

DATA REPORT



Urban Technology Deserts

Identification, Analyses & Implications

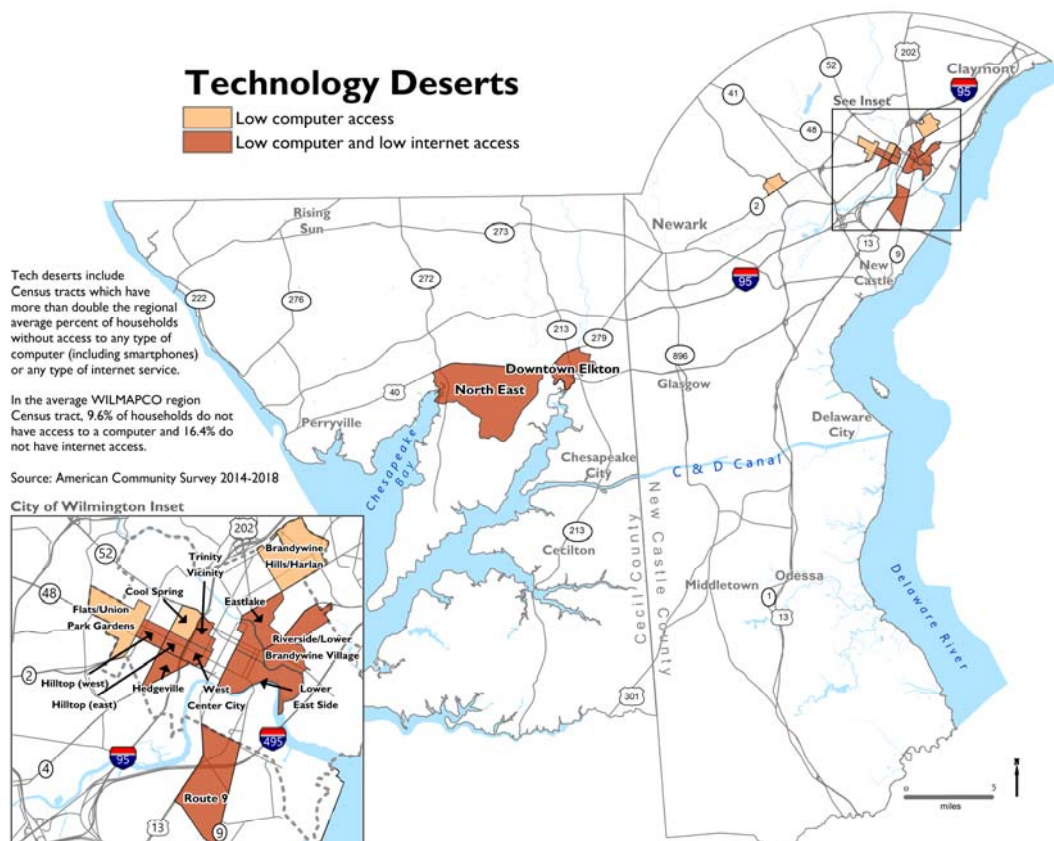
December 2020

Overview

Technology deserts are places where many households lack reliable computer and internet access. This can be due to lack of infrastructure, such as Broadband connectivity, or, in urban areas, demographic and socio-economic conditions. We find clusters of households with high poverty and/or subsidized housing contribute to what can be called “urban tech deserts” in the WILMAPCO region.

During the Coronavirus pandemic and associated lockdown of 2020, school, office work, and shopping migrated online; so too did outreach for planning studies. Online outreach became the default and often only means planners used to engage residents. While the majority of households acclimated to (and some perhaps benefited from) this shift, others with limited technological capacity struggled. If they persist, the resultant disparities in access to education, public input opportunities, and more, threaten to widen broader existing economic and racial inequities in our society.

The map below shows technology deserts in the region. These are places home to more than double the regional average of households without access to a computer (including a smartphone) and/or household Internet access.





Methodology

Technology deserts were identified by analyzing computer and Internet household access data from the 2014-2018 American Community Survey. Census tracts with double or more the regional average of households without access to a computer (including a smartphone) and/or household Internet access were flagged as tech deserts. These base household figures are:

- ♦ **Without computer >19.2%** (double the regional average)
- ♦ **Without internet >32.7%** (double the regional average)



August de Richelieu

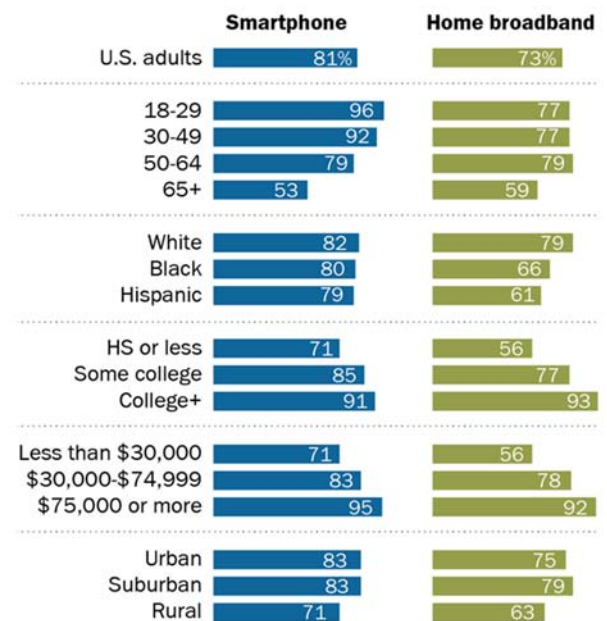
Factors which Create Urban Technology Deserts

In places with existing Broadband infrastructure, like the WILMAPCO region, tech deserts can nevertheless materialize due to underlying demographic and socio-economic conditions.

