Job Accessibility in Southwest Baltimore

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Executive Summary

What is job accessibility?

Job accessibility is a question of how many jobs are available in a given area, and whether or not area residents are physically able to get to them via car, transit, or other modes of transportation. In addition, it is a question of whether these jobs are a "good fit" for the residents who have access to them—whether or not these jobs offer wages that are competitive and whether or not these jobs require skills and experience consistent with employees' training and education.

This study develops a preliminary understanding of the employment challenges and opportunities facing Southwest Partnership (SWP) residents by mapping selected Longitudinal Employer Household Dynamics (LEHD) and American Community Survey (ACS) data related to employment and commuting. It finds that SWP residents live close to a substantial number of jobs at all wage and skill levels, with average commutes that are consistent with City-wide averages. Nevertheless there is room for improvement. In particular, SWP residents would benefit from programs that match local residents with nearby opportunities and improved multimodal transportation access.

It concludes that the SWP should continue to highlight its potential as a central, relatively wellconnected area where improvements in infrastructure and educational attainment levels can have a big impact. Targeted improvements in these areas could both enhance the quality of life for existing residents and attract new residents to the community.

Job Prospects in Southwest Baltimore

What is the SWP area's employment profile?

When the Southwest Partnership completed its vision plan earlier this year, it noted that the area contained 5,700 workers, employed heavily in the following sectors: healthcare and social assistance (25.8 percent), retail (19 percent), manufacturing (8 percent), accommodation/food services (7.5 percent), and educational services (7.3 percent). While the seven neighborhoods that comprise the SWP area are primarily residential, roughly 620 businesses are located there. The top three local industries overlap with the common job profiles of SWP residents: retail (16.8 percent), accommodations/food (12.7 percent), and healthcare and social assistance (11.6 percent). The other most common industries are construction (6.3 percent) and real estate and leasing (5.8 percent).

The large share of workers and available jobs in the healthcare and social assistance category owes to the presence of facilities on the neighborhood's eastern and western edges, at the UMD Medical Center, Baltimore VA Medical Center, and Bon Secours Community Works, as well as the smaller drug treatment and other services scattered across Southwest Baltimore. Most of the other sizable employers that fall within the SWP area are schools; small storefronts and restaurants on street corners, along West Baltimore Street, and near Hollins Market; manufacturers and construction companies in southwestern Pigtown; and retail franchises and offices at Mount Clare Junction.

Where else can SWP residents work?

Due to their proximity to the University of Maryland Baltimore, Baltimore's Downtown, and BWI airport, Southwest Baltimore's seven neighborhoods are well-situated with respect to existing job centers. In addition to the traditional sectors listed above, the Southwest Partnership has identified new economy industries as an employment priority for this area. The field of bio-research innovation and care is one such target since the UMD BioPark is located in the eastern part of Hollins Market. The SWP vision also notes an intent to capitalize on surrounding developments such as the Horseshoe Casino and the Montgomery Park adaptive reuse office complex.

Are jobs accessible in Southwest Baltimore?

Broadly, the SWP views workforce development as a critical component of its larger commercial revitalization strategy. Education requirements often represent a significant barrier to job accessibility.

According to the Baltimore Metropolitan Council's 2015 workforce development plan, hiring and job growth trends in the metro area suggest a prevalence of either low-skill and low-paying positions, or high-skill jobs with ample advancement opportunities. Greater Baltimore is a top contributor of talent for fields such as IT, biosciences, healthcare, financial services, insurance, high-tech manufacturers, and other high-skill sectors that require advanced training at the college level and above. Jobs requiring a high school diploma or less still exist, but few provide a livable salary. A lack of mid-skilled jobs means that persistent wage gaps or the threat of unemployment may impact Southwest Baltimore residents who lack educational capital.

