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Training Needs and Costs in Kalamazoo's Core Neighborhoods

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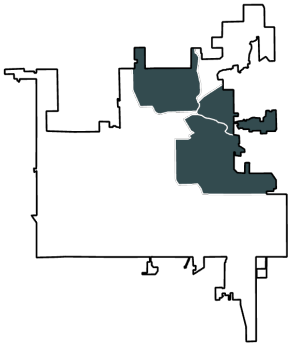
Training Needs and Costs in KALAMAZOO'S CORE NEIGHBORHOODS

Geography

This report estimates training needs in three Kalamazoo "core neighborhoods": the Northside, Edison, and the Eastside.



Possible Training Population

The number of people potentially needing training in these neighborhoods is estimated to be between:

1,254 & 2,098 individuals

Possible Training Population Characteristics*

- **56.6%** are women
- **16.8%** are women with children under 5
- **25.2%** have no vehicle in the household
- **12.3%** Worked Less than 14 Weeks in Prior Year
- **29.4%** have a reported disability
- **57.2%** receive SNAP benefits
- **64.9%** are Black persons
- **8.9%** identify as being Hispanic

*Figures based on persons who are ages 18–44, have income less than twice the poverty line, have a GED or diploma, and did NOT work full-time full-year. These figures represent all 3 core neighborhoods combined.

Estimated Cost

TOTAL ESTIMATED COST: between **$9 and $16 million** ($7,300 times 1,254 or 2,098)

ANNUAL ESTIMATED COST: If implemented at the lower scale over 5 years, the program would enroll about 250 trainees per year and cost a little **less than $2 million** annually.

PROMISE INVESTING IN COMMUNITY a project of the W.E. Upjohn Institute
W.E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

TRAINING NEEDS AND COSTS IN KALAMAZOO'S CORE NEIGHBORHOODS

Timothy J. Bartik, Bridget Timmeney, Zachary Brown, Gerrit Anderson, Kathleen Bolter, Nicholas Martens, and Brian Pittelko

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ABSTRACT

This report estimates training needs in three Kalamazoo "core neighborhoods": the Northside, Edison, and the Eastside. Using Census data, the analysis estimates the number of people potentially needing training in these neighborhoods as between 1,254 and 2,098 individuals. This report also estimates this training population's characteristics, including: childcare needs, lack of a household vehicle, disability, felony records, substance abuse, mental illness. All these characteristics pose challenges for many hundreds in the training population. Based on a review of prior effective "sectoral training programs", a training program may cost $7,300 per trainee, with over two-thirds of this cost due to various support services before and after training, and less than one-third of the cost due to the actual training. For a program to serve these neighborhoods' estimated "training population", total estimated costs are between $9 and $16 million ($7,300 times 1,254 or 2,098). If implemented at the lower scale over 5 years, the program would enroll about 250 trainees per year and cost a little less than $2 million annually.

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The Kalamazoo Promise and the City of Kalamazoo's Shared Prosperity Initiative requested assistance from the Upjohn Institute to identify the potential scope for a targeted training program. This memo estimates the number of persons needing job training, and the costs of providing training and training related services, in three Kalamazoo "core neighborhoods": the Northside, Edison, and the Eastside.

Looking at these neighborhoods' population of "persons needing job training," this memo then estimates the likely proportion of eligible trainees who have various characteristics. These characteristics include: age, sex, recent work experience, presence of young children, household car availability, disability, felony record, substance abuse barriers and mental health barriers. These characteristics inform the cost analysis, and should also inform program design. The premise of the analysis is that a training program must seek to meet the likely training needs of potential trainees, and include services that help address trainees' likely challenges, while also considering local business needs.

Using both Census tract data and estimates derived from Census Public Use Microdata, this analysis suggests there are from 1,254 to 2,098 potential eligible trainees living in the core neighborhoods identified. This training group is further analyzed to determine the proportions that have the characteristics noted above. From this analysis, we know the proportion of potential trainees who face various challenges. We then provide plausible cost estimates, based on serving everyone in this group, with an intensity of services appropriate to addressing their training needs and employment challenges.

METHODOLOGY AND ASSUMPTIONS TO GENERATE ESTIMATE OF THE ELIGIBLE TRAINING POPULATION IN KALAMAZOO CORE NEIGHBORHOODS

To estimate training needs by neighborhood, we use Census data. Because the published Census Bureau tables do not provide all the detail needed for this analysis, we created a methodology that allows us to estimate the needed greater detail. More specifically, we start with some standard Census tables, which the Census Bureau provides by Census tract. But to refine these estimates, we then combine these tables with estimates from Census "microdata" on individual persons, from the American Community Survey (ACS).

To provide a brief look at our methodology, we provide the following summary of our assumptions and analysis. The Census provides numerous tables for every Census tract in the United States using information from the pooled five-year ACS. The most recent such data are from 2015–2019.[1] The ACS is about a 1.5 percent annual sample, which rotates over time, so the five-year sample is based on survey responses from about 7.5 percent of the U.S. population.

To start to estimate training needs by Kalamazoo neighborhood, we use Census tract estimates that report the number of persons by age group by ratio of family income to family "needs."

[1] The ACS ran into some significant problems in collecting data during the pandemic, in 2020. As a result, the 2020 ACS is only available in an experimental form, and the pooled 2016–2020 ACS will be much delayed, until March of 2022, as the Census Bureau tries to deal with "non-response bias." .

(Census Table B17024). The family "needs" level is the level of income that defines poverty status for that family, based on the family's size and composition, that is, the threshold goes up if the family is larger.

To determine training needs, we assume that only persons ages 18–54 are potential candidates for training. Those younger are engaged in K–12 education, and those older are likely less interested in training because they are closer to retirement age. In addition, one would assume that persons ages 18–44 are even more likely to be candidates for training, as persons in the late 40s and early 50s might also feel they are less able to switch career paths.