As shown in the graphic to the right, according to the Pew Center for Research, age, education, and income are among key factors related to owning a smartphone or having home Broadband among U.S. adults. Broadband access was some 20 percentage points lower for seniors (those over age 65) compared to younger adults. That disparity was greater still for those with less education and, its corollary, income. Only slightly more than half (56%) of adults making less than \$30,000 per year had home broadband, for example, compared to nearly all (92%) adults making more than \$75,000 a year, regardless of age.

Weak household economic conditions — much more so than age — create urban tech deserts in the WILMAPCO region. As we will examine later, poverty levels within our tech deserts are more than triple the regional average while the proportion of seniors is less than the regional average. An analysis we conducted in Wilmington found that only the Cool Spring tech desert was home to senior clusters, as identified in the 2019 Transportation Justice Plan. Meanwhile, every tech desert in the city, including Cool Spring, had concentrations of poverty and/or sizeable government-subsidized housing sites.

% of U.S. adults who say they have or own the following



Pew Center for Research, 2019



Overview of Technology Deserts

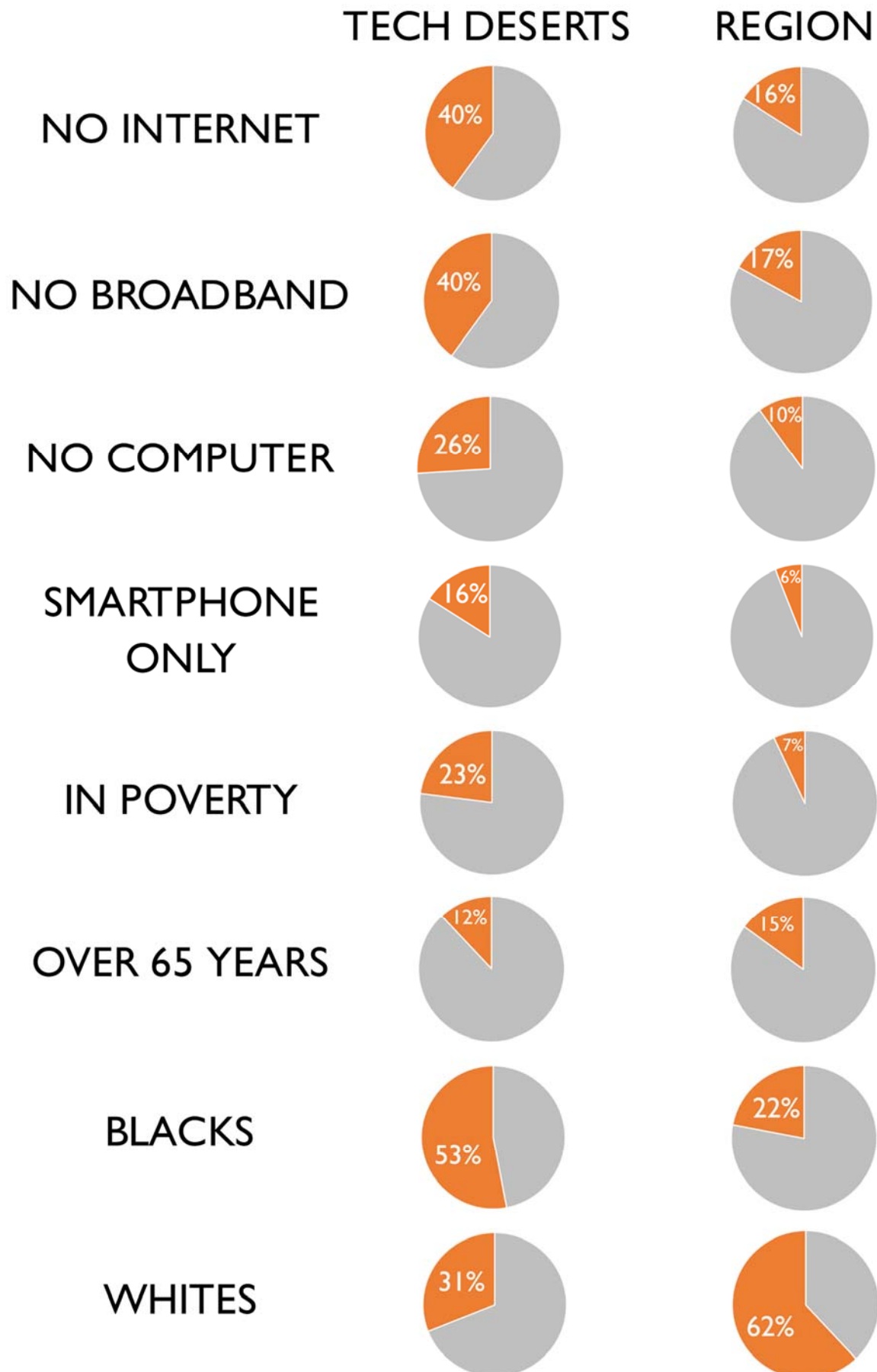
As shown in the table below, more than 53,000 residents in about 19,500 households live in a tech desert. Of those, about 4 in 10 lack Internet (nearly synonymous with Broadband) connectivity in their home and a quarter have no computer or smartphone. It is important to note that not everyone with limited Internet or computer connectivity lives within a tech desert. Tech deserts are simply places where these types households are concentrated.