Other factors that affect accessibility include an individual's physical mobility—the quality, quantity, and cost of their transportation options, substitutes for mobility, and land use patterns (Victoria Transportation Policy Institute). Commercial activity and job centers in the Baltimore area have spread much more rapidly in the counties that surround Baltimore City, where transit is far less accessible. Thus, SWP residents with and without cars face the prospect of prohibitively long commutes. Those without cars are confronted by additional accessibility challenges, as their search for well-paying jobs that match their skill and experience levels must also align with the available and affordable transit options. Governor Hogan's recent decision to cancel funding for the Red Line light rail line, slated to run through the SWP area, complicates efforts to improve job accessibility. It also highlights the importance of understanding what job accessibility challenges residents face and identifying appropriate strategies to address this issue.

Research Questions

Overview

With the earlier definition of accessibility in mind, this study focuses on the following research questions:

- Where are the jobs, and what types of jobs are they?
- What kinds of jobs do SWP residents currently hold?
- What transportation options are available to SWP workers?
- What job opportunities are available to households without vehicles?

Where are the jobs, and what types of jobs are they?

The first phase of this study had an exclusive emphasis on the presence and proximity of available jobs in and near the Southwest Partnership area. The goal was to identify job centers across the seven

neighborhoods and adjacent communities, and to understand the composition of industries, the range of available salaries, and the skill and experience levels required of job holders and candidates. Mapping workplace characteristics can provide a detailed visual analysis of accessibility; for example, which are SWP's asset industries? What industries are not represented in nearby employment opportunities? Where are SWP workers being paid handsomely, or not? Where are there concentrations of jobs for high school graduates, holders of associate's degrees, and/or holders of bachelor's degrees? Where might there be employment gaps for younger and less experienced workers, or for older and more experienced workers?

What kinds of jobs do SWP residents currently hold?

After examining workplace characteristics, this study examined the employment characteristics of SWP residents. Of particular interest was the correlation between available job opportunities in and near Southwest Baltimore and the types of work that those who live in the SWP area report doing. The emergence of any noticeable patterns across common industries, wage groups, and education levels might illuminate some policy and service implications. Examples of the issues this study's maps address are: Do citizens of Southwest Baltimore neighborhoods tend to work in industries with high median yearly earnings or low median yearly earnings? How evenly are earners of various wage levels distributed across the geography of Southwest Baltimore? Are low, middle, or high earners concentrated in specific neighborhoods? Do any neighborhoods have a disproportionate share of well-compensated or low-paid workers? Which parts of the SWP have higher percentages of workers holding jobs with advanced educational requirements? Where are the more populous pockets of workers who work in lower-skilled positions?

What transportation options are available to SWP workers?

The physical element of job accessibility is most directly tied to job seekers' ability to travel to their place of work. For that reason, this study examined the transportation infrastructure in Southwest Baltimore and the commutes of SWP residents. The provided descriptive maps of the area's transportation infrastructure, as well as maps that attempt to identify trends surrounding vehicle ownership, journey-towork mode, travel times to work, and the corresponding relationships these datasets have with the type of jobs such commuters hold. These visualizations should help the SWP answer questions such as: Which neighborhoods rely more heavily on public transit or other alternative forms of transportation, rather than driving, to get to work? Where in the SWP do workers with the longest commutes live? What industries, wage levels, or education levels overlap most frequently with long commutes, either by car or by transit?

What job opportunities are available to households without vehicles?

The Southwest Partnership area is characterized by relatively low vehicle ownership rates, relatively high rates of transit ridership, and relatively low median household incomes vis-a-vis the rest of the City of Baltimore. Given the high cost of vehicle ownership (\$8,986/year, according to 2015 American Automobile Association estimates) and infrequent/unreliable transit service, car-less households face additional challenges related to job access. This study includes a series of maps showing the portion of the City that falls within a reasonable walking/biking distance of the SWP area, as well as the number of jobs at various wage and education levels that fall within this zone. These visualizations provide context for discussions of improving the area's walkability and bikeability, as well as for workforce development and education programs.