Among these age groups, we identify potential training candidates as those with a family income-to-needs ratio less than 2 or 3; that is, their family income ratio to the poverty line is less than two or three times the poverty line. As has been widely discussed, families who are somewhat above the poverty line also have significant economic struggles to meet basic living needs. For example, the United Way has developed an income threshold that identifies persons who are in the "ALICE (Asset Limited, Income Constrained, Employed) population." The ALICE threshold is based on what it takes for a family to be able to meet basic needs, but in practice it ends up being around 2.5 times the poverty line.

Based on these criteria, the potential training population, broadly defined, is given by the following entries, derived from Census Table B17024 for the Census tracts in these neighborhoods.[2]

Table 1 Broadly Defined Training Population in Kalamazoo Core Neighborhoods

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0 poverty	Below 3.0	Below 2.0 poverty	Below 3.0	Below 2.0 poverty	Below 3.0	Below 2.0 poverty	Below 3.0
18–24	242	325	111	200	268	414	621	939
25–34	435	513	280	365	417	640	1,132	1,518
35–44	419	450	200	286	750	915	1,369	1,651
45–54	528	674	83	149	274	491	885	1,314
Total 18–44	1,096	1,288	591	851	1,435	1,969	**3,122**	4,108
Total 18–54	1,624	1,962	674	1,000	1,709	2,460	4,007	**5,422**

Across all three neighborhoods, there are 3,122 persons who might be interested in training, if we restrict attention to those ages 18–44 who are also in families below twice the poverty line. If we include 45–54-year-olds, and those up to three times the poverty line, the potential training population is 5,422 individuals.[3]

This initial cut of the population data is an overestimate of the training population, however, and a further look at education and current work patterns is important. The research literature

[2] The Northside is defined as Census tracts 2.02 and 3, the Eastside as Census tract 1, and Edison as Census tracts 9 and 10. This is close to but not identical to official city of Kalamazoo neighborhood definitions, differing primarily in coverage for the Eastside and Edison neighborhoods. However, areas excluded from both the Eastside and Edison neighborhoods are primarily zoned for nonresidential, and thus should not be considered for this research. An additional problem is that Edison only includes a portion of Census tracts 11.00 and 18.01, and Eastside only includes a portion of tract 18.03, so including those tracts would also include other neighborhoods.

[3] We boldface table numbers referred to in the text, to help readers locate the numbers.

suggests that the most successful training programs are sectoral training programs, which target occupations in high demand by employers, and which seek to meet both trainee needs and employer needs.[4] These successful programs impose minimum academic benchmarks on trainees, such as reading at least at a 6th grade to 10th grade level. In practice, these successful programs usually enroll a training population that is over 90 percent persons with at least a GED or a high school diploma. Persons without a high school degree might be targeted by a GED prep program, which then might be followed by occupational training; our understanding is that this two-part design is not the primary training design for the proposed program.

Another grouping to remove from the initial estimate are persons already working full-time full-year. Such persons already have significant work commitments, and are unlikely to have the time or motivation to engage in a significant training program. Again, such persons might be targeted by programs that engage with employers to improve incumbent worker training, which is also not the likely focus of the proposed program.

Therefore, we wish to narrow down the eligible training population to only include persons who 1) have at least a high school diploma or GED, and 2) are NOT working full-time full-year (FTFY), where we define FTFY as working 48 or more weeks per year and 35 or more hours per week. Unfortunately, the Census data does not offer this breakdown by Census tract. We instead estimate this information using Census microdata from the ACS.

In addition to the normal Census tabulations, the ACS also releases "microdata," that contains very detailed information on each sampled individual. This microdata is available for about a 1 percent annual sample of the population or about two-thirds of the total surveyed individuals.

To respect individual confidentiality, the Census Bureau only reports the location of individuals in "Public Use Microdata Areas" (PUMAs) of at least 100,000 people. The relevant PUMA for the Kalamazoo area comprises the cities of Kalamazoo and Portage. In order to adjust the larger PUMA geography to generate relevant information for the five Census tracts for this study, our approach is to calculate weights that estimate, for each individual in the Kalamazoo-Portage PUMA, the probability that they live in each of these five census tracts.

These probabilities are chosen so that the resulting weights will lead to estimates that match, as closely as possible, the following published Census tables for each tract, reporting the number of persons in each category in that tract.

- Number of persons by age group and income-to-needs ratio.
- Number of persons by race
- Number of persons by Hispanic ethnicity.
- Number of persons by sex by weeks worked last year.
- Number of persons by educational attainment by age.

[4] Katz, Lawrence, Jonathan Roth, Richard Hendra, and Kelsey Schaber. 2021. "Why Do Sectoral Employment Programs Work? Lessons from WorkAdvance." Paper, Harvard University.

In other words, if a person has a race, ethnicity, work experience, and educational attainment that closely matches a particular tract, they are assigned a higher weight in the microdata, and if they have characteristics that do not so closely match the tract, they are assigned a lower weight. If one tract has more Black persons, and another tract more Hispanic persons, the weights will vary so that a Black survey respondent in the Kalamazoo-Portage PUMA will get a higher weight for the first tract, and a Hispanic survey respondent in the Kalamazoo-Portage PUMA will get a higher weight for the other tract. And similarly for other characteristics in the matched Tables.

Estimating such probability weights does not definitely identify the census tract where a person lives, but will identify a population that in some of its core characteristics (age, income, race, ethnicity, weeks worked, educational attainment) will closely resemble the tract's population. And our procedure is successful: we find that we are able to estimate fairly closely the above identified Census tract characteristics.

