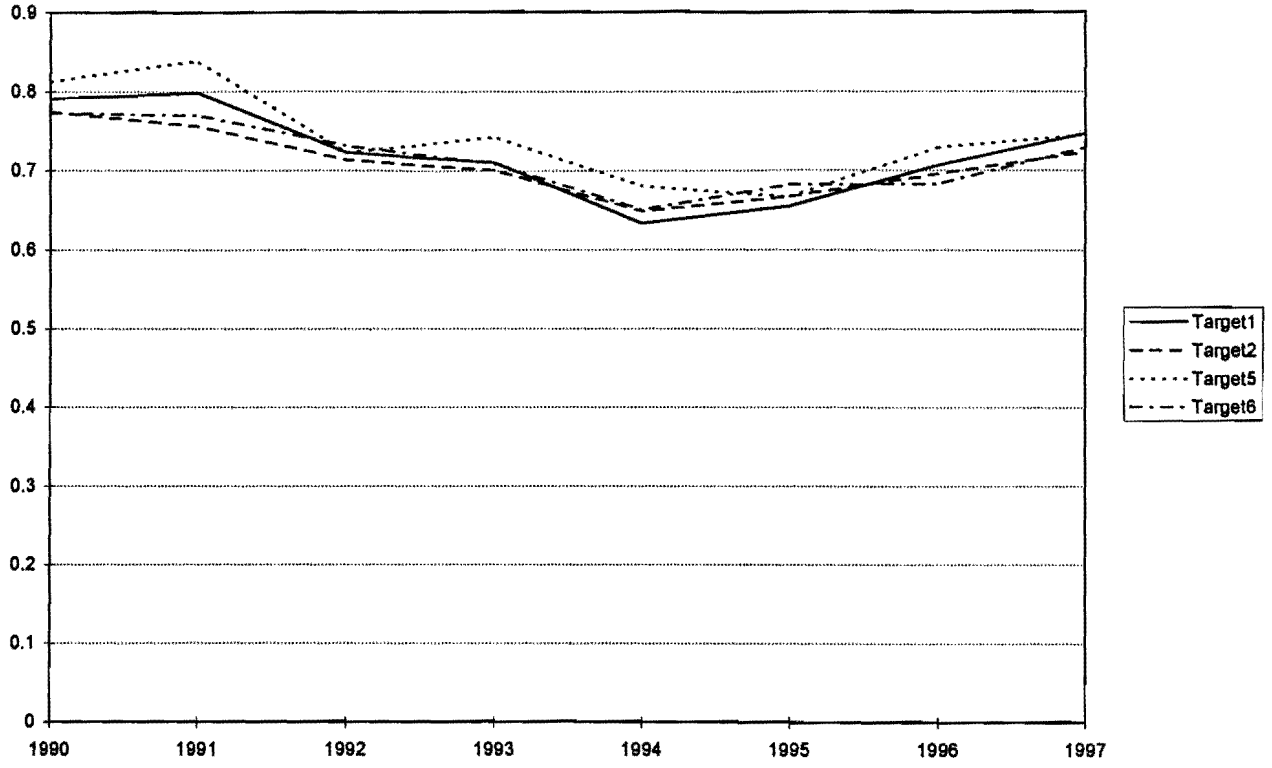
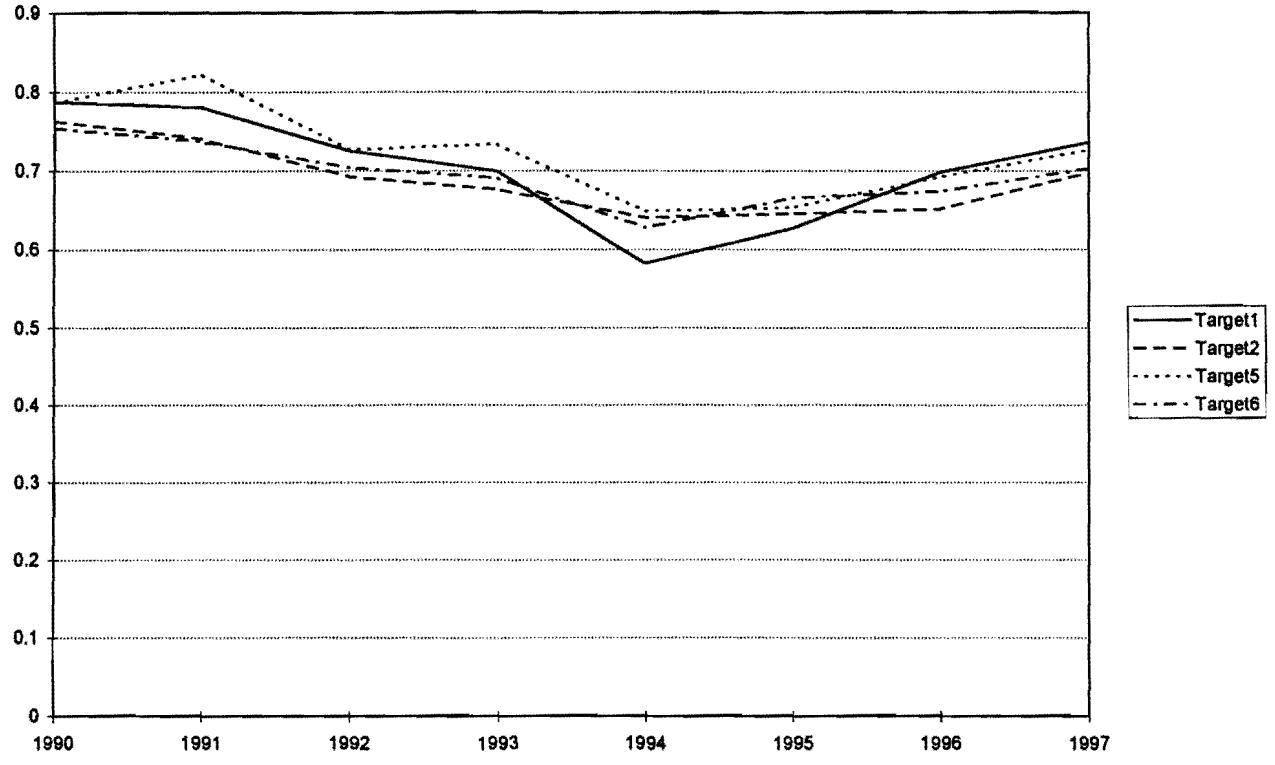


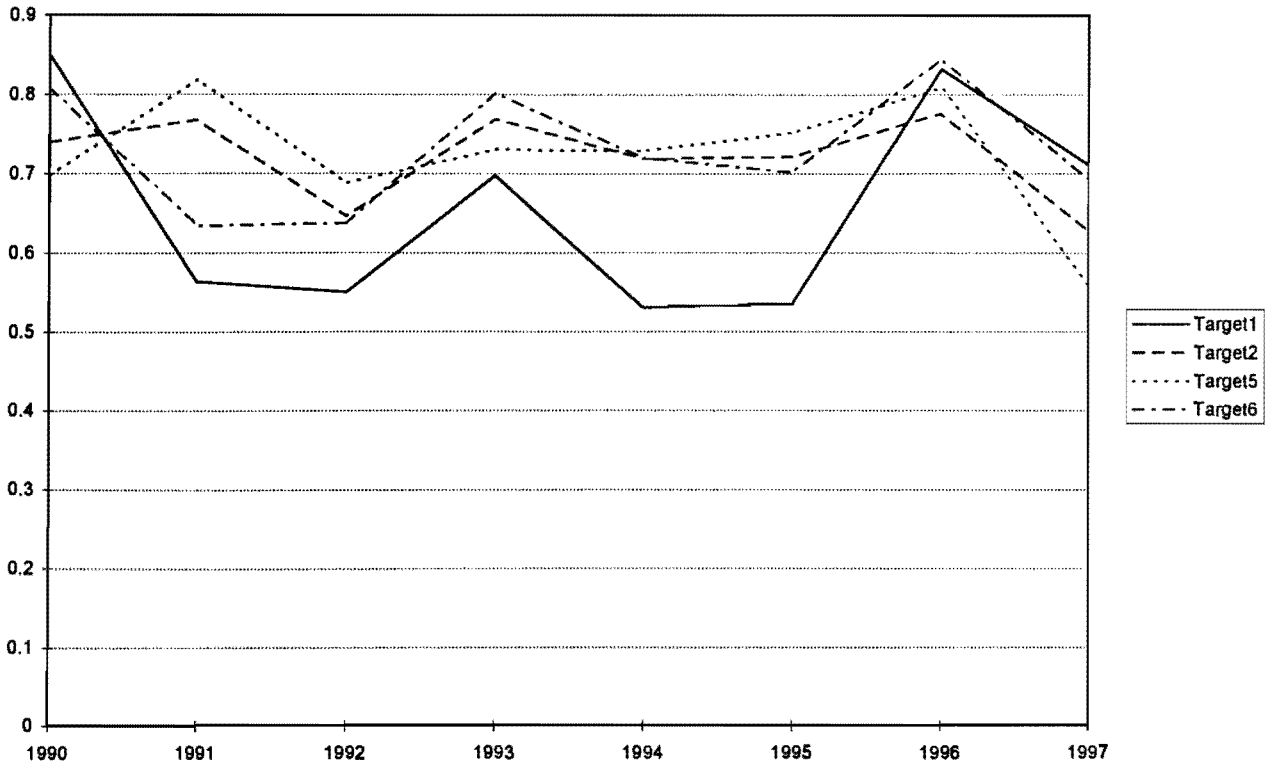