The pie charts on the following page compare demographic and socio-economic conditions within tech deserts with regional averages. Gaps in Internet connectivity, computer access, and the sole reliance on smartphones for computer access are about three times greater within our tech deserts. As noted earlier, impoverished households are much more prevalent within tech deserts while seniors are not. Finally, our tech deserts are majority minority places. More than half (53%) of the population there are non-Hispanic Blacks, which is more than double their regional proportion.

Technology Deserts in the WILMAPCO Region

	New Castle County		Cecil County		Region	
Households	15,634		3,895		19,529	
Population	42,335		10,704		53,039	
Households w/no Internet	6,442	41%	1,414	36%	7,856	40%
Households w/no Broadband	6,497	42%	1,428	37%	7,925	41%
Households w/no Computer	4,261	27%	909	23%	5,170	26%
Households w/Smartphone only	2,734	17%	356	9%	3,090	16%
School-aged (5-19)	8,974	21%	1,915	18%	10,889	21%
Age 65+	4,953	12%	1,620	15%	6,573	12%
Households below Poverty	2,081	13%	574	15%	2,655	14%
Black (non-Hispanic)	26,865	63%	1,191	11%	28,056	53%
Hispanic	5,819	14%	1,041	10%	6,860	13%
Limited English Proficiency	2,167	6%	334	3%	2,501	5%
Low Literacy	1,520	5%	390	5%	1,910	5%

Source: American Community Survey, 2013-2018. "Limited English Proficiency" is the population, over the age of 5, that reports speaking English "less than very well." "Low Literacy" is the population, over the age of 25, that has not completed the ninth grade.



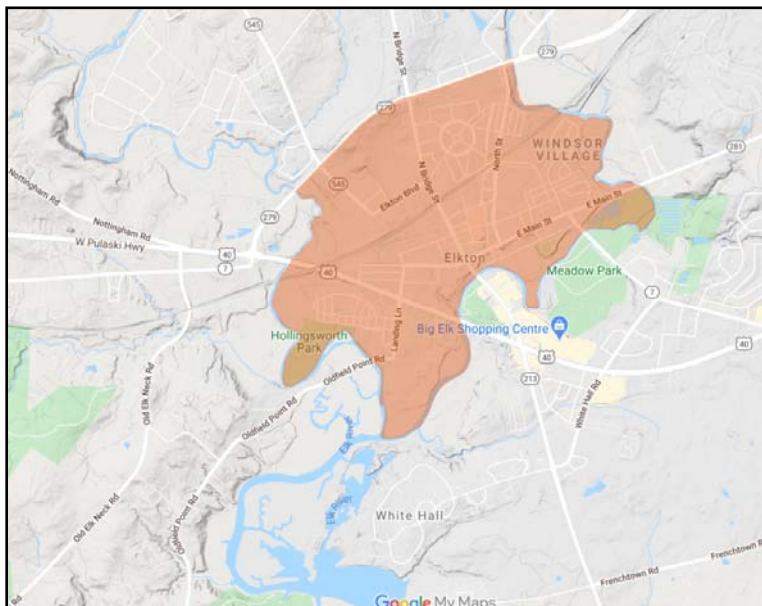


Technology Desert Profiles

This section presents a map and data profile of individual technology deserts. Tech deserts were identified based on either heavy concentrations of households without computers and/or Internet connections. Only four tech deserts—Cool Spring, Flats/Union Park Gardens, Brandywine Hills/Harlen, and Milltown—qualified solely based on limited computer prevalence. Each of the others had both limited computer prevalence and limited numbers of households with Internet connectivity. The Lower Eastside had the poorest rates in both categories. Nearly half of households there (45%) lack computer access, while 65% do not have an Internet connection at home.

As with communities across the region, tech deserts display demographic and socio-economic diversity. While seniors are not a remarkable proportion of the overall tech desert population, age is a significant factor within the tech deserts, Cool Spring and Milltown. There, more than 1 in 5 residents are over 65 years of age. The presence of senior clusters here likely contributes to both tech deserts. While poverty rates are in double-digit figures in most tech deserts (topping out at 51% in West Center City), they rest in the single digits, just slightly over the regional average, in Cool Spring and Milltown. And while Black residents can be commonly found within tech deserts (including more than 9 in 10 of residents in Eastlake and the Lower Eastside) they are not universally so. Milltown is only 1% Black and only about 1 in 10 residents of the North East and Downtown Elkton tech deserts are Black. Hispanic numbers too vary between tech deserts. Hispanics, the region's second largest minority community, comprise over half of Hilltop (east's) population. Hilltop (east) also has the highest proportion of Limited English Proficient residents (26%) and residents with Low Literacy (17%).