Variables and Analysis

Longitudinal Employer-Household Dynamics (LEHD) data, LODES v.7.1

LEHD data is available at the Census Block level and provides fairly detailed information about the number, type, and nature of jobs. Block-level data is especially useful because of its geographic accuracy relative to data available only at the physically larger block group or census tract levels. However, to better link the LEHD data to other variables examined, some of the figures were summarized to the block group level. The most recent available version of the LEHD dataset was from 2013, and it includes raw numerical Workplace Area Characteristics (WAC), totaled by work Census Block, and Residence Area Characteristics (RAC), totaled by home Census Block. Both the WAC and RAC datasets include over forty variables that count total jobs and number of jobs for different age ranges, earnings intervals, North American Industry Classification System (NAICS) categories, races, ethnicities, educational attainment levels, and sexes. This study used the total figure as well as:

• the number of jobs for three different age ranges (29 or younger, 30 to 54, and 55 or older)

- the number of jobs for three different earnings intervals (\$1250/month or less, \$1251/month to \$3333/month, and greater than \$3333/month)
- the number of jobs for three of the four available educational attainment levels (High school or equivalent, Some college or Associate degree, and Bachelor's or advanced degree).

Several of the NAICS categories were taken into consideration, first grouped into professional, service, and labor sectors, and later into the five highest-paying and five lowest-paying industries, as determined by the American Community Survey's 2009-2013 estimated median earnings in the past 12 months.

American Community Survey (ACS) Data 2009-2013

ACS data is available through the U.S. Census, which is constantly collecting and updating its findings. The ACS provides information about a broad variety of subjects including demographic, housing, social, and economic data. This study took advantage of the block group level data from Commuting to Work/Journey to Work, Income and Earnings, Industry and Occupation, Educational Attainment, and Vehicles Available data sets. The ACS offers data in one-year, three-year, and five-year estimates at a variety of levels from individual blocks to the entire country. For the best blend of accuracy and precision, this study uses the 2013 five-year estimates at the block group level. The SWP covers 24 block groups, however, many of the block group boundaries extend outside the SWP. Therefore, studies and maps using data at this level need to be analyzed proportionately so they do not mislead by indicating a greater numbers of applicable data entries than would actually exist within the portion of the block group that falls in the SWP boundary.

Bike and Pedestrian Data

Bike and pedestrian buffers were generated based on straight-line distances from SWP census block centroids. They do not take into account important variables like actual street networks, sidewalk condition and connectivity, available pedestrian crossings, or dedicated bicycle infrastructure. As such, they should be interpreted as an indication of the area's potential rather than its current realities. Buffers were calculated for ¼-mile, ½-mile, and three-mile radii based on conventional wisdom regarding "comfortable" commute distances for each of these modes. LEHD WAC data was joined to each buffer and the total number of jobs that fell within the area was calculated.

Interpretation of Results

Number and Location of Jobs

LEHD WAC data was mapped using different symbologies to represent the differences in available jobs and the differences in jobs held by SWP residents. Dot density displays the diversity of job types in and around the SWP neighborhoods.



The densest clusters of dots matched the known job centers at the educational, healthcare, retail, manufacturing, and other facilities described above. Notably, there tends to be a higher concentration of jobs in areas immediately adjacent to Southwest Baltimore than within it. Downtown Baltimore, east of the SWP area, expectedly showed a varied array of job types across nearly all of the mapped industries. Likewise, the downtown area also showed a heavy concentration of jobs for the full range of education and wage levels, though mid- and high-skill and mid- and high-wage jobs tended to have denser dot formations than the lowest-skill and lowest-wage jobs.



The area south of Pigtown also tended to have heavy clusters of job opportunities across these same variables. Unsurprisingly, the Southwest Partnership area's mostly residential makeup results in workplace densities tapering off at the neighborhood boundaries. Those jobs that are visible within Southwest Baltimore are nearest to West Baltimore Street and West Pratt Street, South Carey Street, and Washington Boulevard.

Jobs Residents Hold

On the other hand, dot density maps of LEHD RAC data present crowded clusters of workers in Southwest Baltimore, as one would expect for housing-heavy neighborhoods like those that compose the partnership. Maps created for the study divided NAICS industries into two groups representing the five highest and five lowest median earnings.



The higher-earning industry group includes financial, managerial, and government roles, work with utility companies, and 'Professional, Scientific, and Technical Services,' such as accounting, law, design, engineering, consulting, advertising, and computing. Of these industries, the most common for SWP residents are Public Administration (519 workers), Professional, Scientific, and Technical Services (408 workers), and Finance and Insurance (185 workers). Very few SWP residents work in the fields of Management (58) or Utilities (11).

