2022

GREATER SALT LAKE MSD DIGITAL INFRASTRUCTURE ASSESSMENT AND ACTION PLAN

CONNECTED UTAH

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All Participating Service Providers and Community Organizations

All Participating Members of the Public

**Kearns Metro Township opted to not participate in this study.*

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STUDY PURPOSE

I. Identify Gaps in infrastructure, Services, and Coordination

With heat, electricity, and water, in-home broadband access has become universally recognized as a fourth utility. Internet at home has become essential to enable students to learn and thrive, businesses to remain nimble and competitive, seniors to take advantage of telehealth options, and everyone to connect with others and participate in a digital society.

The emergence of the COVID-19 pandemic placed a spotlight on existing gaps related to access to the internet, devices, digital skills training, technical support, and accessible online content and applications. As schools closed for in-person instruction and businesses moved employees to work-at-home models in March 2020, the awareness and consequences of the digital divide became more evident and life-threatening as they collided with the economy, education, healthcare, government services, and civic participation.

Disparities related to digital infrastructure, internet affordability, and device access were been disproportionately highlighted and covered by the media. Whereas other gaps in digital inclusion, including accessible digital content, digital literacy training, and technical support, were not adequately recognized as part of the solution. Digital equity ensures all aspects needed for meaningful digital participation are addressed, including supporting groups with unique barriers such as the senior, homeless, refugee, immigrant, small business, and disability community.

II. Determining Government Roles in the Digital Divide

In June 2020, the Greater Salt Lake Municipal Services District, Salt Lake County Library, and several Salt Lake County agencies began participating in meetings to more closely identify digital equity challenges and opportunities across the county and MSD communities. While Salt Lake County Library has been a leader in actively addressing the digital divide for residents in MSD communities, there is increasing recognition of the need for additional collaboration. The need for additional partners became evident as physical library locations were closed to the public, and some residents across the county were left without adequate access to the internet, devices, and digital literacy education and support. Additionally, because libraries are funded by a separate tax base and are thus limited in their scope of services, they cannot facilitate cross-departmental and -sector efforts to comprehensively address digital equity needs countywide.

This study seeks to understand how the MSD, Metro Townships, County agencies, and other regional partners can best leverage existing assets, commit to more clearly defined roles, and participate in or facilitate local or regional coordination.

III. Identify and Commit to Actionable Strategies and Sustainable Efforts

Over the last two years, MSD-member communities have worked on preparing and adopting their General Plans. Residents in several areas prioritized improving broadband access and reliability through the planning process. This study aims to prepare for the utilization of ARP, IIJA, and other funds and develop a financially sustainable effort beyond the lifespan of one-time federal funds.

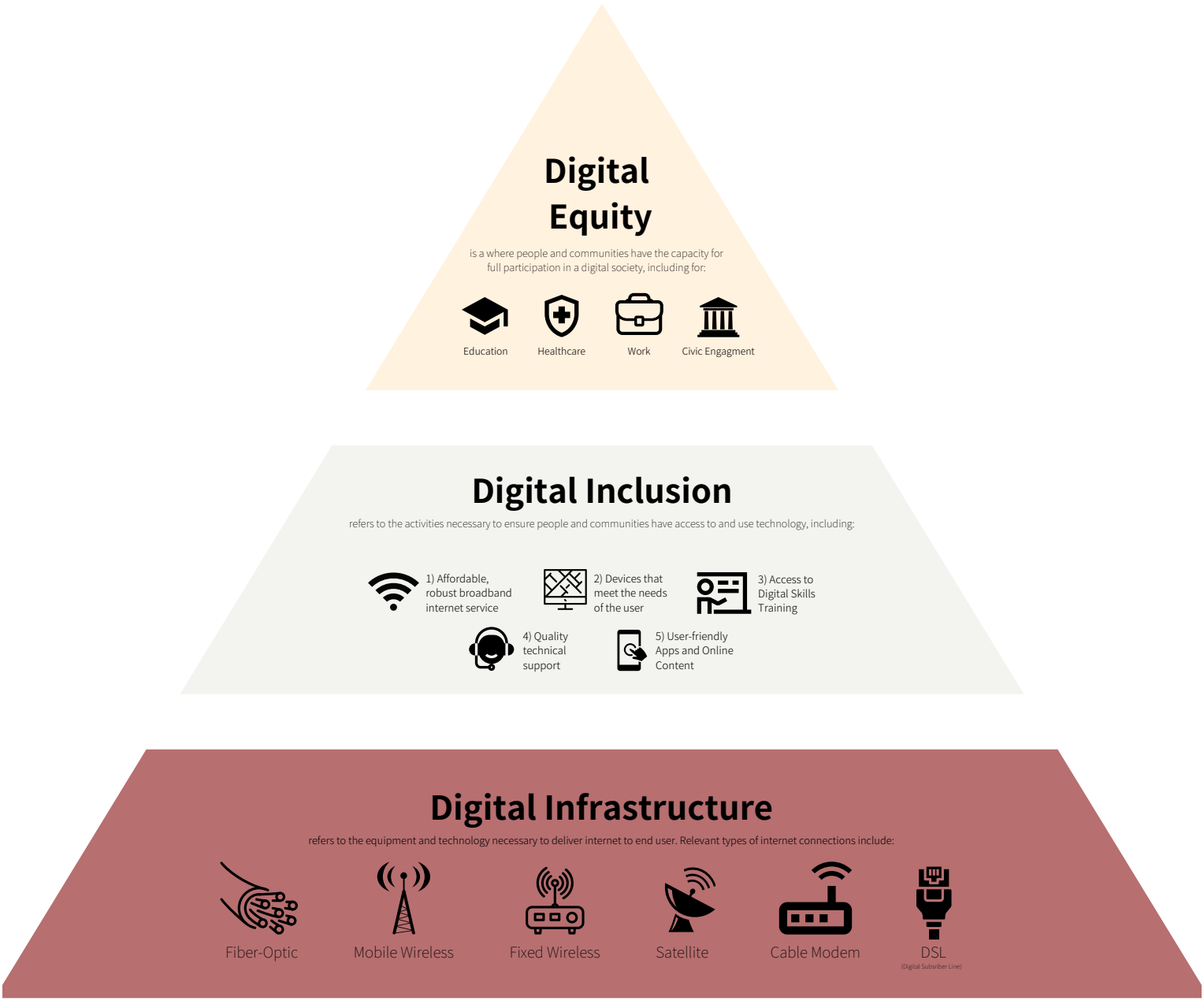
This study includes assessments and action plans, providing an initial strategy and set of recommendations to address the digital connectivity needs of residents across MSD communities. Because technological innovation will continue and the digital divides will evolve, this resource serves as a starting point and provide a program infrastructure to ensure an inclusive recovery from the COVID-19 pandemic and provide a long-term system to address current and future digital disparities.

Digital Connectivity Framework

Definitions are from the National Digital Inclusion Alliance and framework is adapted from Utah Digital Connectivity Draft Plan

Digital Divide is the gap between those who have affordable access, skills, and support to effectively engage online and those who do not.

As technology advances, the divide evolves and prevents equal participation and opportunity in all parts of life, disproportionately affecting people of color, Indigenous peoples, households with low incomes, people with disabilities, people in rural areas, and aging adults.



Definitions and Concepts

Key Terms Related to Addressing the Digital Divide

Internet

Download Speed
The speed at which an internet connection can retrieve data from the internet. The unit of measure is megabits per second (Mbps).

Upload Speed
The speed that an internet connection can allow data to be sent from a device to the internet. The unit of measure is megabits per second (Mbps).

