BALTIMORE CITY'S DIGITAL EQUITY FRAMEWORK 2.0

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INFORMATION AND TECHNOLOGY

BROADBAND AND DIGITAL EQUITY

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EXECUTIVE SUMMARY

In 2020, Mayor Scott created the Office of Broadband and Digital Equity (BDE) to coordinate Baltimore's response to the digital divide—which affects an estimated 120,000 households facing barriers to accessing affordable, reliable, high-speed internet. To guide its activities and investments, BDE developed the City's first Digital Equity Framework in 2021.

That initial Digital Equity Framework helped direct the City's broadband-related investments at the height of the Covid-19 pandemic. The City allocated $35 million in federal American Rescue Plan Act (ARPA) funds to reduce Baltimorean's broadband barriers.

As the City has continued its efforts to improve the digital ecosystem, BDE has sought to engage the community and other stakeholders to ensure residents' voices and experiences guide its equity planning. Mayor Scott realigned BDE to the Baltimore City Office of Information and Technology—which has applied its significant knowledge, experience, and resources to update the Digital Equity Framework to reflect the community collaboration and the City's digital equity needs.

This Digital Equity Framework 2.0 represents a community compact to achieve four primary digital equity and inclusion goals:

1. Baltimore City residents will have access to affordable, reliable high-speed internet (broadband), starting with the most underserved communities;
2. Every Baltimorean will have access to digital skills training and education, through expanded efforts and in partnership with community groups;
3. Every Baltimorean will be able to acquire a modern computing device; and
4. Every Baltimorean will be able to receive technical support, in multiple languages, to make the best possible use of digital tools.

When these four goals are realized in Baltimore, we will have reached the ultimate milestone of closing the digital divide. The City will achieve these goals by working with partners throughout the region to improve outcomes for all Baltimoreans.

The Digital Equity Framework 2.0 will also ensure the City makes deliberate investment in those communities with the greatest need—and that the digital safety net will be strong enough to support all Baltimoreans who currently experience the digital divide.

WHAT IS THE DIGITAL EQUITY FRAMEWORK?

The Digital Equity Framework 2.0 provides the foundation on which the City's digital equity strategy will be built. The strategy will focus on internet access, digital skills, modern computing devices, and technical support. These elements together create the context in which all Baltimoreans can be successful in the digital ecosystem.

The framework will enable policymakers, funders, institutions, and community leaders to assess and analyze opportunities. It will guide community engagement and the City's decisions about digital equity investments.

According to the National Digital Inclusion Alliance, "digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services."

Digital inclusion requires intentional strategies and investments to reduce and eliminate historical, institutional, and structural barriers to broadband access and use. If digital equity is the goal, we will get there through digital inclusion.

The quality and comprehensiveness of this framework is a direct reflection of the contributions and input made by the City's partners and the community at-large. Community engagement is key to enabling opportunities—and community partnerships and collaboration are critical to closing the digital divide.

The policies, programs, advocacy, and support emerging from this framework will form a digital inclusion safety net strong enough to support the estimated 120,000 Baltimoreans who may not be able to afford broadband service—as well as the Baltimoreans who face other digital equity challenges.

The Digital Equity Framework 2.0 will enable the City to invest in programs and infrastructure designed to elevate the City's digital equity scores—as measured by the Maryland Digital Equity Scorecard (https://communitydevelopmentmd.org/digital-inclusion)—particularly for the most disadvantaged residents. For example, the Scorecard illustrates that, except for white males, people living with disabilities have lower digital equity index scores when combined with any other demographics (e.g., race, income, etc.). Similarly, individuals over the age of 65 years have lower digital equity index scores when combined with any demographic. And while there is little data regarding digital equity outcomes for individuals experiencing homelessness or who are unstably housed, all other data suggests their digital equity index scores would be significantly affected by their circumstances.