From this analysis, we restrict attention to persons in these neighborhoods within these age groups and income limits who also have at least a GED, and who do not work full-time full-year. These two criteria reduce the potential training population by around 60 percent (see Table 2). Of this reduction, slightly more than half is due to imposing the GED or diploma minimum, and the remaining, slightly less than half, is due to excluding those working full-time full-year.[5]

Table 2 Potential Training Population in Three Kalamazoo Core Neighborhoods: Persons in Different Age Groups Below Different Income-to-Needs Ratios, with at Least a GED and Who Did Not Work Full-Time Full-Year in the Prior Year

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	99	120	57	80	136	192	292	391
25–34	167	221	77	103	152	216	396	539
35–44	244	263	86	120	235	321	565	704
45–54	149	223	22	44	127	197	298	463
Total 18–44	510	603	221	302	523	729	**1,254**	1,635
Total 18–54	659	826	243	346	649	927	1,551	**2,098**

A possible bottom-line: the total number of likely trainees in the three neighborhoods is somewhere between 1,254 and 2,098. The former number is the number of persons ages 18–44 who are below twice the poverty line, have a GED or diploma, and did not work full-time full-

[5] For example, if we look at all three neighborhoods, and those 18–44 with an income/needs ratio of less than 2.0, the original total in Table 1 of 3,122 potential trainees is reduced 32 percent to 2,125 by imposing the requirement of a GED or high school diploma. Adding in the constraint of not working full-time full-year further reduces the potential trainees to 1,254 (Table 2), which is 40 percent of the original total in Table 1, a further reduction of 28 percent of the original total. If we instead look at those 18–54 with an income/needs ratio of less than 3, imposing the requirement of at least a GED reduces the training population from 5,422 to 3,786, a reduction of 30 percent. Also imposing the FTFY requirement reduces the training population to 2,098, which is a further reduction of 31 percent of the original training group. As one might expect, the GED/HS diploma requirement reduces numbers by a greater percent for the 18–24- and 45–54-year-old groups; excluding those working full-time full-year has the most impact for those 25 to 54.

year in the prior year. The latter number adds in persons ages 45–54, and expands the incomes considered to up to three times the poverty line.

To preview later results: it seems likely that in practice, the number of plausible training candidates will be closer to 1,254 than to 2,098, as there are other personal characteristics that may impede training eligibility. On the other hand, there may be persons without a GED or diploma, or those who work FTFY, who will end up enrolling in training, but this appears likely to be outweighed by factors reducing the potential training numbers.

By age group, the training population of 1,254 breaks down as 23 percent ages 18–24, 32 percent ages 25–34, and 45 percent ages 35–44. The training population of 2,098 breaks down as 19 percent ages 18–24, 26 percent ages 25–34, 34 percent ages 35–44, and 22 percent ages 45–54. Therefore, any training program will need to figure out how to be attractive to persons in their 30s and early 40s, not just younger potential trainees. On the other hand, a significant number of potential trainees will also be in their 20s, and some potential trainees may be in their late 40s and early 50s.

But based in part on our methodology, which probabilistically matches individuals in the Kalamazoo-Portage PUMA to these three neighborhoods, we can also examine other characteristics of this potential training population, which may affect how the training program should be designed. We turn to this task in the next section.

CHARACTERISTICS OF TRAINING POPULATION IN KALAMAZOO CORE NEIGHBORHOODS

We now consider other characteristics of this training population, which may also inform training program design. Using our probabilistic matching of the Kalamazoo/Portage PUMA to these three neighborhoods, we estimate the percentages of this training population who have the following characteristics: sex; a child under 5, by sex; in a household that lacks a car; low prior work experience; Black and Hispanic; disability barriers; public assistance/food stamp recipient. Because the Census does not collect data on difficult-to-ask questions, we will survey other research literature to estimate plausible percentages of the training population who may face challenges due to a felony record, substance abuse, or mental illness.

Female vs. Male

Table 3 shows the percentage female, by age group, income group, and neighborhood.

Table 3 Percentages Female of "Training Population," by Age, Income Group, and Neighborhood

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	64.9%	59.3%	78.9%	75.6%	51.0%	41.3%	61.1%	53.8%
25–34	32.8%	32.5%	61.5%	68.3%	45.7%	56.0%	43.4%	48.7%
35–44	68.1%	65.6%	59.7%	50.5%	59.9%	52.2%	63.4%	56.9%
45–54	70.1%	71.9%	57.2%	69.0%	44.9%	56.4%	58.4%	65.0%
Total 18–44	56.0%	52.3%	65.3%	63.2%	53.5%	50.4%	**56.6%**	53.5%
Total 18–54	59.2%	57.6%	64.5%	63.9%	51.8%	51.7%	56.9%	**56.0%**

As the table shows, overall a majority of the training population is female.[6] But there are also a significant number of males in the training population. For example, across all three neighborhoods, among the 1,254-training population (persons who were ages 18–44, had income less than twice the poverty line, had a GED or diploma, and did NOT work full-time full-year), 56.6 percent were female. But this of course also means that 43.4 percent were male. Among the 2,098-training population (persons who were ages 18–54, had income less than three times the poverty line, had a GED or diploma, and did not work FTFY), 56 percent were female, and 44 percent were males.

How does this affect training program design? Although obviously we want to encourage persons of any gender identity to enter any well-paying occupation they prefer, there also still are occupational patterns in gender allocation that may reflect cultural beliefs, stereotypes, and prejudices. For example, in prior effective job training programs, females tended to differentially enroll in health-related training programs, whereas males tended to enroll in manufacturing and information technology related training programs (Katz et al. 2021).