Satellite
transmits data by linking with a satellite in orbit. Satellite packages typically include data limits and depend on the end users' line of sight to the orbiting satellite and weather. Speeds are generally comparable to or lower than those offered by DSL, usually up to 25 Mbps. These speeds are increasing to over 100 Mbps with advancements in satellite and space technologies (BroadbandNow).

Digital Subscriber Line (DSL)
Allows the transmission of data over traditional copper telephone lines. Speeds usually range from 5 to 35 Mbps (BroadbandNow).

Fiber-optic
Transmits data by converting electrical signals to light and sending it through transparent glass fibers offer speeds significantly faster, usually up to 1,000 Mbps (BroadbandNow).

Fixed Wireless
Transmits data using radio links between the end-user and the service provider. This does not include mobile wireless. Service is offered from a fixed point requiring an external antenna and a direct line-of-sight. Speeds are comparable to or faster than DSL, usually ranging between 5 to 50 Mbps (BroadbandNow).

Hardware & Software

Hardware
The physical components required for a computing device to function. Examples include Central Processing Unit (CPU), keyboard, and mouse.

Hard Drive
The hardware component stores all of your digital content. Your documents, pictures, music, videos, programs, application preferences, and operating system represent digital content stored on a hard drive.

Software
The software includes the programs, procedures, and routines associated with the operation of a computer system. Examples include operating systems, web browsers, and word processors.

User Experience (UX)
The experience of a user and how they interact with software, including websites, apps, or services. It includes a person's perceptions of utility, ease of use, efficiency, and accessibility.

Digital Participation

Digital Equity
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 (National Digital Inclusion Alliance - NDIA).

Digital Inclusion
Digital Inclusion refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs). This includes 5 elements: 1) affordable, robust broadband internet service; 2) internet-enabled devices that meet the needs of the user; 3) access to digital literacy training; 4) quality technical support; and 5) applications and online content designed to enable and encourage self-sufficiency, participation and collaboration (NDIA).

Digital Connectivity
The framework used by the State of Utah to define and jointly address broadband infrastructure and digital inclusion and equity

Digital Literacy
Digital Literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills (American Library Association).

Digital Navigators
Digital navigators are trusted guides who assist community members in internet adoption and the use of computing devices. Digital navigation services include ongoing assistance with affordable internet access, device acquisition, technical skills, and application support (NDIA).

Web Accessibility
Web accessibility means that websites, tools, and technologies are designed and developed so that people with disabilities can use them. More specifically, people can: a) perceive, understand, navigate, and interact with the Web b) contribute to the Web (World Wide Web Consortium - W3C).

STUDY METHODOLOGY

Two methodologies were utilized for the MSD Digital Infrastructure Study. The Digital Divide Index framework, developed by the Purdue Regional Development Center, was used to better understand digital infrastructure and adoption needs at a census tract level (Gallardo, 2020). The Digital Inclusion Ecosystem framework, developed by the National Digital Inclusion Alliance, was used to provide an MSD-wide assessment of all the necessary inputs for participation in a digital society (NDIA, 2021)

Digital Divide Index

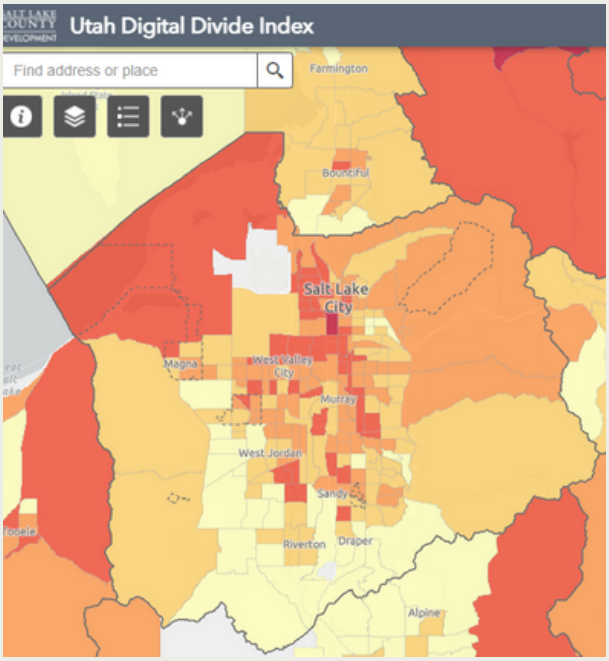
This index uses the 5-year American Community Survey (ACS) and FCC Form 477.

The first component of the index is the infrastructure/adoption (INFA) score which includes:

- Percent of the 2019 population without access to 100/20 fixed broadband (NBBND)
- Median maximum advertised download (DNS) and upload (UPS) speeds
- Percent of homes without internet access or not subscribing (NIA)
- Percent of homes with no computing devices (NCD)

The second component of the index is the socioeconomic (SE) score which includes:

- Percent of the population age 65 and over (AGE65)
- Percentage 25 and over with less than a high school degree (LTHS)
- Individual poverty rate (POV)
- Percent of the noninstitutionalized civilian population with any disability (DIS)
- Digital inequality or internet income ratio measure (IIR). This measure is the ratio between the share of homes making less than $35,000 per year without internet and the share of homes making $75,000 or more per year without internet access. A higher ratio indicates greater internet access inequality between wealthier and lower-income homes.



Digital Divide Index Map for Census Tracts in Salt Lake County including all MSD Communities

The Digital Divide Index's limitations must be understood to interpret and analyze the results. These socioeconomic variables indirectly measure adoption for the SE component since they can be considered potential predictors of lagging technology adoption or inequities. However, these aren't direct measurements of digital literacy and participation levels, as such measures do not exist nationally or in any state.

For the INFA component, one limitation of the index is that the median maximum download and upload speeds are advertised speeds and not actual speeds. These median speeds are also for an entire census tract and may not adequately represent the wide range of speeds within a tract. Additionally, these speeds are self-reported by providers and not validated by consumers or third-party entities.

Access to cellular wireless is omitted as a variable because creators of the index believe the benefits of mobile data plans are undermined by smaller device screens and limited data plans (i.e. the challenges of completing homework or government application on a smartphone and limited data plan).

"Due to data limitations [the index] was designed as a descriptive and pragmatic tool and is not intended to be comprehensive. Rather it should help initiate important discussions among community leaders and residents."

- Purdue Center for Regional Development

All infrastructure and socioeconomic scores for the index were normalized to fall between a 0 to 100 range, where the higher the number, the higher the digital divide (Appendix E & F). The analysis considered INFA and SE scores separately rather than jointly since every MSD community has a higher SE score than its INFA scores. The index is more helpful for a regional analysis when comparing INFA scores against other INFA scores in different communities and the same for SE scores. Ultimately, this analysis was an important tool that supported stakeholder and community engagements to develop data-driven recommendations.

Digital Inclusion Ecosystem

The Digital Inclusion Ecosystem framework is a tool to determine the presence of necessary programs and policies that meet a community's unique and diverse needs. A series of questions were developed during the study as an objective criterion to evaluate the Digital Inclusion Ecosystem that serves MSD residents. No one entity alone is responsible for addressing all components of any digital inclusion ecosystem. Robust coordination with the public and private sector is a prerequisite to effectively managing all digital connectivity areas.

Similarly, this study has identified that the MSD does not have enough governmental authority and its communities have insufficient resources to lead in developing such an ecosystem. However, the MSD and its communities have a critical role as partners and conveners for the residents they serve to advance digital connectivity efforts in the greater Salt Lake County area.

Indicators of a Strong Digital Inclusion Ecosystem:

A. Existence of programs and policies addressing all aspects of the digital divide:

- Affordable and subsidized broadband service options that meet the community's needs
- Affordable and subsidized device ownership programs that meet the community's needs
- Multilingual digital literacy and digital skill trainings that meet the community's needs
- Hardware and software technical support
- Digital navigation services to guide residents to the above services

B. Collaboration: Entities providing local digital inclusion services, policymakers, advocates, social service providers and community leaders co-create solutions in partnership with the community.