THE DIGITAL EQUITY FRAMEWORK WORKGROUP

To ensure the Digital Equity Framework 2.0 reflects Baltimore-centric insights, experiences, and research, BDE formed the Digital Equity Framework Workgroup. Through the Workgroup, BDE developed a consensus on the statistical, legal, fiscal, and practical elements which define the digital divide. The quality and clarity of the Digital Equity Framework 2.0 could not have been achieved without the input of the Workgroup members.

The Workgroup was composed of 25 individuals who represent the convergence of Baltimore's digital equity, civil rights, disability, and homelessness ecosystems. During the Workgroup's four meetings from winter 2022 to spring 2023, members heard presentations on the nature and impact of the digital divide in Baltimore, provided their unique feedback, and developed consensus on the content of this Digital Equity Framework 2.0.

The City is grateful to the members of the Workgroup for their time and commitment:

1. Nicassia Belton: Baltimore Children and Youth Fund
2. Ja'Ken Caston: Maryland Department of Labor
3. Sara Cooper: Annie E. Casey Foundation
4. Ariel Davis: Baltimore Children and Youth Fund
5. Amalia Deloney: East Baltimore Development, Inc.
6. Cody Dorsey: Baltimore Digital Equity Coalition
7. Lori Fagan: Baltimore City Health Department
8. Demetrius Goodwin: NPower, Inc.
9. Steven Gravelle: Arc of Baltimore
10. Dara Gray: The Family League, Inc.
11. Will Holman: OpenWorks
12. John Horrigan: Benton Institute on Broadband & Society
13. Stepahie Jerger: Organic Trade Association
14. Aaron Kaufman: Central Baltimore Partnership
15. Chris Maynard: Tuerkhouse, Inc.
16. Samantha Musgrave: Project Waves
17. Kaleema Obot: Byte Back
18. Tracey Oliver-Keyser: Housing Authority of Baltimore City
19. Jim Peterson: M & T Bank
20. Christopher Powell: Baltimore City Public Schools
21. Stacie Price: Aiden Marketing
22. Chris Ritzo: East Baltimore Development, Inc.
23. Allen Russell: Baltimore City Public Schools
24. Quinhon Scott: Coppin State University
25. Ashley Tate: Fosterpreneur, Inc.

BDE will continue to actively seek community feedback on the Digital Equity Framework 2.0. As BDE receives input requiring adjustments to the Digital Equity Framework 2.0, updates will be made to the document. We will share those updates with the community and members of the digital ecosystem.

WHY DOES DIGITAL EQUITY MATTER?

There is not a single aspect of modern life untouched by technological innovation. But technology benefits most those who have access to it, can afford it, and are knowledgeable in how to use it. Despite the incredible technological advances of the past two decades, significant numbers of Americans are impeded from "full participation in our society, democracy and economy" (National Digital Inclusion Alliance) because they are on the wrong side of the digital divide.

Covid-19 only served to shine a national spotlight on preexisting digital inequities. Millions of students pivoted to remote learning, but school-aged children who lacked a broadband subscription or suitable devices were left struggling to keep up with their peers. When early vaccinations became available, older adults with limited technology skills grappled with complicated online reservation portals. Disproportionately, some Black and Hispanic families simply did not have the resources available to navigate the vaccine scheduling systems. These are just a few examples of the ways that digital equity has touched the lives of Baltimoreans.

Addressing Structural and Institutional Racism

Racism is the context in which digital inequality exists nationwide. The U.S. has a history of laws, policies, and actions that have systemically disadvantaged people of color, especially Black residents. Baltimore City is no exception. Systemic discrimination has led to significant disparities among Baltimoreans, including in terms of the digital divide. According to the Abell Foundation:

- 73.3% of white households in Baltimore City have home wireline broadband compared with 50.2% of Black households and 46.4% of Hispanic households
- 80.7% of white households have desktop or laptop computers, compared with 60% of Black households and 47.5% of Hispanic households[1]

To effectively address digital equity, the City's policies, programs, funding, and advocacy must acknowledge the impacts of nearly 300 years of structural and institutional racism.