Measures of Labor Force Participation: Los Angeles MSA



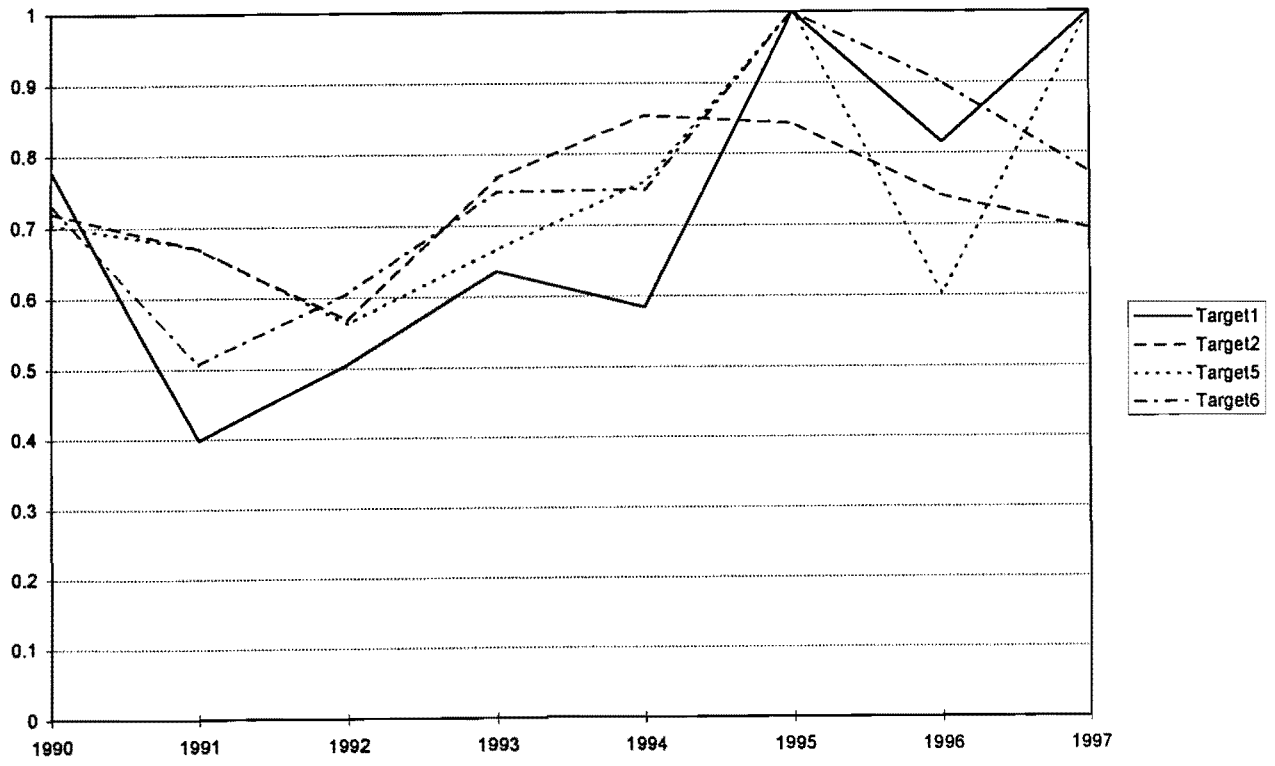
Measures of Labor Force Participation: Los Angeles Central City