Community Engagement

All Communities were invited to participate in this study. Participation varied by interest and capacity.

MSD Digital Connectivity Survey

90

residents participated in the survey, representing all MSD communities including unincorporated Salt Lake County

20%

or 14 of 67 respondents reported inadequate or lower quality of internet for their remote work or operating a home business

56%

or 51 of 90 respondents rely on internet to work from home or operate their business

2

Coverage bias errors due to only administering the survey in English and online, where those without digital access and/ or skills could participate

Word Cloud of responses to an optional question about challenges or opportunities in the community

Additional Outreach

44 individuals participated in Digital Infrastructure Breakout Sessions at Brighton Workshop

7 individuals completed a paper survey during a Magna Metro Township Council Meeting

6 individuals participated in the Digital Infrastructure Breakout Session at Sandy Hills Workshop

40 individuals attended the MSD Digital Infrastructure Open House

Digital Inclusion Ecosystem Assessment

Existing Conditions of MSD-Wide Digital Inclusion Ecosystem

Benchmarks	Criteria	Adequately Addressed	Need Regional Coordination	Need Local Coordination & Funding
Affordable broadband options 	a. Is there more than one internet provider option? b. Is there a subsidized option available? c. Is there access to speeds of 100/20 or higher?			X
Affordable device ownership programs 	a. Are affordable and subsidized device ownership programs available?	X		
Multilingual digital skills training 	a. Are there public or community-based digital skill trainings tailored for underserved communities?		X	
Hardware and software technical support 	a. Are there public or community-based technical support options for underserved communities?		X	
Digital navigation services to guide residents to the above services 	a. Are there digital navigation services accessible in person or virtually?		X	
Organizational structure and capacity for ongoing collaboration 	a. Is there an organization or agency/division where regional digital inclusion efforts are housed? b. Is there ongoing collaboration with key stakeholders focused on solutions to the digital divide?		X	

AFFORDABLE BROADBAND OPTIONS

Fixed Broadband Infrastructure

In-home broadband internet service is generally available to most residents living in MSD communities. While there are one or more internet service offerings available to nearly every resident, internet service provider (ISP) options can be quite limited, particularly in sparsely populated areas of Salt Lake County, including several MSD communities and unincorporated areas of Salt Lake County. Two providers, Xfinity and CenturyLink, hold most of the residential broadband market in MSD communities. The expansion of UTOPIA and Google Fiber across Salt Lake County adds a first, second, or third primary fiber option for several MSD communities. Additionally, several smaller companies provide fiber-optic internet in pockets of MSD communities and unincorporated Salt Lake County, including HiCountryNet Fiber and Senawave.

Both Brighton and Emigration Canyon have a significant portion of residents without access to 1000/100 or 100/20 Mbps speed internet (Utah Residential Broadband Map). Both these communities' locations in mountainous terrain with fewer homes result in a scenario where there is a higher cost per service for ISPs and a more complex financial justification for an investment in fiber by the private sector without additional financial support. Both communities currently have areas with access to digital subscriber line (DSL) internet. Likewise, in both these communities, there are three primary alternatives to the limited DSL wireline being used: Satellite internet (Hughes.Net, Viasat, Starlink), Fixed wireless internet (Utah Broadband, Rise Broadband, Keystone Solutions, Senawave), and Cellular home internet (T-Mobile, Verizon, Human-IT, PCs for People).

With 100/20 Mbps coverage in most MSD communities, affordability and quality of existing options and availability of gigabit fiber options remain prevalent issues for many residents in MSD communities. Because prices for Xfinity, Centurylink, and other competitors vary based on a range of factors, including the presence of competitors, promotions, geographical area, and bundled offerings, broadband affordability varies within a particular community.

If there are multiple quality internet options that a resident can choose from, residents have greater power as a consumer to negotiate a better price from the provider if they are aware and have the skills to negotiate effectively.

However, residents of multi-tenant environments (MTEs) don't have this benefit since their buildings are often subject to bulk or exclusivity agreements enacted by the property owner. These agreements limit their ability to choose an alternate provider, negotiate pricing, or apply federal internet subsidies to their home internet service.

Access to Multi-Family Housing

Residents of multi-tenant environments (MTEs), including public housing, disproportionately represent the low-income and minority communities that are most affected by the digital divide. Their buildings are often subject to bulk or exclusivity agreements, limiting their ability to enroll in discounted internet offerings.

A recent FCC order was enacted in February 2022 to increase competition in MTEs. This order included the ban of revenue sharing agreements (RSAs), where ISPs provide a portion of their revenue to landlords. Graduated RSAs, where landlords received additional payment when a more significant share of residential units enrolled, were also banned. This order will likely not impact existing agreements but set a precedent for agreements moving forward. In the meantime, residents in MTEs seeking affordable options can utilize discounted mobile internet service offerings until a more clear pathway exists for additional fiber-line providers to serve a single MTE.

Discounted Offerings

The lower end of the market rate offerings from ISPs, which range from $30-to $50, is unaffordable to a number of Salt Lake County households. There are two discounted fixed broadband options, Comcast Internet Essentials (50 Mbps - $10) and Google Fiber Neighborhood 100 (100 Mbps - $20), which are available to qualified residents based on income and neighborhood connectivity levels (Google Fiber) or participation in other government assistance programs (Comcast).

Currently, there are two federal subsidies available to increase the affordability of the internet service of participating providers. Households that participate in specific assistance programs, such as SNAP, Medicaid, Federal Public Housing Assistance, SSI, WIC, Federal Pell Grant, the National School Lunch Program, or the School Breakfast Program, are eligible for both subsidies. The Lifeline program subsidizes a basic mobile data plan (valued at $9.25) through several mobile service providers. The Affordable Connectivity Program (ACP) subsidizes home internet and mobile hotspot plans of participating providers by $30. Participating providers in MSD communities include Comcast, Centurylink, Google Fiber, Human-IT, and PCs for People.

These valuable programs make home broadband attainable for many households that otherwise could not afford it. However, they are underutilized due to a combination of onerous eligibility and verification requirements, low levels of awareness and enrollment support for those who would benefit, and trust concerns of sharing personal information with large companies and the federal government.

Mobile Internet Service

About one in every ten Salt Lake County households (35,000 households) uses a mobile data plan with no other type of home Internet subscription (ACS 2020: 5 Year Estimates). This figure highlights how smartphones and mobile data plans have revolutionized communities by making the internet more accessible and affordable, including in MSD communities. A Pew Research Study in 2021 identified that almost half of the non-users of home internet cite having other options for internet access or the fact that their smartphone does everything they need as a reason they do not have a high-speed internet connection at home.

However, residents without home internet subscriptions remain limited in opportunities to participate in distance learning, remote work, and civic engagement. Furthermore, smartphones often do not have sufficiently large screens or keyboards to facilitate a greater range of opportunities, including navigating specific applications, software, or websites not adequately formatted for mobile phones. Students, in particular without access to larger devices, have fewer opportunities to explore new ideas, reinforce concepts from school, and hone new skills. Major cellular providers and nonprofits have agreements to provide low-cost internet hotspot service, utilizing existing networks that enable residents to use cellular internet on larger devices such as tablets, laptops, and desktops.

AFFORDABLE DEVICE OWNERSHIP OPTIONS

Throughout the MSD communities, there are robust options available for residents to access computing devices, including laptops, desktops, tablets, and smartphones. Because the average lifespan of computer devices is between 3-5 years, there is an ongoing challenge of being able to purchase, maintain, repair, and re-purchase devices. While there are devices available at public and community points that serve residents, the pandemic and stay-at-home orders reinforced that the primary goal for all residents must be device ownership.