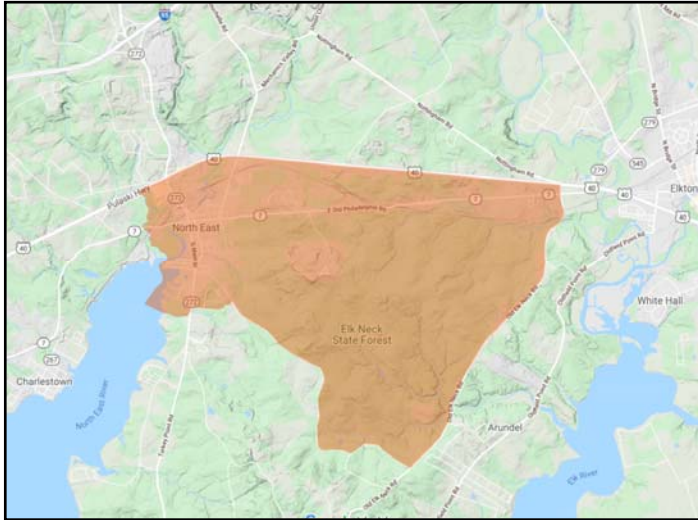
Downtown Elkton



Census Tract Tech Desert Class	304, Cecil County Low Computer & Internet Access
Households Population	1,623 5,172
Households w/no Internet	651 (40%)
Households w/no Broadband	665 (41%)
Households w/no Computer	408 (25%)
Households w/Smartphone only	186 (11%)
School-aged (5-19)	1051 (20%)
Age 65+	677 (13%)
Households below Poverty	330 (31%)
Black (non-Hispanic)	604 (12%)
Hispanic	624 (12%)
Limited English Proficiency	244 (5%)
Low Literacy	200 (5%)

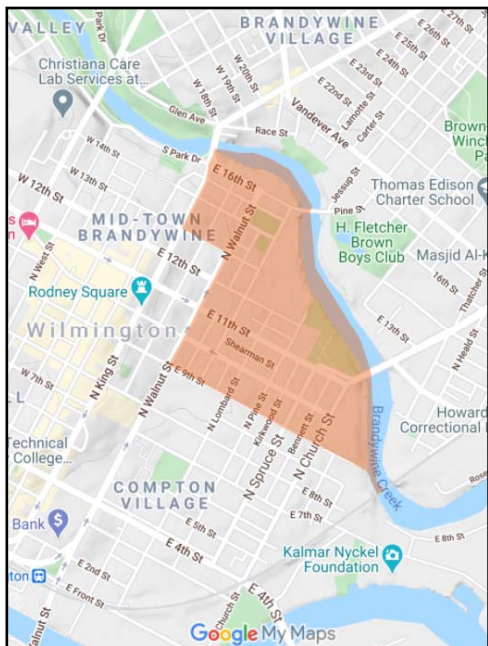


Northeast



Census Tract Tech Desert Class	390.03, Cecil County Low Computer & Internet Access
Households	2,272
Population	5,532
Households w/no Internet	763 (34%)
Households w/no Broadband	763 (34%)
Households w/no Computer	501 (22%)
Households w/Smartphone only	170 (8%)
School-aged (5-19)	864 (16%)
Age 65+	943 (17%)
Households below Poverty	244 (18%)
Black (non-Hispanic)	587 (11%)
Hispanic	417 (8%)
Limited English Proficiency	90 (2%)
Low Literacy	190 (4%)

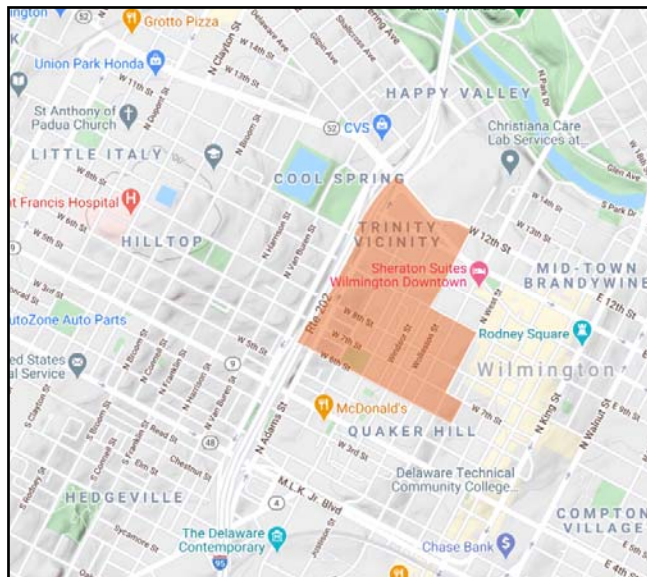
Upper Eastside



Census Tract Tech Desert Class	9, New Castle County Low Computer & Internet Access
Households	773
Population	2,186
Households w/no Internet	349 (45%)
Households w/no Broadband	349 (45%)
Households w/no Computer	166 (22%)
Households w/Smartphone only	204 (26%)
School-aged (5-19)	606 (28%)
Age 65+	149 (7%)
Households below Poverty	107 (22%)
Black (non-Hispanic)	1,921 (88%)
Hispanic	147 (7%)
Limited English Proficiency	17 (1%)
Low Literacy	24 (2%)