The Intersectionality of Digital Equity and Socioeconomic Indicators

Digital inclusion is but one factor impacting Baltimore's quality-of-life indicators. Health, education, housing, poverty, and structural and institutional racism are also indicators impacting black, indigenous, people of color. These conditions do not exist in a vacuum, and they cannot be compartmentalized. Until we acknowledge and develop strategies to address the intersectionality of quality-of-life indicators, we will continue to find segments of the population on the under-resourced side of the digital equity, education, housing, poverty, and racial divides.

In recognizing the correlation between digital equity and the socioeconomic indicators historically impacting marginalized populations, this framework will guide the City's intentional strategies to remove the barriers to digital access and adoption. Below are examples demonstrating the structural barriers preventing some residents from reaching and benefiting from the digital economy.

1 Source: "Baltimore's Digital Divide: Gaps in Internet Connectivity and the Impact on Low-Income City Residents," Abell Foundation, https://abell.org/wp-content/uploads/2022/02/2020_Abell_digital20divide_full20report_FINAL_web20dr.pdf

Health and Wellness

As demonstrated during the Covid-19 pandemic, without access to high-quality, affordable internet, quality devices, and the skills to use them, individuals and families in Baltimore are unable to benefit from the rapid digitalization of health services. For those who have in-home broadband services, healthcare may be simply a "click away"—allowing for easy access and availability, as well as improved continuity of services. However, many disinvested communities cannot afford broadband service or the devices required to access telehealth—and even for those who can afford internet access and devices, those tools are useless without the skills to utilize them.

Thus, the digital divide creates another gap in the social safety net for vulnerable populations to slip through. Lack of access to telemedicine and digital health services poses an increased risk of health deterioration and creates more opportunities for growth in the inequality of the healthcare system.

Education

Lack of digital equity among students "will lead to four potential long-term consequences:

- *Low performance:* Low-income families have less access to information to advance their education.
- *Competitive edge:* Students with access to the internet will do better when they enter college due to universities embracing technology at an increasing rate.
- *Convenience in learning:* Privileged students have access to better devices and face fewer hurdles to complete their education.
- *Unequal learning experiences:* Students from low socioeconomic areas face more disadvantages and need to spend more hours to complete learning objectives." [2]

Economic Prosperity

Since the beginning of the Covid-19 pandemic, digital technologies have grown across virtually every sector. It has been estimated that many businesses have been able to improve their systems in one year where previously, it would have taken 10 years. In particular, the hospitality, sales, healthcare, and other industries have changed their practices to ensure that employees have relevant and adaptable skills that allow them to confidently use new tools.[3]

Increased broadband penetration, greater broadband availability, and greater penetration of higher speed broadband lead to economic growth.

Broadband for all: charting a path to economic growth, Deloitte, April 2021

For residents of underinvested communities lacking access to digital skills training, workforce development, and other training opportunities, more and more careers are becoming out-of-reach. Jobs once accessible to folks without a college degree and even in some cases a high school diploma now require certain levels of comfort with technology. More often than not, this technology is cost-prohibitive to low-income communities—which means those vulnerable residents have fewer opportunities to achieve economic prosperity.

2 Source: "Digital Equity for All," National School Boards Association, https://nsba.org/ASBJ/2021/june/digital-equity-for-all

3 Source: "Digital Equity for an Inclusive Economic Recovery," National Skills Coalition, https://nationalskillscoalition.org/resource/publications/digital-equity-for-an-inclusive-economic-recovery/

BALTIMORE'S DIGITAL EQUITY AND INCLUSION GOALS

- Every Baltimorean will have access to affordable, reliable, high-speed internet (broadband), starting with the most underserved communities;
- Every Baltimorean will have access to digital skills training and education, through expanded efforts and in partnership with community groups;
- Every Baltimorean will be able to acquire a modern computing device; and
- Every Baltimorean will be able to receive technical support, in multiple languages, to make the best possible use of digital tools.