Children Under 5, by Sex

Table 4 shows the percent of the training population, by sex (Female in Panel A, Male in Panel B) that has at least one own child under age 5 living with them.[7]

[6] Why is the majority female? This pattern could be further analyzed in a more extensive study. It may reflect in part males in prison or jail. It may also reflect fewer males with a GED or diploma, and more males working full-time full-year.

[7] In almost all cases this is just one child under age 5.

Table 4 Percentage Training Population with Child Under 5

PANEL A: Female

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	13.0%	12.1%	18.4%	15.4%	9.6%	9.7%	13.0%	12.1%
25–34	42.5%	33.9%	38.0%	29.2%	31.4%	29.3%	**36.8%**	30.5%
35–44	9.6%	9.3%	10.3%	9.5%	8.1%	9.4%	9.1%	9.4%
45–54	1.6%	1.0%	0.7%	0.3%	1.2%	0.6%	1.4%	0.8%
Total 18–44	16.7%	15.5%	22.0%	18.6%	14.3%	16.0%	**16.8%**	16.4%
Total 18–54	12.6%	10.6%	20.2%	16.1%	12.1%	12.4%	13.8%	12.4%

PANEL B: Male

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	15.0%	10.8%	0.4%	0.3%	1.3%	0.8%	5.4%	3.4%
25–34	22.6%	17.3%	19.4%	18.4%	3.9%	4.6%	15.3%	13.0%
35–44	0.7%	0.6%	2.9%	3.6%	9.3%	8.1%	5.0%	5.0%
45–54	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total 18–44	13.8%	10.9%	8.9%	7.4%	5.3%	4.9%	**9.3%**	7.5%
Total 18–54	11.5%	9.0%	7.9%	6.6%	4.1%	3.9%	7.6%	6.2%

On the one hand, one could say that the childcare needs are lower than one might expect. For example, consider persons ages 18–44, under twice the poverty line, who have at least a GED or high school diploma. Out of the 1,254 people in this training population, only 170 have their own child under age 5 living with them. If we add in the older age trainees, ages 45–54, below three times the poverty line, we only add in another 33 with own children under age 5, for a total of 203 persons in this group with an own child under age 5 living with them.

But the percent of the training population that might need childcare is much higher for certain groups. Among those ages 18–44, below twice the poverty line, the percentage is 16.8 percent for females, 9.3 percent for males. And among younger groups, the percent living with a child under age 5 is much higher. For example, for females ages 25–34, under twice the poverty line, the average percentage with an own child under age 5 living with them is 36.8 percent.

The implication for training program design is that if the program really wants to be inclusive of all age groups and genders, some attention to childcare needs is important. On the other hand, the percent of the training population that potentially needs childcare help is low enough that the cost of providing such help, averaged over all trainees, may not be inordinately high.[8]

[8] Do we know that all these persons with a child under age 5 need childcare? No, we do not, as we did not examine comprehensively whether there is "someone else" in the household who might provide childcare. We did look at what percentage of persons with a child under age 5 did not have a "spouse present." For the group ages 18–44, under twice the poverty line, the percentage of those with an under 5-year-old, but without a spouse present was 83.3 percent for females, and a perhaps surprisingly high 79.2 percent for males. But this does not capture whether childcare might be available from an unmarried partner, or from another relative living in the household. For the 33

Proportion Without Car in Household

Table 5 shows the percentage of the training population, by neighborhood, age group, and income-to-needs ratio, that does not have a vehicle available in their household.

Table 5 Percent of Possible Training Population with No Vehicle in Household

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	21.1%	17.5%	20.9%	14.9%	6.3%	4.5%	**14.2%**	10.6%
25–34	9.2%	6.9%	16.6%	12.5%	11.1%	7.8%	11.3%	8.3%
35–44	49.7%	46.3%	38.7%	27.9%	32.0%	23.3%	**40.7%**	32.7%
45–54	**35.6%**	23.8%	**18.2%**	9.3%	**11.5%**	7.4%	24.0%	15.4%
Total 18–44	30.9%	26.2%	26.4%	19.2%	19.2%	13.8%	**25.2%**	19.3%
Total 18–54	32.0%	25.5%	25.6%	18.0%	17.7%	12.4%	25.0%	18.5%

Overall, this table suggests that the "no vehicle" problem is perhaps a bit smaller than one might have expected. Among the smaller 1,254 training group over all three neighborhoods (those ages 18–44, less than twice poverty line, who have at least a GED or diploma, and do not work full-time full-year), only 25.2 percent lack any vehicle in their household. Among those above twice the poverty line, almost all have a vehicle in the household.

However, lack of a vehicle may be a greater problem in the Northside neighborhood, compared to the Eastside and Edison neighborhoods. For example, in the 45-54-year-old training population below twice the poverty line, 35.6 percent of those living in the Northside neighborhood lack a vehicle, compared to 18.2 percent in the Eastside neighborhood, and 11.5 percent in Edison. Of course, whether this potential problem poses a major employment barrier also depends upon where good jobs are located relative to the neighborhood, and the plausibility of use of ride sharing or buses to jobs in the neighborhood.

Lack of a vehicle also seems to be a greater problem for the 35–44-year-old age group. Over all three neighborhoods, for persons below twice the poverty line, 40.7 percent of persons in this age group lack vehicles in the household, compared to only 14.2 percent lacking vehicles in the 18–24-year-old group. The older age group may be less likely to live with parents or other relatives or friends who have vehicles.

Proportion with Little Work in Prior Year

Table 6 shows the percentages of the potential training population, and various of its sub-groups, that had little work experience the prior year. "Little work experience in prior year" is defined as persons who worked 13 or fewer weeks during the prior year, or who did not work at all during the prior year.

additional children under 5 who live with persons in the larger 2,098 trainee group, only six are with a parent without a spouse present.