School Districts

The five Salt Lake County school districts (Salt Lake City, Murray, Granite, Canyons, Jordan) have taken a different approach to address the gap in devices, internet, and digital skills training for K-12 students and their families. While these school district programs are vital to getting devices into the hands of students, they usually have to be returned to the schools for the summer. There are also restrictions on software and internet access, meaning they are limited in addressing the other digital access needs of the household, particularly for adults and other caregivers. Generally, districts and schools have robust efforts to address digital equity needs for students and their families. Their experience and assets must be considered as a resource that can be leveraged to support other communities affected by the digital divide.

Federal Device Subsidies

Currently, there are two subsidies available to increase the affordability of devices for residents. Households that participate in specific assistance programs, such as SNAP, Medicaid, Federal Public Housing Assistance, SSI, WIC, Federal Pell Grant, the National School Lunch Program, or the School Breakfast Program, are eligible for both subsidies. The Lifeline program, which subsidizes a basic mobile plan through several mobile service providers, provides basic smartphones for free. The Affordable Connectivity Program (ACP) also includes a device benefit of $100 for devices up to $150. To access this device benefit, the selected internet provider must also participate. While most major fixed broadband providers do not offer devices, wireless hotspot service providers such as Human-IT or PCs for People have free and subsidized device options.

Affordable Market Offerings

It is important to note that brand new laptops can be purchased for under $200, and smartphones can be bought for under $100 at many retailers. This means the process of refurbishing and distributing an old device can ultimately add up to the equivalent cost of a new device. Purchasing new devices can lead to

opportunities to receive bulk discounts that can further lower costs. Additionally, the lifecycle of a new device will be longer than a refurbished device. Purchasing and distributing new devices in bulk can help streamline technology skills training and support for fewer types of devices rather than supporting a myriad of donated equipment (Franklin County Digital Equity Framework, 2021).

Device Refurbishers

The lowest cost option for providing computers to households in need is using refurbished devices. National nonprofits, including PCs for People and Human-IT, refurbish digital devices and give these devices and mobile hotspots to low-income families. The computers are typically donated by local companies, education institutions, and other public and community organizations, which has the added benefit of creating community partnerships and keeping technology waste out of landfills. While these organizations offer online sales and ship nationwide, the lack of a physical presence is a barrier for many potential users, especially those who lack the skills or comfort to purchase a device online or need ongoing in-person maintenance and technical support. Additionally, national refurbishers have higher transportation and logistic costs than local refurbishers.

There are currently two nonprofits located in Salt Lake County that provide refurbished devices for low-income households. SpyHop began its Tech Liberation Project in 2020, an effort aligned with the Spy Hop Youth Prevention Coalition to address the device needs of students and families in need. This project utilizes high school youth who receive CTE credits for refurbishing devices while gaining STEM exposure, hands-on experience, and training. Organizations can apply for refurbished devices distributed to individuals in need for free.

TechCharities was established in 2013 and has provided hundreds of refurbished devices annually at a nominal cost-Chromebooks for $30, desktops with monitors for $40, and laptops for $50-$75. They have an ongoing supply of devices through their national network and local relationships with universities, faith-based organizations, companies, and the greater community. They have a physical storefront that is open to the public from 10 am-12 pm on Mondays or by appointment. Their volunteer-run model with financial and in-kind support keeps the costs affordable and remains effective as they leverage community partners to distribute 70% of their device supply.

A major barrier to increasing refurbished device inventory for community efforts is security concerns from large businesses and governments during the refurbishment process. Many companies and governmental entities, including the MSD, send their devices to a third-party firm that discards, recycles, or resells various components or devices. There is a need for governments and companies to reconsider or enact electronic waste, surplus, and other policies to further support and scale refurbished device efforts.

Device Refurbishment Model

Best Practices to Achieve Sustainability and Impact

Local Device Inventory

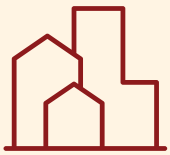
- Outreach to governments and businesses
- Partnerships & written agreements to refurbish ongoing supply of devices

Nonprofit Refurbishers

- Develop CTE programs and internships for students to learn and refurbish devices
- Work with local refurbishers to ensure they meet company and government refurbishing guidelines

Community Organizations

- Identify individuals in need of devices
- Provide basic setup assistance and technical support



Target Communities

- Use devices as incentive for communities to complete digital skills instruction or other programs that incorporate relevant training

MULTILINGUAL DIGITAL SKILL TRAININGS

> Technology has made significant advancements in recent years and the need for basic skills is compounded by the need for more advanced skills. It is more important than ever that we provide opportunities to gain basic skills and knowledge while also exploring emerging technologies.
>
> - Salt Lake County Library Digital Equity Plan

The goal of addressing digital literacy is to empower individuals with the skills to thrive in a digital economy and society. Digital literacy needs vary across residents' diverse needs, skills, identities, languages, disabilities, abilities, life stages, and experiences (Salt Lake City Digital Equity Policy, 2020). While digital literacy levels are generally increasing as technology becomes a part of daily life increasingly, there is a need to ensure no individual is left behind as a consequence of not having digital skills becomes pronounced.

Age, race, income, disability status, and educational level are critical predictors of lagging technology adoption. These characteristics underscore the groups with the highest digital literacy needs, including aging adults, low-income households, people with disabilities, minority small businesses and individuals, and individuals experiencing homelessness in MSD communities. Each of these communities has unique skillsets and barriers to receiving training that must be considered.

Barriers to Digital Skills Training

Across the MSD communities, access to multilingual digital skill training depends on residents' life stages. All K-12 students across the state, including MSD communities, receive robust digital skills training that prepares them to fully participate in a digital society. However, parents, adults, and seniors do not have the same access to systematic training and education.

While most digital skills training occurs informally through other family members and friends, a number of public and private organizations, including libraries, nonprofits, education institutions, workforce services, and companies, provide varying levels of digital skills training. Most digital skills training for adult learners consists of one-time workshops or classes. Across Salt Lake County Senior Centers, some, but not all, locations have regularly advertised classes or help hours for technology such as smartphones and tablets.

Alternate digital skills training models prioritize flexibility, personalization, and peer support. They include in-person or virtual one-on-one support, in-person or virtual learning circles, and asynchronous or live virtual courses.

Additionally, digital literacy education is increasingly becoming embedded and intertwined with other curricula and training related to numeracy, language literacy, health literacy, financial literacy, and job and life skills. All these changes have made digital skills training more accessible and supportive of residents' diverse needs, skills, identities, languages, disabilities and abilities, life stages, and experiences.

Currently, there is no federal, state, or local institution with a mandate to address digital literacy needs for adult learners. When one-time or grant funds have been available, such as CARES and ARP funds, digital literacy activities for adults and seniors have been usually overlooked, despite being an eligible activity.

With various organizations providing services that align with their expertise and capacity, there isn't a systematically maintained inventory of the different types of digital skills training available across MSD communities. Without such an inventory, it is difficult to know if there are redundant efforts across organizations or if specific needs are going unmet, and it is impossible to create an efficient and coordinated network of services to address digital connectivity needs (Franklin County Digital Equity Framework, 2021).

How does Web Accessibility Affect Broadband Adoption?

Web accessibility refers to how people of all abilities and disabilities perceive, understand, navigate, participate, and contribute to the digital world (W3C). Varying abilities and disabilities affect digital access, including visual, auditory, physical, speech, neurological, and cognitive impairments.