The lower-earning industry group includes retail, leisure, hospitality, administrative and sanitation roles, and Other Services like repair, maintenance, laundry, and religious and civic organizations. SWP residents are relatively frequently employed in all five of these industries, and especially in Retail (772 workers), Administrative, Support, and Waste Management Services (641 workers), and Accommodation and Food Services (632 workers). Another 216 people work in Other Services, while just 91 work in Arts and Entertainment. Side-by-side analysis of the high-earning and low-earning industry maps suggests that jobs in the industries with lower median salaries are more common for SWP residents.

Other common job fields for SWP residents do not fall on the higher or lower ends of median earnings spectrum. They are Health Care and Social Assistance (1,235 workers), Educational Services (618 workers), Manufacturing (264 workers), Construction (228 workers), and Real Estate and Leasing (117 workers). Block groups in Pigtown have the largest share of workers in nearly every NAICS category examined. One of these block groups includes parts of eastern Pigtown and almost all of Barre Circle; this area tends to have high numbers of financial, insurance, real estate, administrative, sanitation, education, health, and arts/recreation workers. One notable exception to this observation is in the field of Public Administration: the central parts of Franklin Square (58 workers) and Poppleton (57 workers) have large groups of government employees.

Industry-level data cannot explain wages empirically. However, another series of maps displaying workers by wages alone did not reveal as distinct of trends within the SWP.



Overall, earners in the middle group (\$1251/month to \$3333/month) appear to be the most wellrepresented group across all seven neighborhoods, and especially so in Franklin Square, Poppleton, Union Square, and Mount Clare. Generally, block groups in Union Square, eastern Franklin Square, and western Poppleton have fewer workers at all wage levels than the denser clusters of workers in the other neighborhoods. These block groups are likely home to many unemployed persons, retirees, or other individuals who are not in the labor force.

The block group that includes eastern Pigtown and the southern two-thirds of Barre Circle has the largest total number of workers earning a high wage (242). The neighborhoods showing the fewest high earners

are on the western and northern edges of Southwest Baltimore, but this may be a slightly skewed observation since the block groups are severed by the SWP boundary, meaning some workers are excluded if they reside in the same block group but not in Franklin Square, Union Square, or Mount Clare proper. In a somewhat surprising result, the block group with the fewest high-earning workers that falls entirely within the SWP area is the eastern half of Union Square, with a mere 41. Again, this may be attributable to an older population that is past working age.

The block group that includes northern and western Pigtown has the largest share of middle-earning workers, with 278, followed closely by southwestern Pigtown at 275. In this wage group, it is the western side of Union Square that shows the fewest middle-earning workers, with just 60 people. Once more, there are some block groups that have smaller figures, but the data is missing workers who reside outside of the SWP area.

With 206 workers earning less than \$1,251 per month, central Poppleton is the block group with the most low-wage employees within the limits of the SWP area. Owing to its large overall working-age population, the block group representing eastern Pigtown and southern Barre Circle has the second largest share, with 186. Western Union Square has the smallest figure for low-earners, at 60.

The above findings on wage discrepancies are partly corroborated by RAC educational attainment data. Pigtown and Barre Circle, whose block groups include the highest raw number of workers as well as large numbers of high- and middle-wage earners, are also home to the most high-skill workers in Southwest Baltimore. Both neighborhoods show greater than 25 percent of their working population in jobs that require bachelor's or higher degrees. Interestingly, over a quarter of Hollins Market's workers also hold positions that require at least a bachelor's degree, but this neighborhood has fewer overall college-educated workers than the shared block groups of Pigtown and Barre Circle. Nonetheless, it follows that Hollins Market's proximity to the BioPark, to other parts of UMD's Baltimore campus, and to downtown, makes it a convenient location for well-educated citizens to live. Southwestern Mount Clare also has a surprisingly high share of resident workers who are graduates of four-year programs. The fact that this area is not home to as many high earners suggests that it might be a good target for job accessibility strategies.