Broadband Access

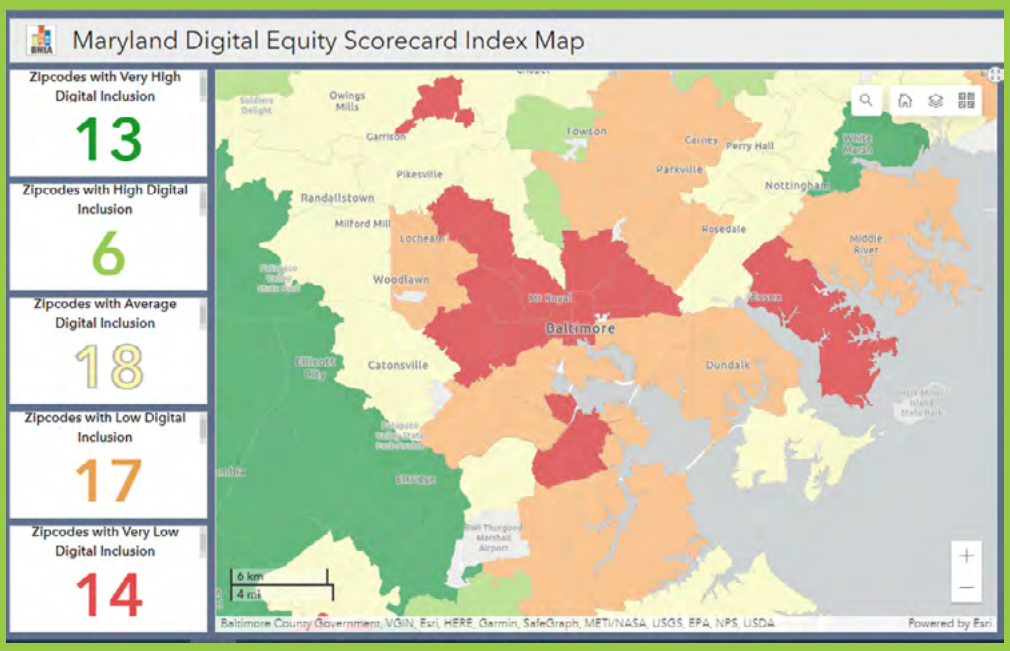
Goal: *Every Baltimorean will have access to affordable, reliable, high-speed internet, starting with the most underserved communities.*

The term "broadband" refers to the transmission of data over a high-speed internet connection. The Federal Communications Commission (FCC) defines broadband as a connection with minimum speeds of 100 Mbps download and 20 Mbps upload. Broadband can be delivered through fiber optics, wireless, cable, DSL, and satellite technology. The connections can be wired (e.g., DSL, cable, fiber), fixed wireless (e.g., Wi-Fi), or mobile (e.g., smartphone, hotspot).