Web accessibility is a critical input in ensuring residents in MSD communities can equitably access the internet, especially those with limited digital skills. There is already an economic motivation in the private sector that drives the improvement of user experience (UX) and web accessibility. In contrast, federal agencies and contractors have a basis to adhere to Section 508 of the Rehabilitation Act of 1973.

Today, compliance with Section 508 includes the Web Content Accessibility Guidelines 2.0 AA (WCAG 2.0 AA) - the standard for websites, electronic documents, and software accessibility. While state and local governments are not required to adopt such accessibility guidelines, implementing WCAG 2.0 and its main principles (known as POUR) can enable more residents to be civically engaged in their communities and access public services. Within state and local government entities serving MSD communities, information technology (IT) staff is not solely responsible for ensuring government websites, forms, apps, and documents are accessible to residents. Meaningfully implementing principles from POUR requires coordination and effort from IT, Communications, and other staff or departments responsible for contributing digital content.

Web Accessibility Principles: POUR

Perceivable

Information and user interface components must be presentable to users in ways they can perceive.

Operable

User interface components and navigation must be operable.

Understandable

Information on the page and the operation of the user interface must be understandable.

Robust

Content must be robust enough for reliable interpretation by a variety of user agents, including assistive technologies

TECHNICAL SUPPORT & DIGITAL NAVIGATORS

Hardware & Software Technical Support

Currently, most individuals seeking technical support utilize a patchwork of options. Informal, free options include getting help from family and friends, educators and other school staff, county and city libraries, community organizations, or customer service representatives of device retailers. Not every method carries the same value, and not all individuals in these spheres have the capacity or patience to support affected individuals appropriately.

Professional technical support services are labor and cost-intensive in that they require either in-person or remote one-on-one support from skilled individuals. Many technical support issues related to hardware need an in-person interaction to adequately diagnose and troubleshoot the concern, which can result in additional costs associated with time and transportation. Most individual professionals charge $70/hour or more, while companies charge $100/hour or more for their IT support services. Several companies charge monthly or annual subscriptions for remote or in-person various levels of technical support. Additionally, for-profit technical support businesses may upsell other services or products that further make these services less trustworthy for many residents in MSD communities.

There are no free publicly advertised and available technical support options for hardware or software issues in MSD communities. While some residents have sufficient digital skills to troubleshoot the problems on their own or can afford to pay for a professional service, some lack skills or the resources to get help, resulting in additional barriers to meaningful digital participation.

Affordability and the Right to Repair

The idea behind the “right to repair” is that if you own something, you should be able to repair it yourself or take it to a technician of your choice. While this concept is more accepted with older cars and appliances, there is an ongoing policy debate at the federal and state levels about its extent to modern technologies. Advocates of the policy movement seek to make repair-related information available, make parts and tools available, and accommodate repair in the design. The overarching impact of such objectives includes increasing device longevity and cost savings for consumers and improved affordability of market technical support services.

Digital Navigation Services

Residents need help navigating different options for broadband, devices, digital literacy education, relevant software, apps, or software-related technical support. Trust has become essential in overcoming barriers to digital participation amidst an oversaturation of information, competing for offers, scams, and privacy- and cybersecurity-related threats. Digital navigators guide residents to overcome misconceptions and fears about sharing financial, health, or other personal identifying information and help them safely access resources and tools.

"Digital navigators meet with clients to assess their technology and baseline digital skills and follow up to make sure they meet their goals...They advise patrons how to use technology to fully participate in their communities, the economy, and society."

- Shauna Edson, Salt Lake City Public Library Digital Equity & Technology Manager

The model of digital navigator programs relies upon community-based organizations and their existing relationships of trust with the public or particular communities. Current digital navigator pilots have been funded through public and philanthropic partners to hire additional navigators as well as utilize existing staff and volunteers. Salt Lake City Public Library (SLCPL), in a partnership with University Neighborhood Partners, Catholic Community Services of Utah, and Suazo Business Center, launched one of the country's first pilot digital navigator programs through federal funding from the Institute of Museums and Library Services. As the federal funding for the Salt Lake City pilot ended, they began developing a sustainable model involving retaining newly hired navigators and training existing staff of libraries to provide digital navigation services.

There is no digital navigator program available for residents in MSD communities. SLCPL operates a neighboring program that MSD residents could access remotely. Salt Lake County Library Branches, Senior Centers, Public Health Centers, and System Navigator Program (SAMi) provide services that could also integrate digital navigator efforts. However, this would require additional coordination and training. Ultimately, a lack of affordable, publicly available options for digital navigation services remains, for vulnerable residents in MSD communities.

Need for Navigator Support

The International Rescue Committee (IRC) of Salt Lake City is one of the two resettlement providers in the state, resettling Afghan evacuees and their normal caseload of refugees. Their caseload has overwhelmed their digital inclusion program as they focus on setting every family up with discounted home internet, usually Comcast Internet Essentials, which the agency covers for the first six months upon arrival. While the Affordable Connectivity Program represents an opportunity to save refugee families up to $360 in internet costs annually, there isn't enough staff and translation support to assist hundreds of these families in navigating the enrollment and verification process. Other community and social service organizations serving vulnerable populations also lack this same capacity to provide this ongoing enrollment and verification support. (Photo Source: IRC)

EFFECIENT COORDINATION & COLLABORATION

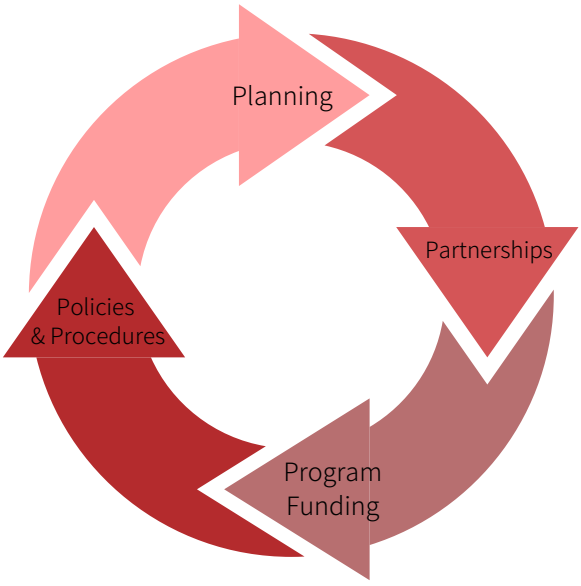
Robust digital connectivity efforts will not be sustainable without regional and local coordination.

There is a clear recognition of the need for more organized coordination of the digital connectivity work in MSD communities. To develop sustainable digital connectivity efforts, there must be adequate coordination during the stages of planning, partnerships, program funding, and policy and procedures.

ISPs play a prominent role in this digital connectivity coordination at the federal, state, and local level, including MSD communities, mainly related to broadband infrastructure. While ISPs are essential partners in this work, they represent a singular perspective. National organizations such as the Federal Communications Committee (FCC), National Digital Inclusion Alliance (NDIA), and the Schools, Health & Libraries Broadband Coalition advocate and address digital equity at the federal level. The Utah Broadband Center and Utah Communities Connect, a volunteer-led alliance of public and private stakeholders, both advocate and provide resources related to digital connectivity across the state. Ongoing coordination with these stakeholders is paramount since no government institutions at a county or regional level assume responsibility for assessing and planning current digital needs, guiding local investment, and identifying target policy initiatives on an ongoing basis.

Since the pandemic, many organizations in MSD communities are currently gaining a better understanding of digital connectivity needs for those they serve and seeking to get involved. Because the digital divide involves many unique barriers and communities, siloed work is inevitable. However, this work requires more robust coordination to communicate key updates, share best practices and resources, and collaborate with stakeholders to maximize impact.