Workers in mid- and low-skill positions are somewhat evenly spread throughout the rest of Southwest Baltimore's residences, with between 20 and 40 percent of workers in all neighborhoods taking jobs that require either some college or an associate's degree, and another 20 to 40 percent in jobs requiring only a high school diploma. In the mid-skill group, Pigtown again has the highest concentration, including over a third of the workers living in the northern, western, and southernmost block groups. Employees of low-skill positions, requiring only a high school diploma or equivalent, are more well-represented in Poppleton and



Source: LEHD RAC, 2013

southwestern Mount Clare-each neighborhood has roughly a third of its residents engaged in such work.





Source: LEHD RAC, 2013

The Transportation Landscape

A map of the area's road and transit networks shows that SWP residents benefit from a relatively good transportation network, at least in terms of basic infrastructure. The area consists of a dense and walkable local street grid, surrounded by major north-south and east-west arteries—I-395, I-85, I-83, US- 1, and US-40. All SWP residents are within ¼ mile of an MTA Transit stop, and the Charm City Circulator's Orange Route provides a critical east-west connection to the Downtown area and light rail/Metro service.



At the same time, these maps illustrate several of the area's transportation shortcomings.

The southern portion of the SWP area is characterized by numerous gaps in the street network,

impassable areas, and limited north-south travel options. MTA bus service is also infrequent and unreliable, a factor that must be factored in to develop a more accurate evaluation of transit coverage.

Commuting to Work: Travel Modes

The map at right shows the rate of vehicle ownership by block group. Red indicates that relative to other blocks in the SWP, residents within that block group own fewer vehicles per household. Overall, vehicle ownership in the SWP area is lower



than the national average, though it is consistent with low car ownership throughout Baltimore. In general, to the north and east, residents of Poppleton, Franklin Square, and Mount Clare own fewer cars, and to the south and west in Pigtown and Barre Circle, residents own comparatively more cars.

This map uses dot density to illustrate the numbers of people who commute to work via alternate modes of transportation. Most common alternate options include bus, railroad, bicycling, cab, walking, and working at home. In general, this map indicates that residents of the northern neighborhoods of Franklin Square and Poppleton frequently take the bus to work. The majority of the bus lines that run through the SWP run through these neighborhoods, and there are fewer bus



lines that run directly through the southwestern neighborhoods. Conversely, there is a high share of residents who walk to work in the Hollins Market neighborhood (where there is also a larger concentration of jobs). Lastly, residents in Pigtown use a wide variety of transportation modes; compared to other neighborhoods, however, there are far more residents who work at home and bike to work.

The map to the right illustrates that most of the residents who commute from the SWP in a personal vehicle do so alone. However, there are a fair share of residents in Mont Clare and Franklin Square who carpool.



Commuting to Work: Travel Time

Travel time to work refers to the total number of minutes that it usually takes a worker to get from home to work during the reference week. It includes time spent waiting for public transportation, picking up passengers in carpools, and time spent in other activities related to getting to work. ACS travel time data was used to design the map series on this and the following pages, which includes travel times less than 10, 20, 30, 40, 60, and 90 minutes, as well as 90 minutes or more. The data is presented at the block group level. Considering a commute of less



Travel Time: Less than 10 Minutes

than 10 minutes, a greater concentration of short work commutes is seen in and around the Hollins Market area. Generally, not many people in the SWP have a commute time less than 10 minutes.

On average, the travel time of SWP residents falls in between 20 and 40 minutes, signifying that most jobs are outside of the SWP area. This average travel time is mostly characterized in Pigtown, the south of Hollins Market, the east side of Union Square, eastern Mount Clare, and eastern Franklin Square. These are also the areas with greater levels of vehicle ownership, so it is likely that most of the residents who have a travel time of more than 20 minutes commute by self-owned vehicles. The same is inferred for the residents who are traveling up to 90 minutes or more.