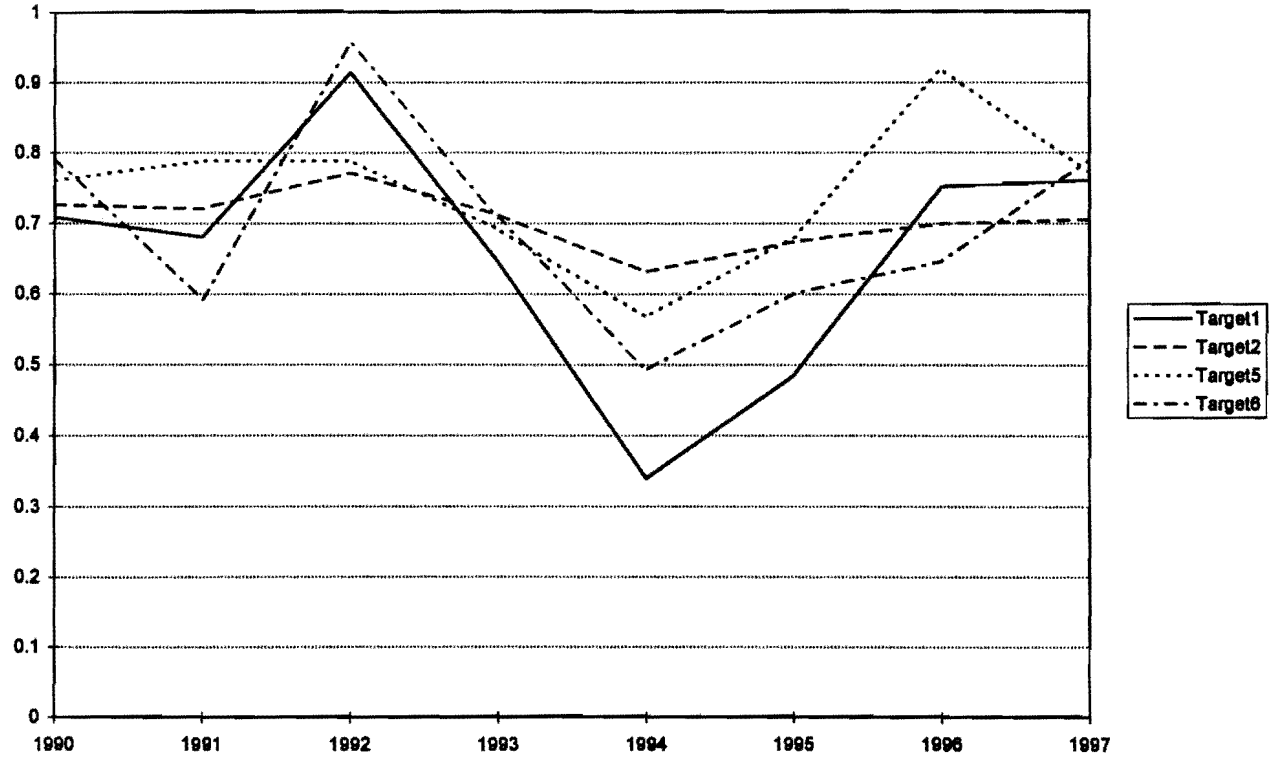
Measures of Labor Force Participation: San Francisco MSA



Measures of Labor Force Participation: San