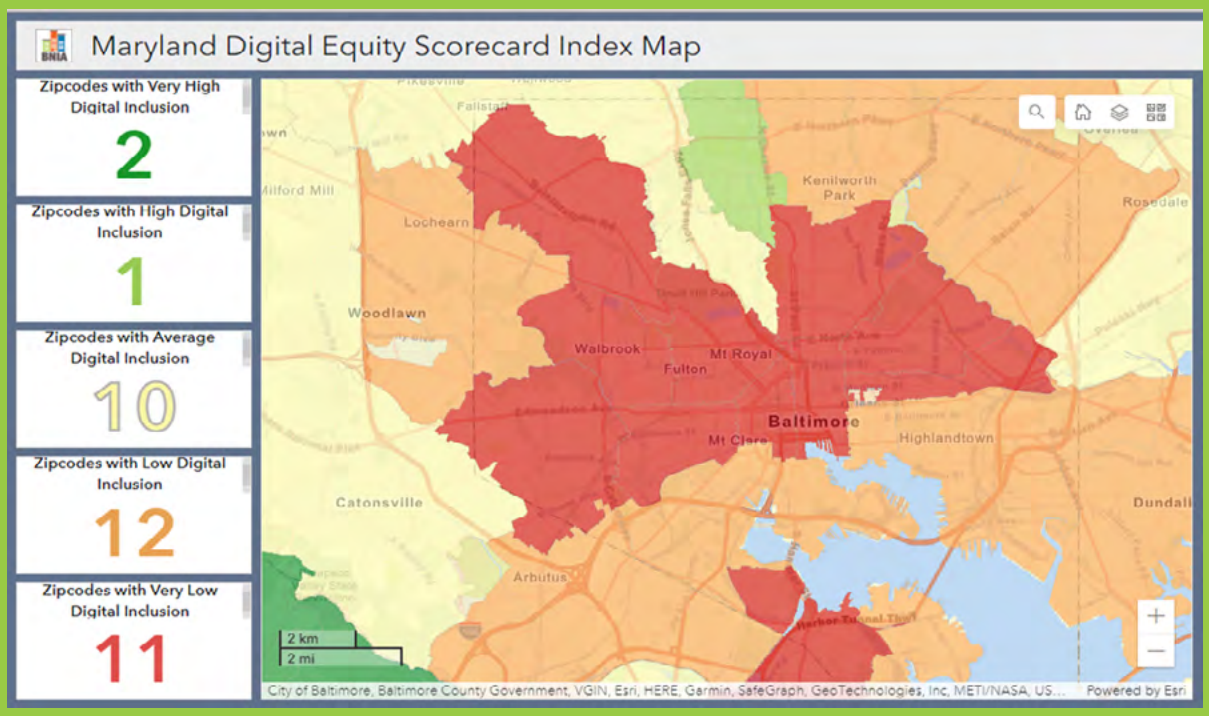
As documented in the Maryland Digital Equity Scorecard Index Map[4], Baltimore City has fewer areas with high digital equity scores than neighboring jurisdictions in the region. The maps below display an index consisting of three indicators relevant to digital connectivity. It was created to develop a measure of digital equity in Maryland at the 5-digit ZIP code level. The three indicators are:

1. **Whether a household has a wireline internet subscription at home**
2. **Whether a household is reliant only on a cellular data plan for online connectivity at home**
3. **Whether a household has either zero or just one computing device for internet access**

4 https://bniajfi.maps.arcgis.com/apps/dashboards/de8d2f55435a4ff58ec80284ddd11fbf



A closer examination of the dispersal of digital equity index scores among households in Baltimore identifies a stark contrast between those communities achieving digital equity and those that have substandard broadband access and devices.



To address the inequities, the Framework highlights the need to prioritize resources in Baltimore ZIP codes that carry a disproportionate burden of the digital divide:

- 21201
- 21202
- 21205
- 21213
- 21215
- 21216
- 21217
- 21218
- 21223
- 21225
- 21229

Digital Skills Training

Goal: *Every Baltimorean will have access to digital skills training and education, through expanded efforts and in partnership with community groups.*

Digital knowledge occurs when a person has the information and skills necessary to utilize the available technology in a way that helps them achieve their lifestyle goals.

According to a 2018 report by the U.S. Department of Education, digital literacy among U.S. adults generally increases with educational attainment. About two-fifths (41%) of U.S. adults without a high school diploma are not digitally literate compared with 17% of adults who have a high school diploma but no college degree, and 5% of adults who have a college degree. According to the U.S. Census Bureau, approximately 13.7% of Baltimore residents do not have high school diplomas. This suggests up to 80,000 Baltimoreans may lack digital literacy.