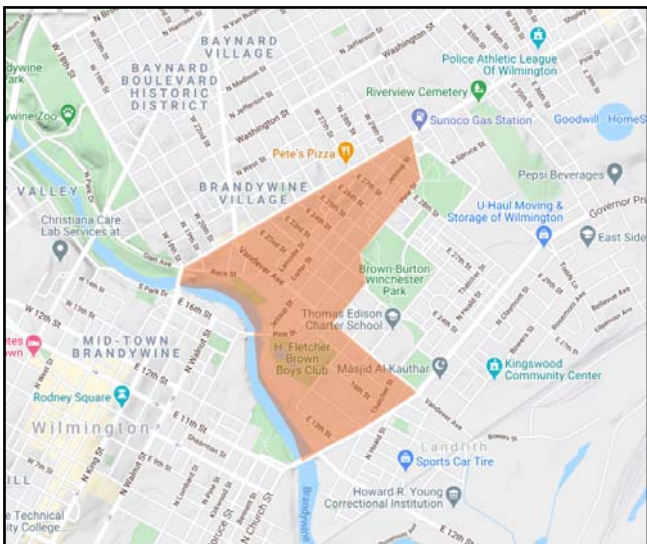


Trinity Vicinity



Census Tract Tech Desert Class	16, New Castle County Low Computer & Internet Access
Households	845
Population	2,133
Households w/no Internet	436 (52%)
Households w/no Broadband	436 (52%)
Households w/no Computer	260 (31%)
Households w/Smartphone only	202 (24%)
School-aged (5-19)	313 (15%)
Age 65+	219 (10%)
Households below Poverty	68 (19%)
Black (non-Hispanic)	1,371 (64%)
Hispanic	270 (13%)
Limited English Proficiency	108 (5%)
Low Literacy	62 (4%)

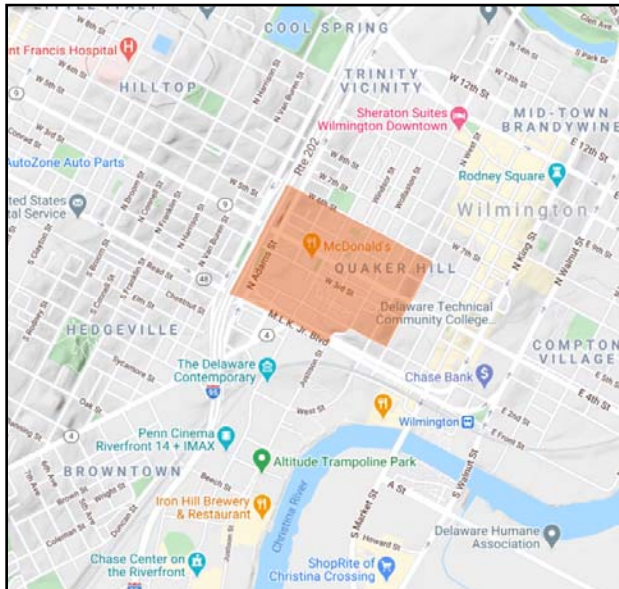
Eastlake



Census Tract Tech Desert Class	6.02, New Castle County Low Computer & Internet Access
Households	1,241
Population	2,956
Households w/no Internet	703 (57%)
Households w/no Broadband	703 (57%)
Households w/no Computer	481 (39%)
Households w/Smartphone only	279 (23%)
School-aged (5-19)	489 (17%)
Age 65+	365 (12%)
Households below Poverty	278 (43%)
Black (non-Hispanic)	2,688 (91%)
Hispanic	37 (1%)
Limited English Proficiency	24 (1%)
Low Literacy	84 (4%)

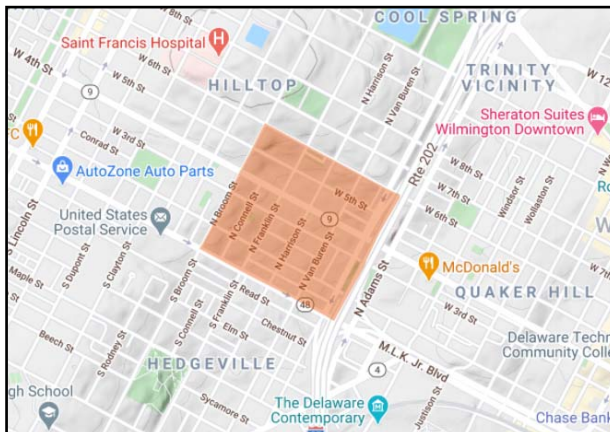


West Center City



Census Tract Tech Desert Class	21, New Castle County Low Computer & Internet Access
Households Population	748 1,930
Households w/no Internet	396 (53%)
Households w/no Broadband	396 (53%)
Households w/no Computer	256 (34%)
Households w/Smartphone only	167 (22%)
School-aged (5-19)	516 (27%)
Age 65+	231 (12%)
Households below Poverty	199 (51%)
Black (non-Hispanic)	1,504 (78%)
Hispanic	211 (11%)
Limited English Proficiency	144 (8%)
Low Literacy	69 (6%)

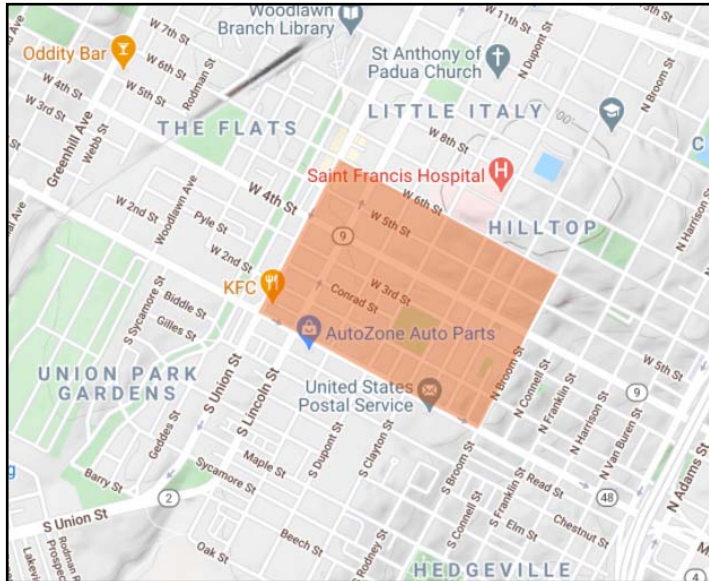
Hilltop (east)