Work is underway to increase coordination related to planning digital connectivity efforts in Utah under the leadership of the state broadband office and developing the state's first digital connectivity plan. Before the pandemic, Salt Lake City collaborated with partners from Utah Communities Connect to develop the state's first municipal digital equity policy in 2018. This plan was formally adopted in 2020 by the city council, and implementation of this plan will be carried out inside the newly formed Innovation Department. Provo City utilized Salt Lake City's policy and adopted a similar framework as an administrative transmittal. Under the leadership of South Salt Lake and Millcreek Promise Programs, both cities have convened an advisory group and jointly received funding through Wasatch Front Regional Council (WFRC) to develop a digital mobility plan for their municipalities. Aligning with national and state planning and collaborating with other cities and townships is paramount in ensuring cost-effective and high-impact collaboration and coordination.



Roles of Governments in Bridging the Digital Divide

Key Takeaways

Immediate coordination at a local and regional level is needed to apply for one-time federal and state grants and identify other funding sources to address immediate gaps and opportunities

Regional leadership and staffing are needed address ongoing digital divides through utilizing existing assets, agencies, and programs to advance digital inclusion ecosystem efforts

Focus Areas	Metro Townships		Regional		State	Federal
	Need Coordination	Need Funding	Need Coordination	Need Funding	Funding Available	Funding Available
Affordable broadband & infrastructure	X	X	X		X	X
Affordable device ownership programs			X		X	X
Multilingual digital skills training			X		X	X
Digital navigation services & technical support			X		X	X
Organizational structure and capacity for ongoing collaboration	X		X	X	X	X

Key Adequately Addressed | Address Immediately | Need to Address

Federal & State Funding Opportunities

Key Takeaways

This Historic Investment available through COVID-19 federal stimulus bills must both address immediate gaps while building capacity for sustainable digital connectivity programs. When a similar broadband and technology grant program was funded during the 2009 recession, most programs were discontinued when federal funds ended because they didn't adequately prepare and coordinate with regional, local, and private partners to identify long-term funding streams.

Regional coordination is paramount for convening partners, identifying community needs, communicating with state and federal agencies, and writing applications to successfully receive and utilize these funds for high-impact programs.

Funding Source	Program Type	Eligible Activities
Broadband Equity, Access, & Deployment (BEAD) Program $42.5 bil	Competitive grant program administered by states	i) Planning for the deployment of high-speed Internet, including conducting research, collecting data, outreach, and training ii) Deploying or upgrading Internet in unserved or underserved areas or improving service to community anchor organizations iii) Installing Internet and Wi-Fi in multi-unit residential buildings iv) Adoption and digital equity programs v) Workforce development programs and vocational training
Affordability Connectivity Program (ACP) ($14.2 bil)	Consumer subsidy to internet service providers	i) Up to a $30/month discount on your internet service ii) Up to a $75/month discount for households on Tribal lands iii) A low cost service plan that may be fully covered through the ACP* iv) A one-time discount of up to $100 for a laptop, tablet, or desktop computer with a co-payment of more than $10 but less than $50
Digital Equity Act (DEA) $2.75 bil	Competitive grant program administered by states Competitive grant program administered by federal govt	i) Develop, implement, and oversee digital equity plans ii) Make awards to other entities to help in developing digital equity plans iii) Improve the online accessibility and inclusivity of public resources iv) Implement digital equity plans and digital inclusion activities v) Provide digital literacy and skills education to covered populations vi) Facilitate the adoption of high-speed Internet by covered populations
Coronavirus State & Local Fiscal Recovery Funds (SLFRF) $350 bill	Direct allocations to states, counties, cities, and metro townships	I) Digital literacy and broadband adoption programs II) Programs that provide devices and equipment to access the internet III) Services that expand internet access without constructing new networks (e.g., expansion of public wi-fi networks or free wi-fi in public housing communities)

Digital Infrastructure Assessment

Benchmarks for MSD Communities come from FCC Form 477 and ACS 2019: 5 Year Estimates Data

MSD Communities	Households with no internet subscription (%)	Pop. w/o fixed broadband access of at least 100/20 Mbps**	Median advertised max download speed (Mbps)	Median advertised max upload speed (Mbps)
Copperton	4.51%	15.10%	60	10
Kearns	7.40%	0.12%	343	21
Magna	8.79%	2.79%	47	6
Unincorporated SLCo (West)	7.59%	7.77%	56	8
Brighton	4.01%	25.82%	40	2
Emigration Canyon	5.42%	47.03%	100	10
White City	7.22%	0.21%	70	9
Unincorporated SLCo (East)	4.34%	20.86%	61	6
Salt Lake County	8.1%	1.6%	100	20

*Data was available and collected at the census tract level. All tract(s) composed of each community were included. Where there was more than one tract within a community, an average of all tracts that contain community boundaries were included.

**100/20 mbps are used as a baseline speed based on the Biden Administration's views that a sufficiently high-speed plan offers download speeds of at least 100 Megabits per second, which is fast enough for a typical family of four to work from home, do schoolwork, browse the web, stream HD videos, and more (White House Fact Sheet, 2022).

Greater Salt Lake MSD Action Plan

Internal Recommendations to Develop Sustainable Digital Connectivity Efforts

Planning

Digital Divide Index Map: Host a statewide digital divide index map and maintain annually with updated datasets from FCC Form 477 and American Community Survey data to inform digital connectivity planning for MSD communities and other partners (IT/GIS)

Digital Infrastructure in CIP Planning: Establish a Capital Improvement Planning and Budget process that includes digital infrastructure as a program category and seeks to align efforts with other infrastructure and road improvement projects (Long Range Planning / Board of Trustees / Engineering)

Partnerships

Digital Infrastructure Advisory Workgroup: Facilitate or support workgroups for Brighton and Emigration Canyon with service providers, UDOT, Salt Lake County Public Works, and others active in digital infrastructure to coordinate on opportunities to improve fiber optic and fixed wireless internet access in communities without access to 100/20 mbps internet (MSD Leadership)

Coordination with State: Attend quarterly meetings organized by Utah Broadband Advisory Council and Utah Communities Connect to identify relevant best practices, partners, funding, and policy opportunities (MSD Leadership)

Policies & Procedures

Digital Connectivity Resources: Develop and regularly update Digital Connectivity pages for MSD communities that list relevant resources (Communications).

Business Outreach: Include a question at the end of business application that asks if their home internet access sufficient. If they answer no, they are redirected to resources page (Business Licensing).

Public Engagement Accessibility: Research and develop accessibility guidelines that address digital, language, and other barriers to participation in local government meetings (IT / Communications / Administrative Staff).

Program Funding

Grant Writing: Provide grant-writing services to the Metro Townships to fund projects identified from their General Plans, Advisory Workgroup, and and this study. In addition to ongoing grants, IIJA allocated $65 billion towards varying digital connectivity grants, representing once in a generation opportunity (Long Range Planning).

Earmark Broadband- and Cable-Related Tax Revenue: Utilize digital connectivity related tax revenues for ongoing digital connectivity planning and capacity building efforts (MSD Leadership).

BRIGHTON

Recommendations

Brighton leadership and residents have identified broadband infrastructure as the most critical component of digital connectivity to address. In three focus groups during the Brighton Natural Resource and Resilience Workshop, one resident noted that broadband infrastructure is vital for improving remote work and economic opportunity and keeping residents and families in Brighton long-term. Senawave is a fiber-based internet company with gigabit service in Brighton, Solitude, and proposed service in Forest Glen this summer. The company has expressed interest in serving the whole canyon. As several individual residents are engaged in siloed broadband infrastructure conversations, it is recommended to streamline these efforts into a digital infrastructure workgroup to identify public and private resources and assets that can more efficiently and equitably bring fiber optic internet to all residents.