Francisco Central City



Measures of Labor Force Participation: Cleveland MSA



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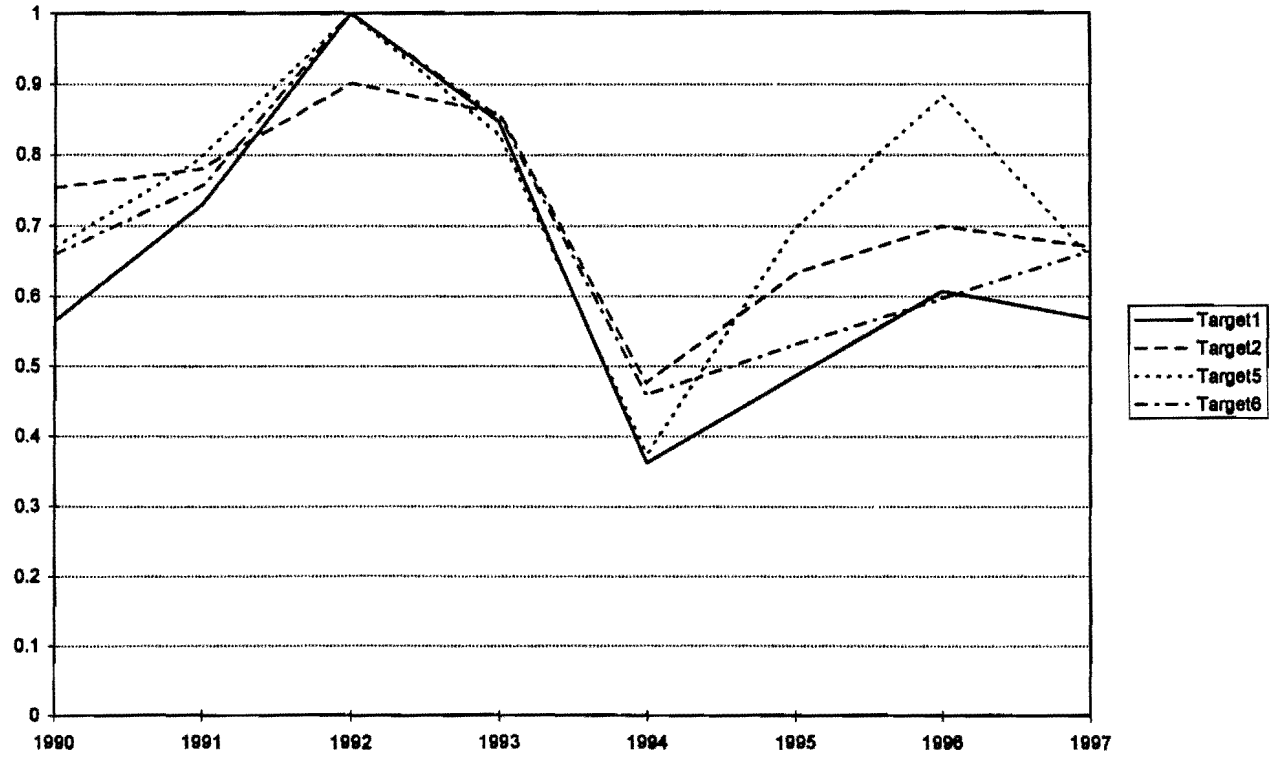
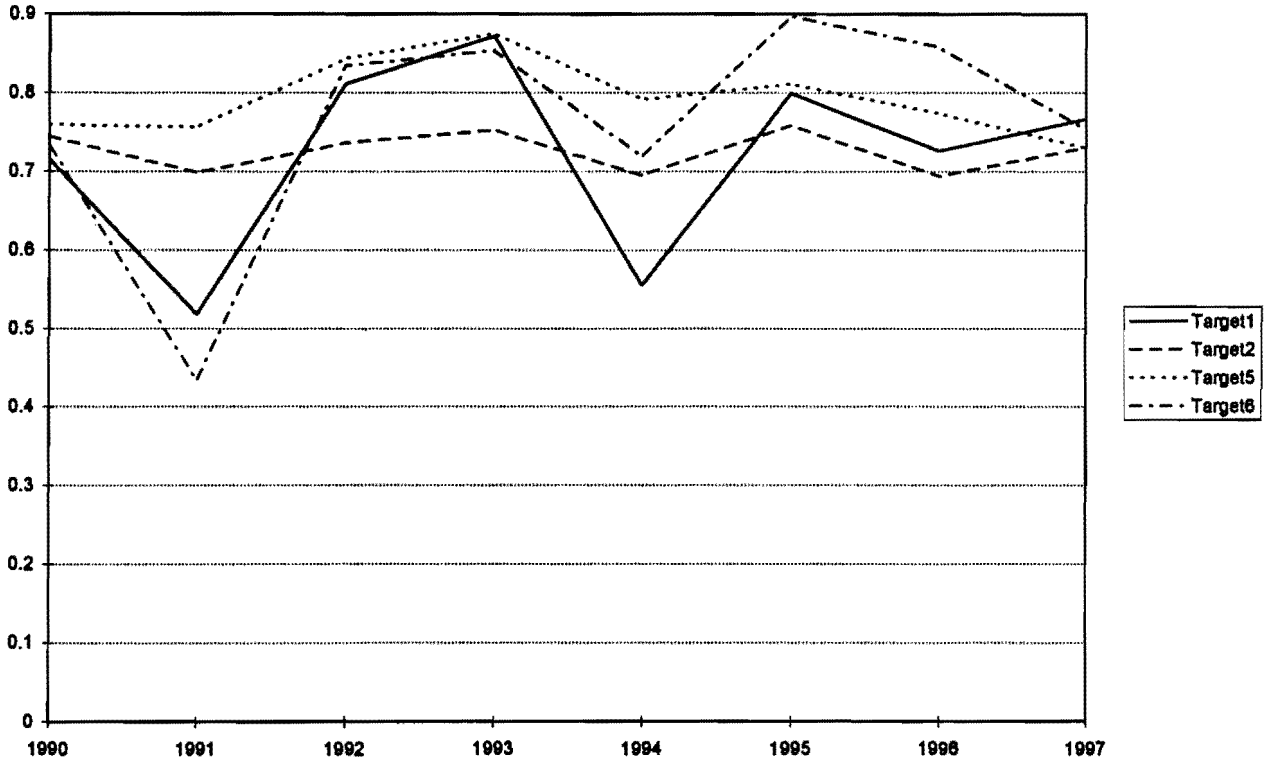
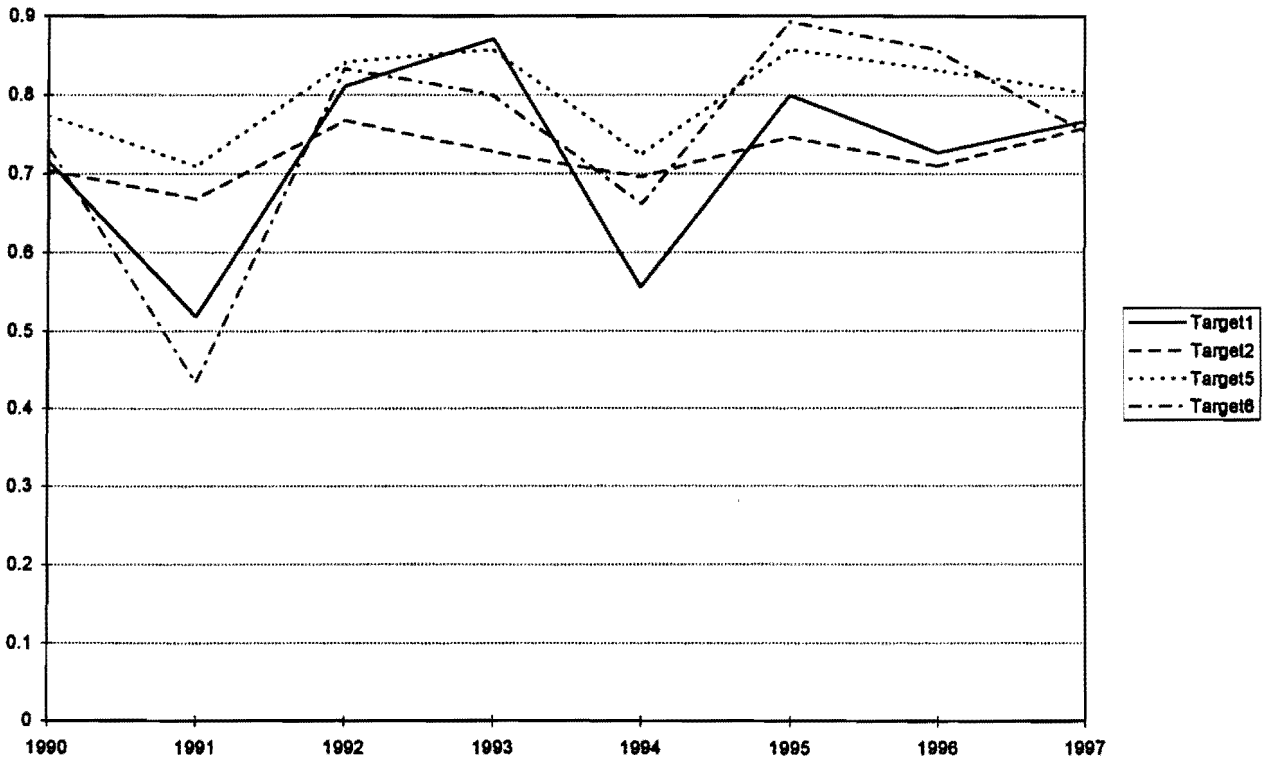


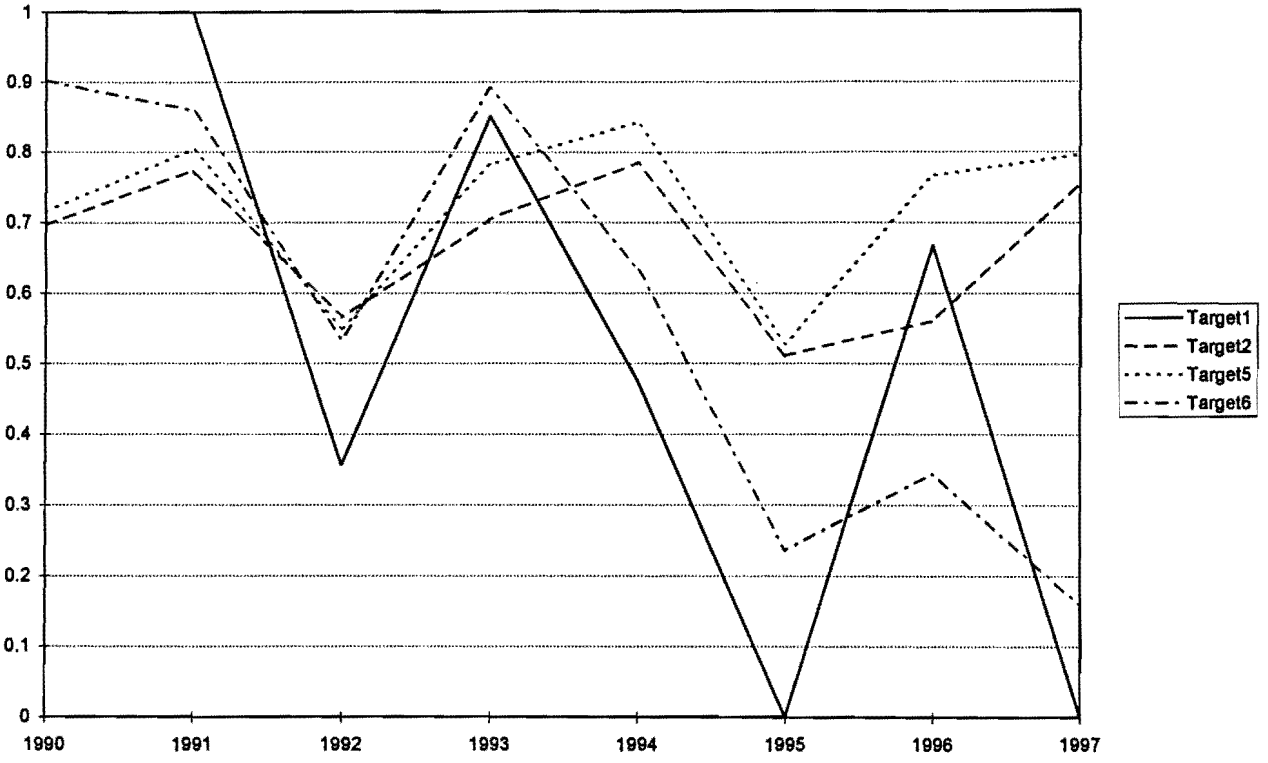