Census Tract Tech Desert Class	22, New Castle County Low Computer & Internet Access
Households Population	854 2,753
Households w/no Internet	360 (42%)
Households w/no Broadband	360 (42%)
Households w/no Computer	231 (27%)
Households w/Smartphone only	187 (22%)
School-aged (5-19)	630 (23%)
Age 65+	214 (8%)
Households below Poverty	195 (36%)
Black (non-Hispanic)	979 (36%)
Hispanic	1,532 (56%)
Limited English Proficiency	620 (26%)
Low Literacy	304 (17%)

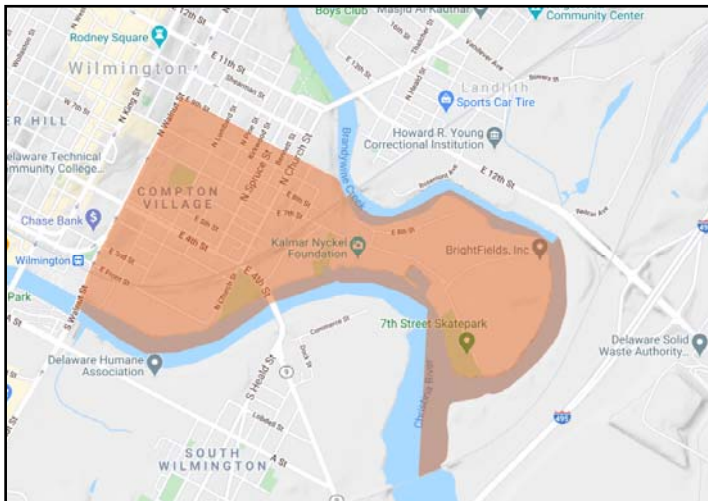


Hilltop (west)



Census Tract Tech Desert Class	23, New Castle County Low Computer & Internet Access
Households	985
Population	2,436
Households w/no Internet	339 (34%)
Households w/no Broadband	339 (34%)
Households w/no Computer	265 (27%)
Households w/Smartphone only	198 (20%)
School-aged (5-19)	518 (21%)
Age 65+	165 (7%)
Households below Poverty	94 (16%)
Black (non-Hispanic)	1,341 (55%)
Hispanic	765 (31%)
Limited English Proficiency	296 (13%)
Low Literacy	151 (9%)

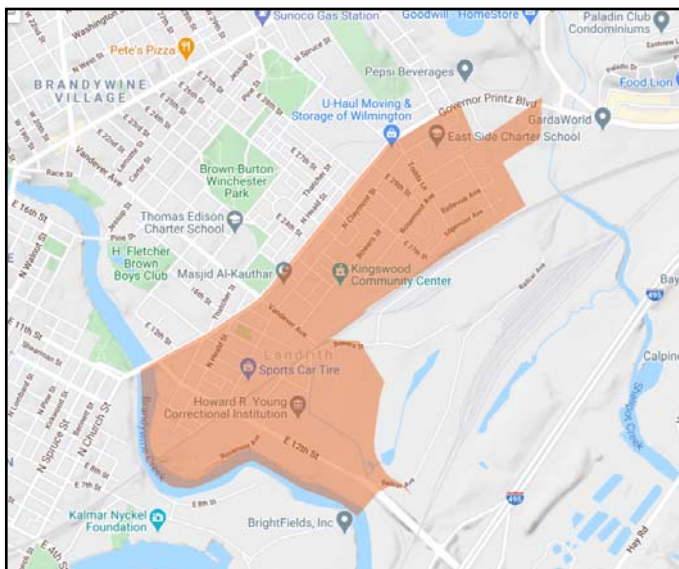
Lower Eastside



Census Tract Tech Desert Class	29, New Castle County Low Computer & Internet Access
Households	1,522
Population	3,638
Households w/no Internet	996 (65%)
Households w/no Broadband	996 (65%)
Households w/no Computer	680 (45%)
Households w/Smartphone only	302 (20%)
School-aged (5-19)	721 (20%)
Age 65+	560 (15%)
Households below Poverty	302 (46%)
Black (non-Hispanic)	3,340 (92%)
Hispanic	44 (1%)
Limited English Proficiency	16 (0%)
Low Literacy	90 (3%)