Planning

- ☐ **Facilitate public engagement process** to further determine the need and feasibility of incorporating public high-speed internet and computer access at the old trash compactor site/future community center location

Partnerships

- ☐ **Convene Digital Infrastructure Workgroup** under direction of mayor and township council with service providers, UDOT, Salt Lake County Public Works, MSD Planning, and others to coordinate on short- and long-term efforts to improve fiber optic, cellular, and fixed wireless coverage

Policies & Procedures

- ☐ **Develop an ongoing transparent process** for residents to report fixed wireless or cellular dead zones or other digital connectivity challenges for Brighton leadership and their Digital Infrastructure Workgroup

Program Funding

- ☐ **Identify and allocate ongoing tax revenues** to address digital infrastructure projects to improve fixed wireless, cellular and fiber internet coverage

3

major fixed broadband service providers: Century Link, Utah Broadband, Senawave

26%

of residents don't have fixed broadband access of at least 100/20 (mbps)

4%

Households with no internet subscription (%)

63

of 81 test locations (78%) reported download speeds lower than 25 mbps in the state speed test

EMIGRATION CANYON

Recommendations

Emigration Canyon leadership has identified broadband infrastructure as the most critical component of digital connectivity to address. In addition to the two primary fixed broadband options, some residents use cellular (AT&T and Verizon), satellite, and fiber optic internet (Comcast) in certain areas. In a stakeholder meeting with Mayor Smolka and Councilman Pinon, it was identified that investing in additional repeaters for improved fixed wireless coverage would be one of the most cost-effective, short-term solutions. Whereas, as part of a long-term strategy, it is recommended to convene a digital infrastructure workgroup to identify public and private resources to more efficiently bring fiber optic internet to more parts of the canyon without creating an undue financial burden on residents.

Planning

- ☐ **Identify additional locations for repeaters** through a public engagement process to improve fixed wireless coverage for residents who do not have access to 100/20 mbps speeds

Partnerships

- ☐ **Convene Digital Infrastructure Workgroup** under direction of mayor and metro township council with service providers, UDOT, Salt Lake County Public Works, MSD Planning, and others to coordinate on improving fiber optic, cellular, and fixed wireless coverage

Policies & Procedures

- ☐ **Develop an ongoing transparent process** for residents to report fixed wireless or cellular dead zones or other digital connectivity challenges for Emigration Canyon leadership and the Digital Infrastructure Workgroup

Program Funding

- ☐ **Utilize American Rescue Plan Act Funds** to address immediate digital connectivity gaps including investing in additional repeaters for improved fixed wireless coverage, focusing on areas without access to 100/20 mbps

2

major broadband service providers: Century Link and Utah Broadband

47%

of residents don't have fixed broadband access of at least 100/20 mbps (FCC)

5%

Households with no internet subscription (%)

25

of 37 test locations (67%) reported download speeds lower than 25 mbps in the state speed test

WHITE CITY

Recommendations

Mayor Flint of White City identified User-Friendly Online Content & Websites and Digital Skills & Online Safety as the most critical components of digital connectivity to address. In the socio-economic analysis of all MSD communities, White City has the highest percentage of residents with a disability (15.7%) and the second-highest percentage of residents above 65 years old (16.6%). Recognizing the unique barriers these groups face with participating in a digital world, the recommendations are focused on ensuring digital literacy skills training, technology support, and digital content is easy to find and accessible.

Planning

- ☐ **Convene conversations with Sandy Library** on how to make digital literacy training and technology support more accessible to residents, including seniors, persons with disabilities, and other homebound residents

Partnerships

- ☐ **Partner with local schools and churches** to identify ongoing opportunities and one-time events to provide outreach and enrollment support for the Affordable Connectivity Program

Policies & Procedures

- ☐ **Implement accessibility guidelines for metro township meetings and website** to help residents with barriers, including limited mobility, speech or digital literacy skills, more easily participate in meetings and access local government communication and resources

Program Funding

- ☐ **Utilize funds from local internet providers** including from broadband or cable-related license revenues as well as from their community affairs teams for digital connectivity projects

3

major fixed broadband service providers: Century Link, Xfinity, Google Fiber (later in 2022)

0.2%

of residents don't have fixed broadband access of at least 100/20 (mbps)

7%

Households with no internet subscription (%)

5

of 13 test locations (38%) reported download speeds lower than 25 mbps in the state speed test

COPPERTON

Recommendations

Ranuta Alder, in her capacity as Chair of the Copperton Planning Commission, identified all five components of digital connectivity as most relevant for her community: Broadband Infrastructure & Enrollment, Devices, Digital Skills & Online Safety, User-Friendly Online Content & Websites, Technical Support. In the Amenities and Priorities Survey conducted in 2020, a majority of respondents (28 of 54 Copperton residents) indicated they would be most excited to see a "community center and library." Because Copperton is more than ten minutes away from the nearest library (Bingham Creek Library), it is recommended that Copperton begins discussions with Salt Lake County Library to understand the feasibility of such an opportunity. Additionally, Copperton is a uniquely close-knit community where all residents live within a close geographical distance, making it easier to communicate with residents in person and digitally. This is a significant asset that can be used to ensure every resident has the tools and support they need to participate in a digital society.

Planning

- ☐ **Engage Salt Lake County Library Services** on how the Copperton community could partner with the County Library to identify an existing site to bring limited services such as public WiFi, devices, technology support, and small collection

Partnerships

- ☐ **Collaborate with churches and Lions Club** to identify opportunities to connect residents with free 100/20 mbps speed internet through the Affordable Connectivity Program and free/low-cost devices through local refurbishers

Policies & Procedures

- ☐ **Implement accessibility guidelines for metro township meetings and website** to help residents with barriers, including limited mobility, speech or digital literacy skills, more easily participate in meetings and access local government communication and resources

Program Funding

- ☐ **Utilize funds from local internet providers** including from broadband or cable-related license revenues as well as from their community affairs teams for device and digital literacy-related projects as needed

2
major broadband service providers: Century Link, Xfinity

0%
of residents don't have fixed broadband access of at least 100/20 (mbps)

5%
Households with no internet subscription (%)

0
of 2 test locations (0%) reported download speeds lower than 25 mbps in the state speed test

MAGNA

Recommendations

Mayor Peay of Magna identified broadband infrastructure and enrollment, and technical support as the most critical components of digital connectivity to address. In the two surveys conducted for Magna residents, a majority of residents expressed the need for additional competition through another fiber-optic internet provider. The recent announcement that Magna and Google Fiber are working towards a license agreement directly addresses this concern of residents. Additionally, multiple residents mentioned how internet service interruptions and cellular service dead zones are ongoing challenges. This initial set of recommendations represents a path to address immediate opportunities and gaps while developing a foundation for sustainable efforts in Magna.