With the diverse job opportunities available in and around SWP in terms of industries, wage, education, and skill levels, a commute time up to 90 minutes or more might not really be a necessity if the residents were more aware of these jobs and also if the jobs had better accessibility in terms of public transit. Travel Time: Less than 20 Minutes



Travel Time: Less than 30 Minutes



Travel Time: Less than 40 Minutes





Travel Time: Less than 90 Minutes

Travel Time

0-13

38 - 61

14 - 35



Travel Time: More than 90 Minutes





Average Commute Time

This map synthesizes the travel time data, displaying an average commute time per block group. Residents in the south and west neighborhoods of Pigtown, Hollins Market, and Barre Circle have commutes that average 25 or more minutes. Residents of the other four neighborhoods generally average less than 24 minutes. This data includes all types of transportation.



Walkability and Bikeability

SWP residents are within walking and biking distance of a significant number of jobs. The following maps illustrate the approximate area that falls within walking (¼ mile to ½ mile) or biking (up to 3 miles) distance of the SWP area and the total number of jobs contained within these areas.

These maps show that several of the City's most job-rich areas—Downtown, the Inner Harbor, and Fells Point—all are within potential walking or biking range.



The next series of maps breaks down the number of bike and pedestrian accessible jobs by required educational level. They display limited variation, suggesting that, in general, jobs are available at all levels.



The next series of maps shows the breakdown of bike/pedestrian accessible jobs by wage level. These maps also display limited variation. However, there does appear to be a slightly higher concentration of well-paying jobs just outside the ½ mile walking radius.



The table on the next page summarizes the number and relative percentage of jobs that are theoretically within walking or biking distance of the SWP area. It confirms the presence of a substantial number of jobs at all wages and all skill levels within walking and biking distance of the SWP area. The relative percentage of high-paying jobs is particularly striking: 60 percent of available jobs within ¼ mile have wages of \$3,333 or more/month. This suggests that current SWP residents can benefit from education and skills training that makes them competitive for these jobs. It also suggests that those who currently commute to those jobs from elsewhere could be enticed to move to the SWP area if the bicycle and pedestrian environment were substantially improved. This, in turn, might help generate additional economic development in the SWP area.

| | Distance | | | | | | |
|---------------------------|----------------------------|-------|----------------------------|-------|-----------------------------|-------|--|
| Type of Job | Within ¼ mile (walk) | % | Within ½ mile (walk) | % | Within 3 miles (bike) | % | |
| Total Jobs | 30,137 | | 46,792 | | 228,854 | | |
| | | | | | | | |
| By Wage | | | | | | | |
| Total Reported | 30,137 | | 46,792 | | 228,854 | | |
| \$1,250 or less/month | 3,266 | 10.8% | 4,966 | 10.6% | 28,532 | 12.5% | |
| \$1,250 to \$3,333/month | 8,787 | 29.2% | 15,212 | 32.5% | 74,987 | 32.8% | |
| \$3,333 or more/month | 18,084 | 60.0% | 26,614 | 56.9% | 125,335 | 54.8% | |
| By Education Level | | | | | | | |
| Total Reported | 24,663 | | 38,561 | | 183,946 | | |
| High School or Less | 7,199 | 29.2% | 11,952 | 31.0% | 61,390 | 33.4% | |
| Some College (Associates) | 7,470 | 30.3% | 12,071 | 31.3% | 57,527 | 31.3% | |
| Bachelors or Higher | 9,994 | 40.5% | 14,538 | 37.7% | 65,029 | 35.4% | |

Conclusions and Findings

This analysis of available jobs and transportation options suggests that SWP residents live close to a substantial number of jobs at all wage and skill levels, with average commutes that are consistent with City-wide averages. Nevertheless, there is room for improvement. In particular, SWP residents would benefit from programs that match local residents with nearby opportunities and improve multimodal transportation options.

Despite concentrations of high-paying jobs in the nearby Downtown area, more SWP residents work in low paying industries than in high paying industries. This suggests that SWP residents lack the educational background, technical skills, or connections to compete for these jobs. Providing interested residents with educational resources, targeted-job training, or networking opportunities may help close this gap. The limited number of jobs available in the SWP area means residents have to 'outsource' themselves and compete for jobs in other areas of Baltimore; this also generates incentives for improving workforce capacity.