Table 6 Percent of Potential Training Population Who Worked Less than 14 Weeks in Prior Year

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	33.9%	44.9%	22.0%	27.5%	22.0%	39.7%	**26.0%**	38.8%
25–34	0.8%	10.7%	6.2%	25.1%	18.7%	24.3%	8.7%	18.9%
35–44	1.8%	4.6%	5.4%	12.0%	14.8%	13.0%	7.7%	9.7%
45–54	**20.1%**	13.4%	21.7%	11.0%	13.2%	8.5%	17.3%	11.1%
Total 18–44	7.7%	14.8%	10.0%	20.6%	17.8%	23.4%	**12.3%**	19.7%
Total 18–54	10.5%	14.4%	11.0%	19.4%	16.9%	20.2%	13.3%	**17.8%**

Overall, most of the potential training population, even though they did not work full-time full-year, did work more than one-quarter of the weeks in the prior year. Among the 1,254-training population (2,098 training population), the percentage working less than 14 weeks is 12.3 percent (17.8 percent). Obviously, this implies that the percentage working more than one-quarter of the year is 87.7 percent (82.2 percent).

However, the percentage with little work experience the prior year is somewhat higher overall in the Eastside and Edison neighborhoods, compared to the Northside neighborhood. In addition, the percentage with little work experience the prior year is higher for persons ages 18–24, for example at 26 percent among those in this age range, in families below twice the poverty line. The percentage with little prior year work experience is also somewhat higher sometimes among those ages 45–54, for example this percentage is 20.1 percent among those below twice the poverty line in the Northside neighborhood. As statistics further below suggest, some of this pattern may be due to disability issues.

Disability Barriers

Table 7 shows the percentage of the potential training population that has any significant disability problem. The disabilities asked about include: cognitive; ambulatory; independent living difficulty; self-care difficulty; vision or hearing problems.

Although the survey responses are based on subjective reporting by a survey respondent, the questions do seek to elicit whether these issues cause major problems, not just minor problems. For example, the "cognitive difficulty" question asks: "Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?" The "ambulatory difficulty" question asks: "Does this person have serious difficulty walking or climbing stairs?" The "independent living difficulty" question asks: "Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping?"

Table 7 Percent of Potential Training Population with a Disability

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	18.5%	15.4%	15.8%	12.0%	6.8%	5.8%	12.5%	10.0%
25–34	10.7%	24.7%	18.9%	18.3%	26.4%	27.3%	18.3%	24.5%
35–44	56.4%	55.9%	42.0%	44.0%	36.4%	40.8%	45.9%	47.0%
45–54	**75.0%**	61.3%	32.6%	29.8%	26.4%	30.8%	51.1%	45.4%
Total 18–44	34.1%	36.5%	27.1%	26.8%	25.8%	27.6%	**29.4%**	30.7%
Total 18–54	43.3%	43.1%	27.6%	27.2%	25.9%	28.3%	33.6%	**34.0%**

The percentage reporting a serious disability is high, compared to what some readers might expect. Overall, among the 1,254-training population (2,098-training population), the percentage overall reporting a disability is 29.4 percent (34.0 percent).

Disability rates are particularly high among those ages 35 to 54, where around half of this training population reports some serious disability. The disability rates are particularly high in some of these older age groups in the Northside neighborhood. For example, among those ages 45–54 below twice the poverty line in the Northside neighborhood, 75 percent report a serious disability.

The implication is that a training program in these core neighborhoods will have to consider how to address training and employments needs related to disabilities. For a sectoral training program that seeks to meet employer's needs, the program will have to determine what disabilities are consistent with that goal, and how the training program can remove barriers related to disability challenges, or, alternatively, whether the sectoral training program needs to refer some potential trainees to more disability-oriented specialized training and supported work programs.[9]

Cash Welfare Receipt or "Food Stamp" Receipt (SNAP)

Table 8 reports "cash welfare" receipt and receipt of in-kind benefits from the Supplemental Nutrition Assistance Program (SNAP), sometimes still for historical reasons referred to as "food stamps." "Cash welfare assistance" includes Supplemental Security Income payments and benefits from the Temporary Assistance to Needy Families (TANF) program.

[9] We've done some preliminary further analyses of what disabilities are driving these high percentages. There appears to be no one disability that is the determinant. The highest disability rate is for difficulties with "independent living," followed closely by "cognitive difficulties" and "ambulatory difficulties."

Table 8A Percentage of Potential Training Population Receiving Cash Welfare Assistance

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	0.1%	0.1%	0.6%	0.4%	0.2%	0.1%	0.2%	0.2%
25–34	12.4%	9.3%	12.4%	9.4%	4.9%	4.2%	9.5%	7.3%
35–44	2.6%	2.4%	2.8%	2.1%	3.6%	2.7%	3.0%	2.5%
45–54	15.5%	10.3%	14.5%	7.4%	5.9%	3.8%	11.3%	7.3%
Total 18–44	5.3%	4.5%	5.6%	4.1%	3.1%	2.5%	4.4%	3.5%
Total 18–54	7.6%	6.0%	6.4%	4.5%	3.7%	2.8%	5.7%	4.3%

Table 8B Percentage of Potential Training Population Receiving SNAP (Supplemental Nutrition Assistance Program) Benefits

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	27.9%	23.2%	25.2%	18.7%	9.3%	11.8%	18.7%	16.7%
25–34	38.6%	45.9%	44.3%	37.6%	35.2%	33.3%	38.4%	39.3%
35–44	87.5%	86.7%	82.5%	77.1%	71.7%	68.5%	80.2%	76.8%
45–54	68.7%	49.6%	36.8%	22.0%	28.6%	18.8%	49.2%	33.9%
Total 18–44	59.9%	59.2%	54.3%	48.2%	44.9%	43.1%	**52.7%**	50.0%
Total 18–54	61.9%	56.6%	52.7%	44.9%	41.7%	37.9%	52.0%	46.4%

As Table 8 reveals, a very small percentage of this training population receives cash welfare benefits. On the other hand, a sizable percentage, about half overall, receives in-kind assistance with obtaining food from SNAP. The true percentage may be even higher, as prior research suggests that SNAP receipt is under-reported.