According to the State of Maryland Department of Labor's Adult Education Digital Literacy Framework, the digital skills that Baltimoreans need to successfully navigate the digital ecosystem and bridge the digital divide are in seven domains: productive, technical, civic, communicative, collaborative, computational thinking, and investigative:[5]

Productive – Creating content and/or products using digital tools

- What is the best platform to use when sharing my created content?
- Am I able to develop/adapt digital content suitable for different platforms and audiences?
- Who is the audience of this content?
- Am I able to identify and develop digital resources to solve specific problems or meet identified needs?
- Does my solution solve or answer the original problem/question/task?

Technical – Physical navigation and operation of digital tools, structures, and conventions

- Do I know how to operate the technology device?
- Am I confident working with new applications, tools and software?
- Am I able to move from one task to another with ease?

Civic – Using digital tools safely, effectively, and appropriately

- Do I understand my role in different digital environments?
- Am I familiar with the rules of online behavior, privacy, and sharing?
- Do I understand how to select a secure password?

5 Source: "Adult Education Digital Literacy Framework," State of Maryland Department of Labor, https://www.dllr.state.md.us/adultliteracy/digitalliteracyframework.pdf

- Do I present myself appropriately in digital contexts?
- Do I understand how to build and protect my online identity?
- Am I able to manage my online persona and reputation?
- Do I know my rights and responsibilities in the digital environment?

Communicative – Sharing ideas clearly, effectively, and creatively with different audiences following digital communication protocols

- Do I have a clear understanding of the needs of the intended audience?
- Am I able to identify alternative or concise ways to share information?
- Am I able to use appropriate tools for different audiences following ethical and legal criteria?
- Do I understand the connections between recipients, source, and purpose of the information I share?

Collaborative – Connecting and working with others, while using appropriate digital platforms and tools

- Who am I in the group? Will I always have the same role?
- Will I work with others now or at different times (synchronous or asynchronous)?
- Am I able to work with others using a variety of technology modes?
- Do I understand the potential ethical or cultural challenges associated with working with others in the digital space

Computational thinking – Using critical thinking and problem-solving skills in conjunction with technology to gather data, analyze information, and find a solution

- Do I understand how ideas work together to create a solution?
- Do I see possible outcomes from decisions made when solving a problem?
- How do I give clear guidelines for others to follow?
- What steps can I take to solve the problem?
- What information distracts me from solving the problem?

Investigative – Searching, identifying, and validating reliable and authentic digital resources

- Can I identify who created the source and the author's intended purpose?
- Is there a better resource to use?
- What information do I need to decide on the use of this information?
- What do I know if something is valuable, accurate, and truthful?

Devices

Goal: *Every Baltimorean will be able to acquire a modern computing device.*

Internet connections at home are necessary for Baltimoreans to do anything online. However, individuals also need internet-capable devices to utilize internet access. According to the Abell Foundation, more than 70,000 Baltimoreans have inadequate access to quality computing devices such as a desktop or laptop computer. As seen in the table below, households with lower incomes are more likely to have a smartphone instead of a more powerful laptop or desktop computer—meaning they are at a disadvantage when considering their ability to use internet access for telehealth, remote learning, or telework.

	All	Under $25,000	$25,000 - $49,999	$50,000 - $74,999	$85,000 - $149,000	$150,000 and greater
Desktop or laptop computer	68.3%	42.8%	62.2%	75.8%	88.6%	92.8%
Tablet computer	53.3%	30.7%	43.7%	60.1%	71.3%	83.9%
Smartphone	81.9%	68.3%	80.2%	83.8%	91.8%	96.6%
Number of households	237,144	65,994	54,271	37,965	52,817	26,097

Source: Baltimore's Digital Divide: Gaps in Internet Connectivity and the Impact on Low-Income City Residents, Abell Foundation

Technical Support

Goal: *Every Baltimorean will be able to receive technical support, in multiple languages, to make the best possible use of those tools.*

Technical support can include one-on-one assistance delivered in-person, over the phone, or online. It can also encompass supplemental resources, such as video tutorials or printed materials, designed to help all Baltimoreans.