The SWP area is characterized by relatively low rates of vehicle ownership and relatively high rates of transit use. This indicates many residents' job options are constrained to at least some degree by their access to transportation. Improving the reliability and frequency of transit service in the area could have an immediate impact on people's ability to reach jobs. Further, those who currently commute solo by car may be encouraged to use other modes.

Low vehicle ownership and high transit usage is a constraint, but it also hints at a potential opportunity. While the current ratio of transit/vehicle usage is likely the result of limited incomes and the high cost of automobile ownership, a growing number of people are interested in living in walkable, transit-oriented environments. SWP residents who work in Washington, DC or the Baltimore suburbs will likely continue to have long, automobile-oriented commutes. However, those working closer to home may be encouraged to use alternate means. Further, lower-income households will be able to forgo automobile ownership with minimal damage to their job prospects.

In sum, it is recommended that the SWP continue to highlight its potential as a central, relatively wellconnected area where improvements in infrastructure and educational attainment levels can have a big impact. From the perspective of existing residents, better sidewalks, safer streets, and more frequent and reliable transit service would make accessing available jobs in the downtown area easier and more pleasant. These same improvements could also help lure those some of those commuting from elsewhere to downtown jobs to consider moving to the SWP. Interest in living in walkable and bikeable areas continues to grow, and the SWP area is ideally situated geographically to take advantage of this trend.

Future Research

This study has identified several areas worthy of further investigation, specifically, the relationship between residents' commuting times and job profiles, and the impact of transit schedules and automobile travel time on job accessibility.

Potentially Burdensome Commutes by Job Type

Further linking LEHD RAC data to ACS travel time and travel mode data might present important findings about the types of workers in Southwest Baltimore who face the most burdensome commutes. This study made initial inferences by mapping block groups according to the percent of total households who drive or take transit over 60 minutes to work, as indicated by the ACS 2009-13 Means of Transportation to Work by Travel Time to Work data. Layered above the commute data are dot densities of the LEHD RAC industry data, again separated by highest- and lowest-paying industries by median yearly earnings. As the two datasets are separately gathered, there can be no direct relationship assumed between the commute type and length and the industry or wage of the workers to whom those commutes belong.





Eastern Pigtown and Barre Circle, southwestern Mount Clare, and eastern Union Square have the largest share of driving commuters who travel 60 or more minutes to work. Eastern Poppleton, western Union Square, eastern Mount Clare, and western Franklin Square have the largest share of transit commuters who travel 60 or more minutes to work. Implicit connections between these commute lengths and industries and wages are discussed below.

As has been previously stated, Southwest Baltimore is generally home to many workers in the relatively higher-paying NAICS industries of Public Administration and Professional, Scientific, and Technical Services. Pigtown, Barre Circle, and Mount Clare also have several Finance and Insurance employees. Many of these skilled and well-paid workers may be traveling to suburbs, Annapolis, or Washington, DC for work. Transit riders may not have easy access to job centers for the aforementioned industries.

Within lower-paying NAICS industries, the SWP area has a prevalence of retail, administrative, and food/hospitality workers. Residents of eastern Pigtown, Barre Circle, Union Square, and southwestern Mount Clare who drive to these types of jobs may work outside of Baltimore City. Raising some concern are the clusters of workers in lower-paid industries who originate in the block groups with high shares of transit commuters. It might be the case that these Southwest Baltimore residents are traveling along prohibitively distant or transfer-heavy routes for jobs that don't offer a wage that matches the time- and effort-intensity of the commute. Linking these residents to similar job opportunities that are more local could enhance their commuting experience.

Due to the ambiguous basis for the above analysis, this study recommends a more thorough empirical evaluation of commutes for workers of various industries, wage-levels, and educational attainment levels.

Network and Schedule-based Analysis of All Commute Options

Due to limits on both time and technical expertise, the question of job access via transit and automobile remains unexplored. An additional study that incorporates network analysis techniques and available data on transit schedules could explore this question. Pedestrian and bicycling distances should also be recalculated using Network Analysis to generate a more accurate picture of existing conditions and identify target areas for improvement.

Appendix

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