For program management, this suggests that the training program needs to coordinate with SNAP to make sure, for example, that the training program is designed so that "able-bodied" persons without dependents meet SNAP work/training requirements. For this group, SNAP generally requires at least 20 hours per week in some combination of employment and approved training activities. In addition, the post-program follow-up should be aware of issues that may arise as earnings increase and there are some cutbacks in SNAP benefits.

For evaluation, this pattern suggests that if this training program is successful, it may significantly reduce the federal government's costs of providing SNAP. This suggests that the program is less costly on net to the government than it might at first appear, but it is unlikely that this will be a plausible source of financing the training program: it would take some unusual political advocacy to enable the federal government to provide funding for the training program based on the cost savings that the federal government realizes from the training program.

Proportion Black and Hispanic

Table 9 reports the percentages of the potential training population who were identified by survey respondents as being Black (Table 9A) or Hispanic (Table 9B).

Table 9A Percent of Potential Training Population Who Are Identified by Survey Respondents as Black Persons (not counting multiracial or Hispanic)

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	**64.5%**	**67.6%**	36.3%	41.2%	21.3%	29.6%	38.9%	43.6%
25–34	89.9%	90.2%	60.5%	62.7%	36.0%	31.3%	63.5%	61.4%
35–44	92.4%	91.4%	82.3%	77.8%	64.6%	63.1%	79.3%	76.2%
45–54	55.6%	68.4%	17.9%	44.0%	10.1%	21.7%	33.4%	46.2%
Total 18–44	**86.2%**	**86.2%**	**62.8%**	**63.0%**	**45.0%**	**44.9%**	**64.9%**	63.5%
Total 18–54	**79.3%**	**81.4%**	**58.7%**	**60.6%**	**38.2%**	**39.9%**	58.9%	**59.7%**

Table 9B Percentage of Potential Training Population Who Were Identified by Survey Respondents as Being Hispanic

	Northside		Eastside		Edison		All 3 neighborhoods	
Age	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work	Below 2.0, GED or more, no FTFY work	Below 3.0, GED or more, no FTFY work
18–24	0.9%	0.7%	9.9%	7.4%	**33.9%**	**25.4%**	18.0%	14.2%
25–34	0.3%	0.3%	6.2%	5.4%	**28.7%**	**23.7%**	12.4%	10.6%
35–44	0.2%	0.2%	2.2%	2.0%	3.4%	4.3%	1.8%	2.4%
45–54	0.0%	0.0%	0.0%	1.0%	0.5%	5.0%	0.2%	2.2%
Total 18–44	**0.4%**	**0.4%**	**5.6%**	**4.6%**	**18.7%**	**15.6%**	**8.9%**	7.9%
Total 18–54	**0.3%**	**0.3%**	**5.1%**	**4.1%**	**15.1%**	**13.3%**	7.3%	**6.7%**

Across the three neighborhoods, more than half of the potential training population are identified by ACS survey respondents as being Black, and between 5 percent and 10 percent are identified by ACS survey respondents as being Hispanic. The neighborhood patterns are as one might expect: the percentage of the training population that are identified as Black persons is highest in the Northside neighborhood, followed by the Eastside neighborhood and then by the Edison neighborhood. The percentage identified as Hispanic is highest in the Edison neighborhood.[10]

Note that the percentage of Black persons in the Northside neighborhood is somewhat lower for 18–24-year-olds. This is not due to a higher percentage of white persons in that age group on the Northside, rather it is due to a higher percentage classified as other race categories, which appears to be mostly reporting two or more races. In addition, the Hispanic percentage in Edison is greater for younger age groups.

The racial and ethnic percentages are relevant to this training program in part because the training programs may need to address racial prejudices and racial discriminatory behavior by some employers. In addition, the training staff will probably be more effective if overall the staff

[10] We've also calculated the percentage of the training population that is identified by survey respondents as white non-Hispanic. This overall percentage for the 1,254-training population (2,098 training population) is 20 percent (28 percent). The percentage identified as white non-Hispanic is highest in the Edison neighborhood, lowest in the Northside neighborhood.

is significantly representative of the racial and ethnic groups being served in particular neighborhoods.[11]

Felony Record, Substance Abuse, and Mental Illness

For a variety of reasons, including the need to increase survey response, the Census does not ask about some personal characteristics that might be deemed sensitive. Among those characteristics omitted from Census surveys are whether a person has a felony record, a substance abuse issue, or a mental illness. But these characteristics are relevant to training programs, as these characteristics may pose challenges to successful completion of a training program and/or placing people in good jobs.

There is, however, some research literature that estimates the proportion of adults with such challenges. For felony records, the most recent information (estimated for 2010) suggests that the percentage of U.S. adults with a former felony conviction is 6 percent overall, and 10 percent for males (which implies 2 percent for females).[12] Among African-Americans, the percentage of adults with a former felony conviction is 18 percent, and 25 percent for African-American males (implying 11 percent for African-American females).[13]

These are overall percentages for the U.S. adult population. What percentages are plausible for the training population in these three Kalamazoo neighborhoods? Obviously, this is hard to say, as 1) Kalamazoo differs from the U.S. as a whole; 2) this training population includes more younger people than the entire adult population; 3) this training population excludes high school dropouts, who would be expected to have a higher prior felony record; and 4) this training population excludes those working full-time full-year, who would be expected to have a lower prior felony record.