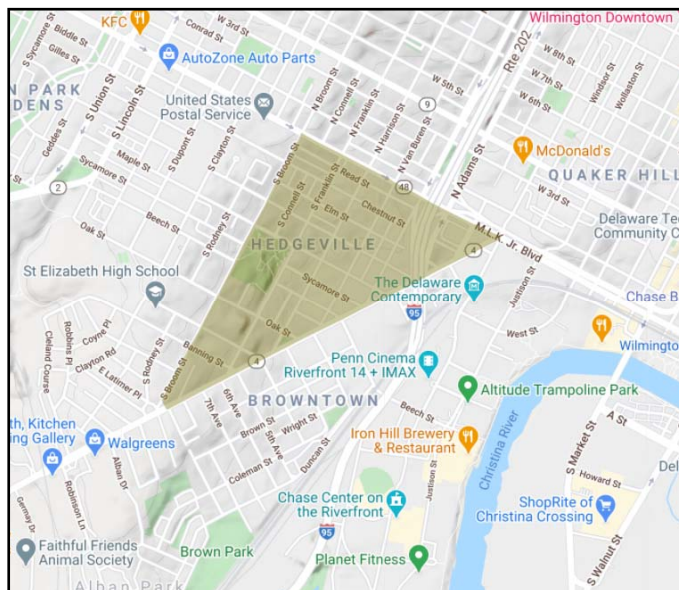


Riverside-Lower Brandywine Village



Census Tract Tech Desert Class	30.02, New Castle County Low Computer & Internet Access
Households	613
Population	3,518
Households w/no Internet	255 (42%)
Households w/no Broadband	261 (43%)
Households w/no Computer	155 (25%)
Households w/Smartphone only	121 (20%)
School-aged (5-19)	865 (25%)
Age 65+	114 (3%)
Households below Poverty	162 (38%)
Black (non-Hispanic)	2,576 (73%)
Hispanic	309 (9%)
Limited English Proficiency	67 (2%)
Low Literacy	189 (7%)

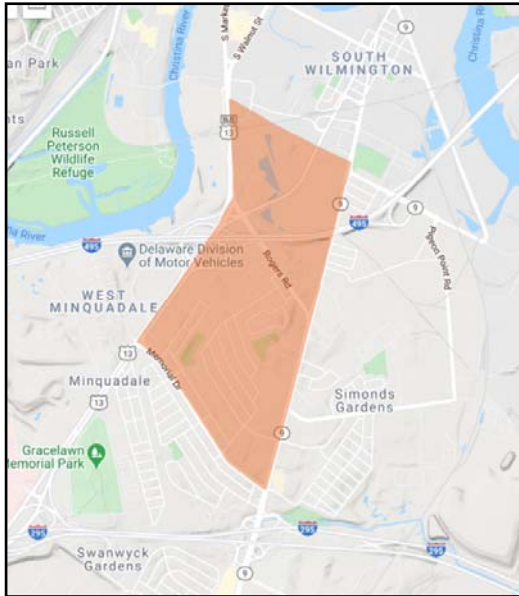
Hedgeville



Census Tract Tech Desert Class	26, New Castle County Low Computer & Internet Access
Households	1,273
Population	3,512
Households w/no Internet	639 (50%)
Households w/no Broadband	647 (51%)
Households w/no Computer	304 (24%)
Households w/Smartphone only	222 (17%)
School-aged (5-19)	745 (21%)
Age 65+	264 (8%)
Households below Poverty	136 (18%)
Black (non-Hispanic)	2,149 (61%)
Hispanic	708 (20%)
Limited English Proficiency	278 (8%)
Low Literacy	129 (5%)

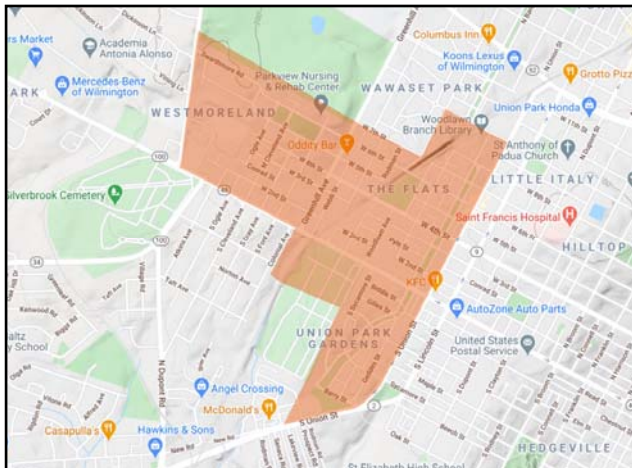


Route 9



Census Tract Tech Desert Class	154, New Castle County Low Computer & Internet Access
Households	969
Population	2,757
Households w/no Internet	375 (39%)
Households w/no Broadband	375 (39%)
Households w/no Computer	259 (27%)
Households w/Smartphone only	94 (1%)
School-aged (5-19)	705 (26%)
Age 65+	459 (17%)
Households below Poverty	158 (22%)
Black (non-Hispanic)	2,216 (80%)
Hispanic	470 (17%)
Limited English Proficiency	128 (5%)
Low Literacy	88 (5%)