Multiple studies have indicated that lack of technical support available to users is one of the reasons for lower digital equity outcomes in some communities. These outcomes are exacerbated when combined with other limiting circumstances (e.g., low educational attainment, poverty, non-native English speaker). There are several ways to address this issue. For example, some communities provide technical support services for new internet users via organizations already providing social services in the community. The goal is to provide on-demand support for internet access and adoption.

NEXT STEPS

The Digital Equity Framework 2.0 will guide the City's community engagement efforts and the development of the City's Digital Equity Strategy. As a first step, the City will share information about the Digital Equity Framework 2.0 and the plans for the future of the digital ecosystem. BDE will be visiting community and neighborhood associations citywide to present information about this document and opportunities for feedback.

BDE will also convene a panel of interested residents through which community members and institutions can share knowledge and receive feedback about Baltimore's digital ecosystem. If you have ideas about how you can be part of closing the digital divide in Baltimore, please contact BDE@BaltimoreCity.gov.

GLOSSARY

The Baltimore Digital Equity Framework 2.0 incorporates and is informed by the following terms:

Affordable Connectivity Program – The ACP is a federal initiative that provides eligible households with a $30 monthly subsidy on broadband service and connected devices.

BCIT Office of Broadband and Digital Equity (BDE) – The City department responsible for creating and executing a strategic plan to close the digital divide in Baltimore.

Broadband – High-speed internet access defined by the FCC as a minimum of 25 megabits per second (Mbps) download and 3 Mbps upload speeds, often written 25/3. For modern internet use, a typical household likely needs a minimum of 100/20 to accomplish distance learning.

Connectivity – The resources allowing an individual to connect to the internet.

Covered Populations – The populations the BDE framework is centered around (e.g., Individuals in particular ZIP codes, families with school-age students, individuals 65 and older).

Devices – A modern computing device (laptop, Chromebook, tablet, smartphone) used to connect to the internet.

Digital Access – The information technology capacity needed by an individual, community, or group for full participation in our society, democracy, and economy. Digital Access refers to the unique opportunity for civic and cultural participation, employment, lifelong learning, and access to essential services.

Digital Divide – The gap between those with affordable internet access, a usable device, digital skills, and support to effectively engage online and those without. Also known as the Digital Gap.

Digital Equity – "A condition in which all individuals and communities have the information technology capacity to participate in our society, democracy, and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services."

Digital Inclusion – The "activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to" high-speed internet access, useful devices, and digital skills training. It "requires intentional strategies and investments to reduce and eliminate historical, institutional, and structural barriers" to full participation in the information age.

Digital Knowledge – Occurs when a person has the information and skills necessary to utilize the available technology in a way that helps them achieve their lifestyle goals.

Digital Redlining – Discrimination by internet service providers in the deployment, maintenance, or upgrade of infrastructure or delivery of services. The denial of services has disparate impacts on people in certain areas of cities or regions, most frequently based on rurality, income, race, and ethnicity.

Equity Pause – Quarterly project check-ins designed to ensure our team uses an equity lens in our work.

Fiber – Fiber optics, commonly referred to as fiber, is the broadband technology by which the passage of light transmits data, voice, and images through thin, transparent fibers over long distances. Other wired transmission methods for broadband service are cable modem, which uses coaxial television cables, and digital subscriber line (DSL), which uses copper telephone lines.

Fixed Wireless – A broadband technology that delivers wireless internet connections to end users via antennas mounted in fixed locations.

Framework – A detailed plan to guide progress toward a goal.

Internet – The electronic communications network that connects computer networks and organizational computer facilities worldwide.

Public Wi-Fi – Wireless internet service located in public spaces, provided for free by Baltimore City.

Sustainability – The extent to which the benefits of an intervention can be maintained in the longer term or under different funding circumstances.

Wi-Fi – Wireless networking technology that uses radio waves to provide wireless high-speed internet access.

We Invite all stakeholders to engage with us about their ideas and feedback on closing the digital divide in Baltimore City.

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