Overall, however, it would not be shocking if 10 or 20 percent of this training population faced challenges due to a prior felony conviction. Therefore, the training program design will need to think about how such challenges might be addressed, for example, in what employers to target and how supportive services are designed. Some staff with experience in these issues might be helpful.

For substance use problems, the federally-sponsored National Survey on Drug Use and Health has both national and state-specific information on persons who, during the prior year, had "alcohol use disorders," "illicit drug disorders," or had either of those disorders. "Disorders" with either alcohol use or illicit drug use are defined based on whether the person meets a certain number of criteria for alcohol or drug dependence, or whether the person reports one or more major problems with their alcohol or drug use. Although these use and disorder measures are

[11] We also explored whether language barriers were an issue, as the ACS asks whether the person speaks English at all, and how well they speak English. However, almost no person is reported in these three neighborhoods as not speaking English well.

[12] Shannon, Sarah KS, Christopher Uggen, Jason Schnittker, Melissa Thompson, Sara Wakefield, and Michael Massoglia. "The growth, scope, and spatial distribution of people with felony records in the United States, 1948–2010." *Demography* 54, no. 5 (2017): 1795–1818.

[13] The prior felony record percentage for African-Americans appears to be lower in Michigan than the national average (Shannon et al. 2017). However, the state-level estimates are imprecise.

collected in a confidential survey, it is still a survey, and one might reasonably believe that the estimates are under-estimates.

The most recent estimates for Michigan, from the pooled 2018 and 2019 surveys, suggests that among those 25 and older, 5 percent have an alcohol use disorder, 2 percent have an illicit drug use disorder, and 6 percent have one or the other (implying 1 percent have both disorders). For Michigan residents ages 18–24, 10 percent have an alcohol use disorder, 8 percent have an illicit drug use disorder, and 15 percent have one or the other disorder (implying 3 percent have both disorders).

How these percentages apply to the training population in these core neighborhoods is unclear. However, these data do suggest that particular among the younger potential trainees, it would not be surprising if 10 percent or more have some significant substance abuse problems.

The same federal survey also includes information on mental health problems. Among those 25 and over in Michigan, 19 percent reported, in the past year, "any mental illness," and 5 percent reported "serious mental illness." "Serious mental illness" means that the mental illness "substantially interfered with or limited one or more major life activities." Among those ages 18–24, 28 percent reported "any mental illness," and 8 percent reported "serious mental illness."

Again, it is unclear how these percentages would vary with the training population in Kalamazoo core neighborhoods. However, it would not be surprising if 5 percent or more of the training population, particularly among younger age groups, had some mental health issues that might impede training and/or employment. Therefore, a relevant program design issue is how any training program might coordinate efforts with Kalamazoo's mental health treatment system, for example with the Action Employment Services program which provides employment services to the mentally ill population.

TRAINING COST ESTIMATES

To measure plausible training program costs, for a program sufficiently funded to achieve positive results, we used cost estimates from the WorkAdvance program. Why this program?

First, WorkAdvance seems similar to the type of training that might be run in Kalamazoo core neighborhoods. The training is "sectoral": aimed at particular occupational sectors that are offering good jobs, in the local area. Most of the training is relatively short-term: 2 weeks to 32 weeks, with most in the range from 12 weeks to 17 weeks.[14] The programs all included extensive screening of participants, and extensive pre-employment and post-employment services to help trainees both complete the program and retain their post-program jobs. The programs also all included extensive "job development" services, which included outreach to employers to find job openings and match trainees to those openings.

[14] Hendra, Richard, David H. Greenberg, Gayle Hamilton, Ari Oppenheim, Alexandra Pennington, Kelsey Schaberg, and Betsy L. Tessler. "Encouraging evidence on a sector-focused advancement strategy: Two-year impacts from the WorkAdvance demonstration." New York: MDRC (2016).

Second, WorkAdvance has been rigorously evaluated and found to be effective in randomized control trials. On average, both participants and the government budget benefitted from the program—the increased taxes and reduced transfers from participants more than paid for the program's gross costs. Per participant, the program on average created total social benefits of $17,787.[15] These social benefits reflect the net earnings gains to the participant, after subtracting out added taxes and lower transfer benefits, plus the net gain to the government budget.

Third, WorkAdvance's four sites included a range of different occupational targets, as well as different geographic areas. The geographies include Brooklyn, the Bronx, Tulsa Oklahoma, and Northeast Ohio. The occupation targets included information technology, environmental remediation, transportation, manufacturing, and health care (Schaberg and Greenberg 2020).

Table 10 summarizes program costs per trainee, broken down by program component. This is averaged across all the WorkAdvance programs and updated to November 2021 dollars[16].

Table 10 Average costs per trainee (Nov 2021 dollars) over 4 WorkAdvance programs

Management	$	767
Recruitment	$	602
Job development and employer engagement	$	633
Screening	$	648
Preemployment services and support	$	1,341
Occupational skills training	$	2,251
Postemployment retention and advancement	$	677
Total	$	6,920

As this table shows, although occupational training by itself is a significant cost, it is less than one-third of total costs. These successful training programs also devote significant resources to other major program components: recruitment, job development, participant screening, and pre- and post-employment services.

Based on understanding why these programs succeed, it seems likely that program success does depend upon having this broad range of program components. In addition, these program components must be wrapped around a program that successfully places trainees in higher wage jobs. The most successful programs are those that target higher-wage sectors (Katz et al., 2021).