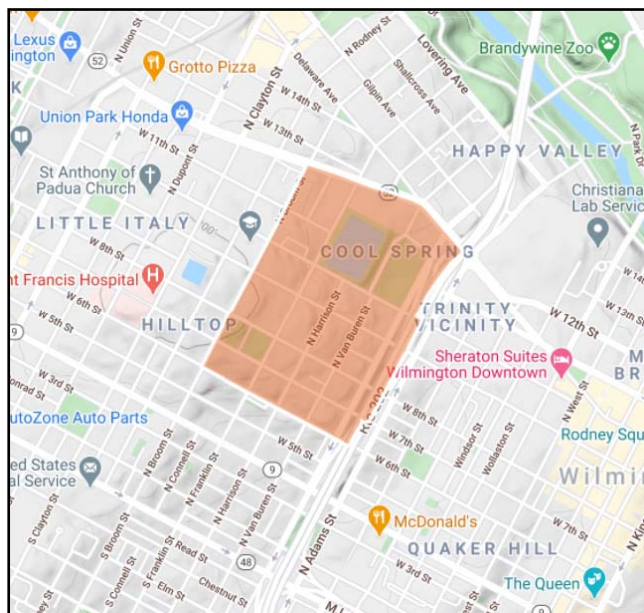
Flats—Union Park Gardens



Census Tract Tech Desert Class	24, New Castle County Low Computer Access
Households	1,830
Population	4,483
Households w/no Internet	534 (29%)
Households w/no Broadband	534 (29%)
Households w/no Computer	354 (19%)
Households w/Smartphone only	433 (24%)
School-aged (5-19)	1,053 (24%)
Age 65+	577 (13%)
Households below Poverty	159 (15%)
Black (non-Hispanic)	2,062 (46%)
Hispanic	451 (10%)
Limited English Proficiency	253 (6%)
Low Literacy	177 (5%)



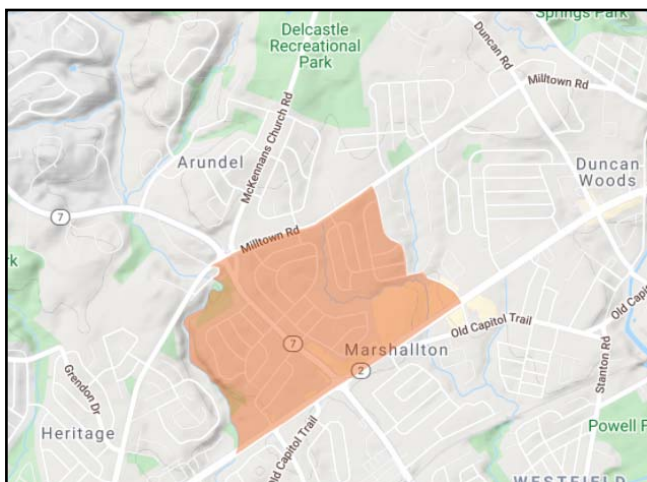
Cool Spring



Census Tract Tech Desert Class	15, New Castle County Low Computer Access
Households Population	962 2,137
Households w/no Internet	253 (26%)
Households w/no Broadband	261 (27%)
Households w/no Computer	237 (25%)
Households w/Smartphone only	44 (5%)
School-aged (5-19)	155 (7%)
Age 65+	455 (21%)
Households below Poverty	29 (8%)
Black (non-Hispanic)	848 (40%)
Hispanic	152 (7%)
Limited English Proficiency	69 (3%)
Low Literacy	44 (3%)

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Miltown



Census Tract Tech Desert Class	133, New Castle County Low Computer Access
Households Population	717 1,825
Households w/no Internet	140 (20%)
Households w/no Broadband	144 (20%)
Households w/no Computer	150 (21%)
Households w/Smartphone only	28 (4%)
School-aged (5-19)	256 (14%)
Age 65+	394 (22%)
Households below Poverty	35 (8%)
Black (non-Hispanic)	22 (1%)
Hispanic	213 (12%)
Limited English Proficiency	39 (2%)
Low Literacy	28 (2%)



Key Considerations

During the 2020/2021 Coronavirus pandemic, there was a rapid transition of everyday activities from mainly in-person to virtual-only. Many technologically adept households absorbed the shift well and some perhaps benefited from it. Less technologically adept households, however, struggled more to keep pace. Beyond enduring greater viral exposure due to employment and living situations which make physical distancing difficult, this report has shown that many impoverished (and in two cases senior) communities have low levels of computer and/or Internet access. Transitioning to virtual activities is likely to be more challenging for many residents of these technology deserts.

Participation results from the 2020 Census illustrates today's digital divide. In Wilmington's Lower Eastside (a tech desert) less than half (46%) of those responding to the Census did so by Internet. That figure can be contrasted against 93% of those in Wilmington's more affluent western neighborhoods and even higher rates in many suburban communities across New Castle County.

There are numerous implications to a hard shift to virtual activities in the presence of a digital divide. Perhaps chief among them is educational equity. Due partly to technological limitations, for example, about 1/3 of the students in Wilmington's Christina School District missed their first day of remote-only class in the 2020 school year. We shared detailed data from this report with Delaware education officials and the United Way to help them press for closing technology gaps in student households.

From the planning process perspective, technology deserts present a challenge to virtual-only public outreach, which has been generally embraced by planning agencies across the nation due to its low cost and ease of use. While virtual-only engagement may be appropriate and can be quite successful in communities with heavy tech penetration, tech deserts are an entirely different context. There virtual engagement should be supplemented with low-tech outreach and engagement such as telephone only meetings, text messaging surveys, and in-person outreach to the extent it is possible. Moreover, regional studies should also utilize supplemental low-tech methods generally and target such methods particularly towards tech deserts.

Planners should consult this document or view its companion interactive map, which can be accessed on the WILMAPCO data report website, to identify tech deserts. WILMAPCO will update the analysis presented here with the next iteration of the Transportation Justice Plan.

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The Wilmington Area Planning Council (WILMAPCO) is the Metropolitan Planning Organization serving New Castle County, Delaware and Cecil County, Maryland.

This data report is part of a series that summarizes key data to allow both residents and decision-makers to better understand our region.

Other data reports are available at:
www.wilmapco.org/data-reports.