Measures of Labor Force Participation: Columbus MSA



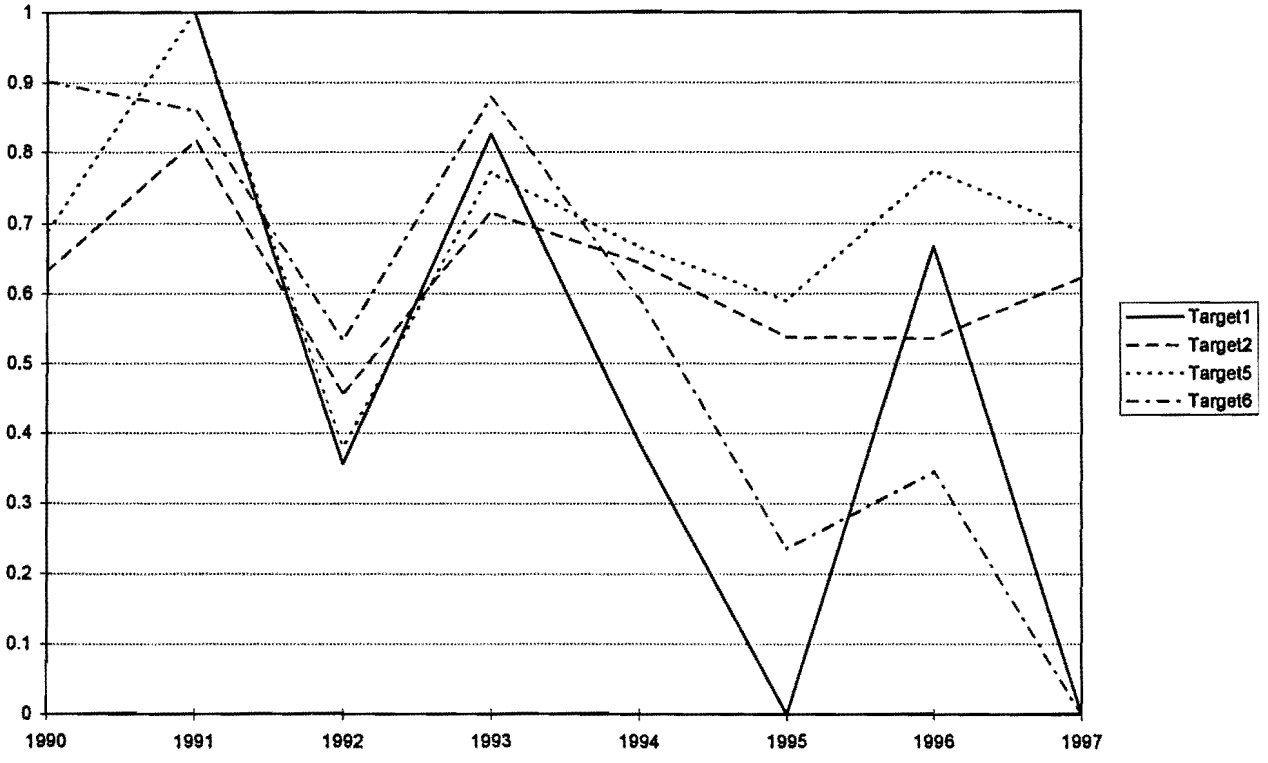
Measures of Labor Force Participation: Columbus Central City



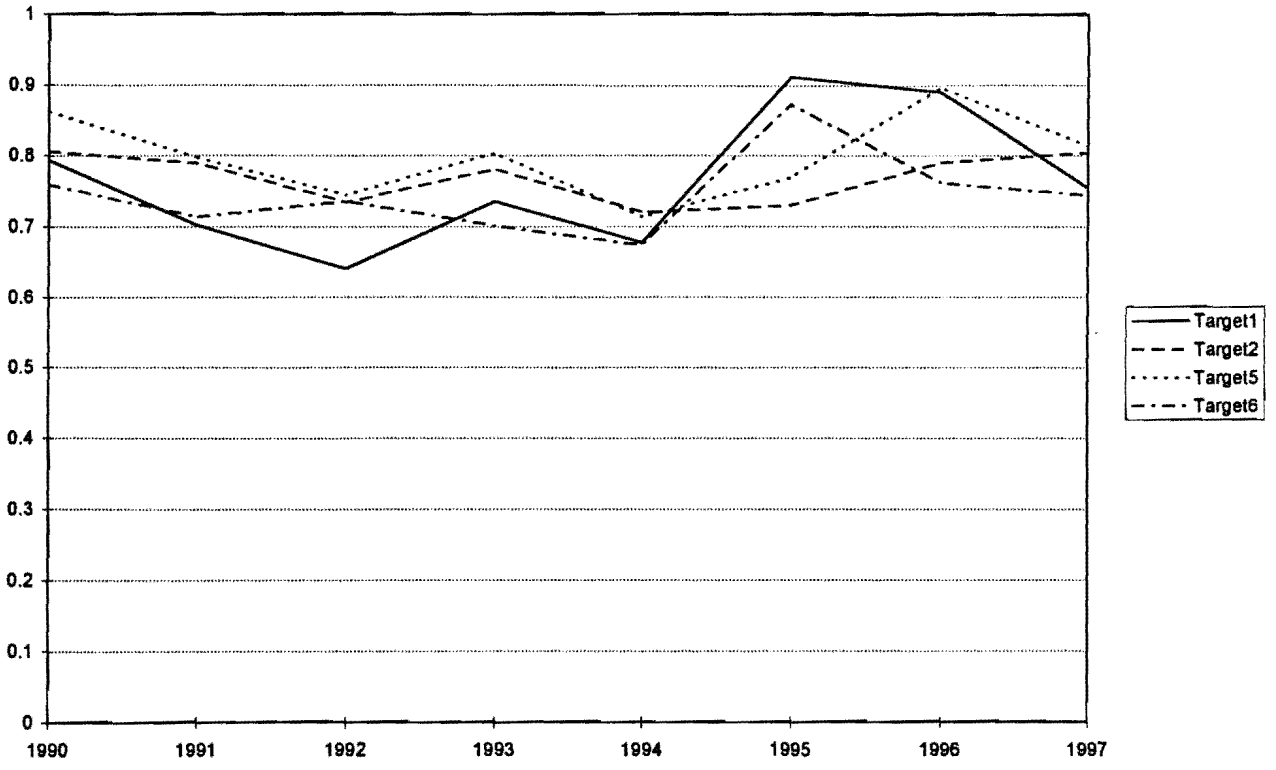
Measures of Labor Force Participation: Toledo MSA



Measures of Labor Force Participation: Toledo Central City



Measures of Labor Force Participation: Dallas MSA



Measures of Labor Force Participation: Dallas Central City