In general, the case management services, such as the pre-employment and post-employment services, appear to be adequately funded in the WorkAdvance cost figures presented in Table 10. From our conversations with the local Employer Resource Network program, which provides success coaches for post-employment services, such services can have one success coach, who

[15] This takes a simple average of the projected social benefit figures in Table ES.4 (page ES-8) of Greenberg and Schaberg (2020), updated from 2018 to November 2021 prices. See Greenberg, David H., and Kelsey Schaberg. "Long-Term Effects of a Sectorial Advancement Strategy: Costs, Benefits, and Impacts from the WorkAdvance Demonstration." MDRC Report (2020).

[16] This takes a simple average of the gross costs per participant at the four sites, and updates prices from the April 2012–March 2013 period to November 2021 prices (Table 4.2, pp. 105–106, Hendra et al., 2016).

might have gross pay with benefits of $55,000, with a caseload of 100 assisted workers.[17] The per-worker cost would be $550, which is less than the post-employment cost in Table 10, or the pre-employment cost per trainee.

Two potential add-on services to what is provided in WorkAdvance would be help with childcare or transportation. These WorkAdvance programs helped trainees devise plans for adequate childcare and transportation, but rarely provided actual financial assistance for these support services.

For childcare services, many trainees will be eligible for state subsidies. Furthermore, if they apply in a timely way for childcare, before they are earning a good wage, they will be grandfathered in for subsidy eligibility for a year.

Based on conversations with local childcare experts,[18] some common childcare needs might include paying a one-week deposit to a childcare center, and paying for childcare until the state subsidies are approved. In addition, the state of Michigan does not subsidize childcare when a child is sick, even though childcare centers require payment for all scheduled days, even if the child is sick.

One model for dealing with these childcare problems is to provide childcare scholarships. For example, Oakland County is selectively providing childcare scholarships of up to $1,200.

As discussed above, perhaps at most 14 percent of the training population would need childcare for their own children under 5.[19] In practice, some of these persons may prefer or find other childcare sources, and not need scholarships. But some trainees with children older than 5 may need childcare scholarships. If we assume that these two effects roughly offset, then there will be need for assistance to about 14 percent of all trainees. If that assistance roughly cost $1,200 per trainee assisted, the cost averaged over all trainees would be $1,200 times 14 percent or $168.

How about transportation? As shown in Table 5, at least 74 percent of potential trainees have at least one car in their household.[20] But some of those cars may need emergency repairs. Employer Resource Networks (ERNs) can help former trainees after one year of employment get $1,000 loans from local credit unions for emergency car repairs. But what about newer workers?

In the ERN model, roughly 3 percent of assisted workers need emergency car repair services per year. If these car repairs have an average cost of $1,000, then the average cost per trainee is 3 percent times 74 percent times $1,000, or $22 per trainee.

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[17] Conversation with Kelli Adams, Manager of Michigan ERN for Michigan Works Southwest, part of the Upjohn Institute.

[18] Our discussion of likely childcare needs is based in part on conversations with Kathy Szenda Wilson and Maria Ortiz Borden of Pulse, which advocates for early childhood needs in Battle Creek, and is now under the aegis of the Upjohn Institute.

[19] This comes from comparing the 170 needing childcare out of the smaller 1,254 training population. The percent would be smaller if we consider the larger potential training population of 2,098.

[20] Based on finding that in the smaller 1,254 training population, 25.2 percent have at least one vehicle in the household.

But what about persons without cars? Some do not need transport assistance, if their jobs are within walking distance. Others need help with a bus pass, renewing a driver's license, or prior traffic tickets. Others may need some sort of access to a vehicle.

For those who need access to a vehicle, one option is to consider whether the training program could help subsidize a ride share model, such as the Commute with Enterprise program run by Enterprise Car Rental. Such ridesharing programs may have costs as low as $55 per month per person, or $660 per year. Even if every one of the 26 percent who might be without cars needed such extensive assistance, the cost averaged over all trainees would be $172 per trainee.

Overall, it seems that at a cost of $200 per trainee, a training program could provide significant transportation assistance—help with bus passes, car repairs, and subsidies for commuter vans.

Together, we might add $180 in childcare help, and $200 in transportation help. This increases the program costs from $6,920 to $7,300 per trainee.

THE BOTTOM LINE

What does this add up to, in terms of total training costs? If we assume 1,254 trainees—a number equal to all trainees ages 18–44 below twice the poverty line who have at least a GED or high school diploma and are not working full-time full-year—and a per trainee cost of $7,300, the total cost of a comprehensive training program, with over two-thirds of the costs for various wraparound services, would be 1,254 times $7,300 = $9,154,200.

If we assume the larger training population, with 2,098 trainees—all those ages 18–54 below three times the poverty line with at least a GED or high school diploma and not working full-time full-year—the total training program costs would be 2,098 times $7,300, or $15,315,400.

In practice, it seems likely that plausible program size would be closer to the lower trainee number than the higher trainee number. As outlined above, the potential trainees face many challenges. A sectoral training program that seeks to serve both trainee and employer needs may need to refer some of those facing more severe challenges to other specialized training programs.

Of course, it would not make sense to train all the potential training population in one year. Training programs should gear up as they start, from a smaller scale to a full scale. Programs should be run on a sustainable basis. If we imagined this training program was seeking to serve 1,254 persons over 5 years—an average of around 250 trainees per year—then average annual costs would be $9,116,580 divided by 5, or $1,823,316 per year.

Furthermore, such a program might well be run at this scale over the long-term. The neighborhoods will have considerable turnover in residents over five years, and new potential trainees will move into the neighborhood. And of course, there are potential trainees from other Kalamazoo neighborhoods. So even if the program is wildly successful—or perhaps especially if the program is wildly successful—one can imagine that it could continue to serve 300 or so trainees per year over the long term without exhausting the pool of potential trainees.