Planning

- ☐ **Research community need and locations** that could provide access to public WiFi, devices, and technology support in addition to the library through a public engagement process

Partnerships

- ☐ **Collaborate with Magna Library** to identify ongoing opportunities and one-time events to provide outreach and enrollment support for the Affordable Connectivity Program

Policies & Procedures

- ☐ **Implement accessibility guidelines for public meetings** to address barriers including limited English language and digital literacy skills needed to participate in local government and community meetings

Program Funding

- ☐ **Earmark license fee revenues from ISPs** and other broadband or cable-related revenues for digital connectivity projects and sustainable efforts to address digital gaps including wireless dead zones

2

fixed broadband service providers: Century Link, Xfinity

2.8%

of residents don't have fixed broadband access of at least 100/20 (mbps)

9%

Households with no internet subscription (%)

10

of 28 test locations (39%) reported download speeds lower than 25 mbps in the state speed test

UNINCORPORATED SALT LAKE COUNTY

Recommendations

Councilwoman Stringham, who is the MSD Trustee representing unincorporated Salt Lake County, identified broadband infrastructure as the most critical component of digital connectivity to address. For this study, census tracts were analyzed on the West and East side- the unincorporated area along the Oquirrh Mountains west of I-15 and the unincorporated area along the Wasatch Range east of I-15. For both sides, particularly the West, where there are more new housing developments, the Salt Lake County West General Plan Draft recommends that "internet fiber and broadband should be incorporated into utility corridors when feasible" to connect residents efficiently. For existing West and East side residences, mainly where homes have been built in more sparsely populated areas and/or mountainous terrain, the County and MSD can play a more active role in convening conversations with internet service providers and supporting robust last-mile solutions (fiber and fixed wireless). Digital communication and up-to-date digital content from the MSD and Salt Lake County, along with digital literacy skills training for older residents, are critical components to ensure residents in unincorporated areas remain connected with the County and its services.

Planning

- ☐ **Research dig-once policies and codes** such as code 72-7-108 which established a dig-once best practice for UDOT projects, that can reduce infrastructure costs and decrease wait time for bringing fiber-optic internet to residences

Partnerships

- ☐ **Identify Staff for Regional Coordination** at the MSD and/or County to serve as a point of contact with internet providers and other stakeholders to efficiently address ongoing digital connectivity gaps and opportunities for residents in unincorporated areas

Policies & Procedures

- ☐ **Develop an ongoing transparent process** for residents to report fixed wireless or cellular dead zones or share other digital connectivity challenges to the County and MSD

Program Funding

- ☐ **Utilize County ARP & BEAD Program Funds** to address immediate gaps including investing in additional repeaters for improved fixed wireless coverage and last-mile connections for residents with demonstrated need in high cost per service areas

West Unincorporated Area

8%

of residents don't have fixed broadband access of at least 100/20 (mbps)

4.5%

of the population are ages 65 and over. Age is significant predictor of broadband adoption.

East Unincorporated Area

20%

of residents don't have fixed broadband access of at least 100/20 (mbps)

20%

of the population are ages 65 and over. Age is significant predictor of broadband adoption.

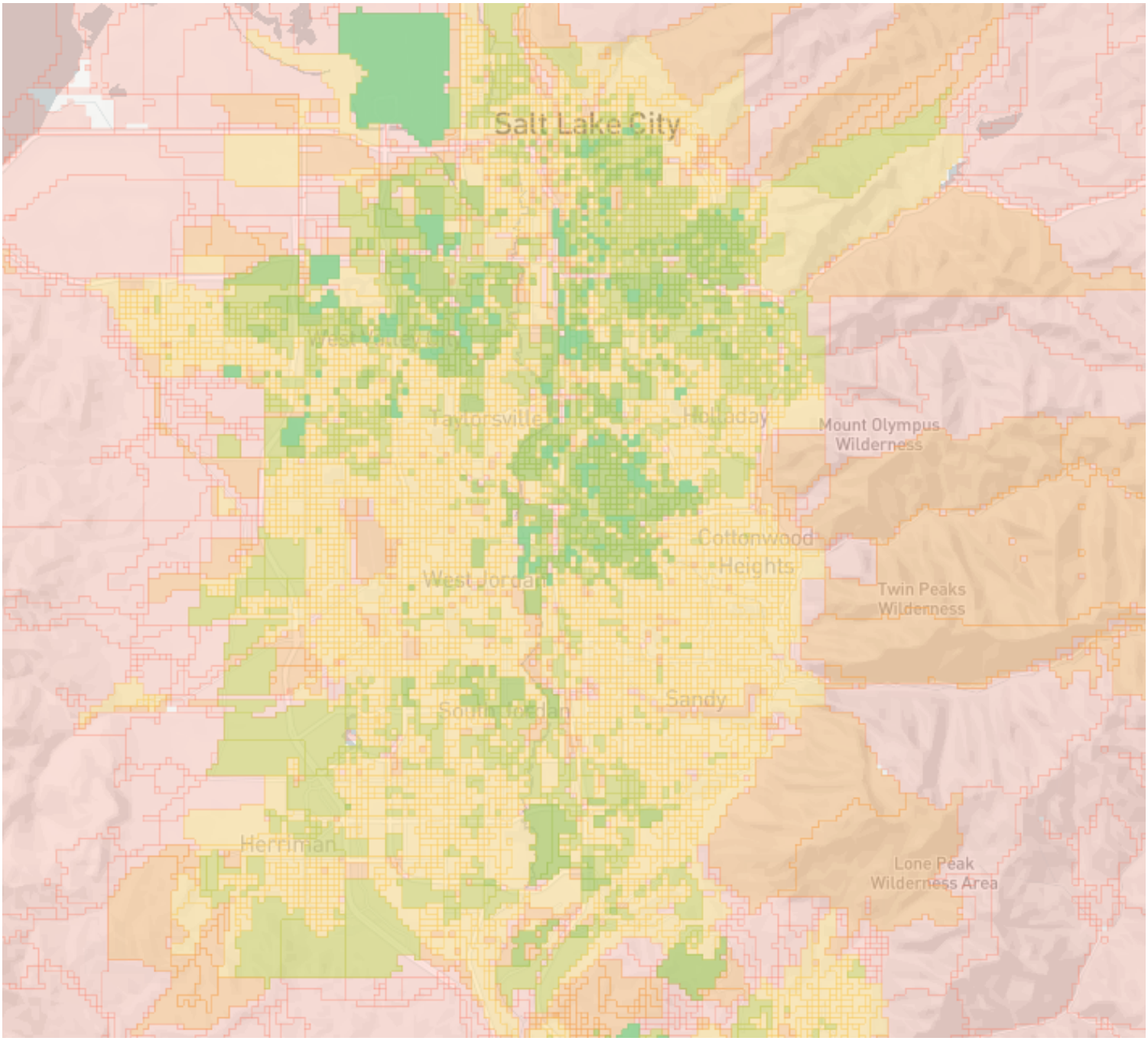
Ecosystem Recommendations

Based on the Digital Connectivity Assessment, these are systemwide recommendations that the MSD and its communities and metro townships should prioritize and support their advancement. These priorities require additional collaboration and investment from public partners, including but not limited to Salt Lake County and Salt Lake County Library Services.

Priority Recommendations	Ecosystem Needs
 **Affordable Connectivity Program Outreach** (SLCo System Navigator Program/Other Partners - Utilize Existing Staff) a. Provide updated outreach materials, training on the program, and enrollment events for Affordable Connectivity Program, Lifeline, and other affordable broadband options with public and private sector partners	Affordable broadband options
 **Refurbished Device Initiative** (Other Public/Private Partners - 1 FTE) a. Create ongoing channel of devices from MSD and local governments to be refurbished by local nonprofits and given to residents and organizations b. Develop grant program and tie in requirement for organizations to offer digital literacy training tailored for recipients and target communities	Affordable device ownership programs Multilingual digital literacy and skill trainings
 **Digital Navigator Program** (SLCo Library - 1 FTE - Already Funded) a. Offer remote and language-accessible digital literacy training, troubleshooting, and broadband enrollment support for Salt Lake County & MSD communities	Hardware and software technical support Digital navigation services to guide residents
 **Regional Consortium for Governments** (MSD - Utilize existing or new 1 FTE) a. Identify staff/volunteer capacity or funding for position(s) to serve as points of contact on digital connectivity for MSD, Metro Townships, Municipalities, and Relevant County Agencies for local workgroups and regional consortium efforts to coordinate efforts to address digital divides	Coordination with stakeholders to address digital divides

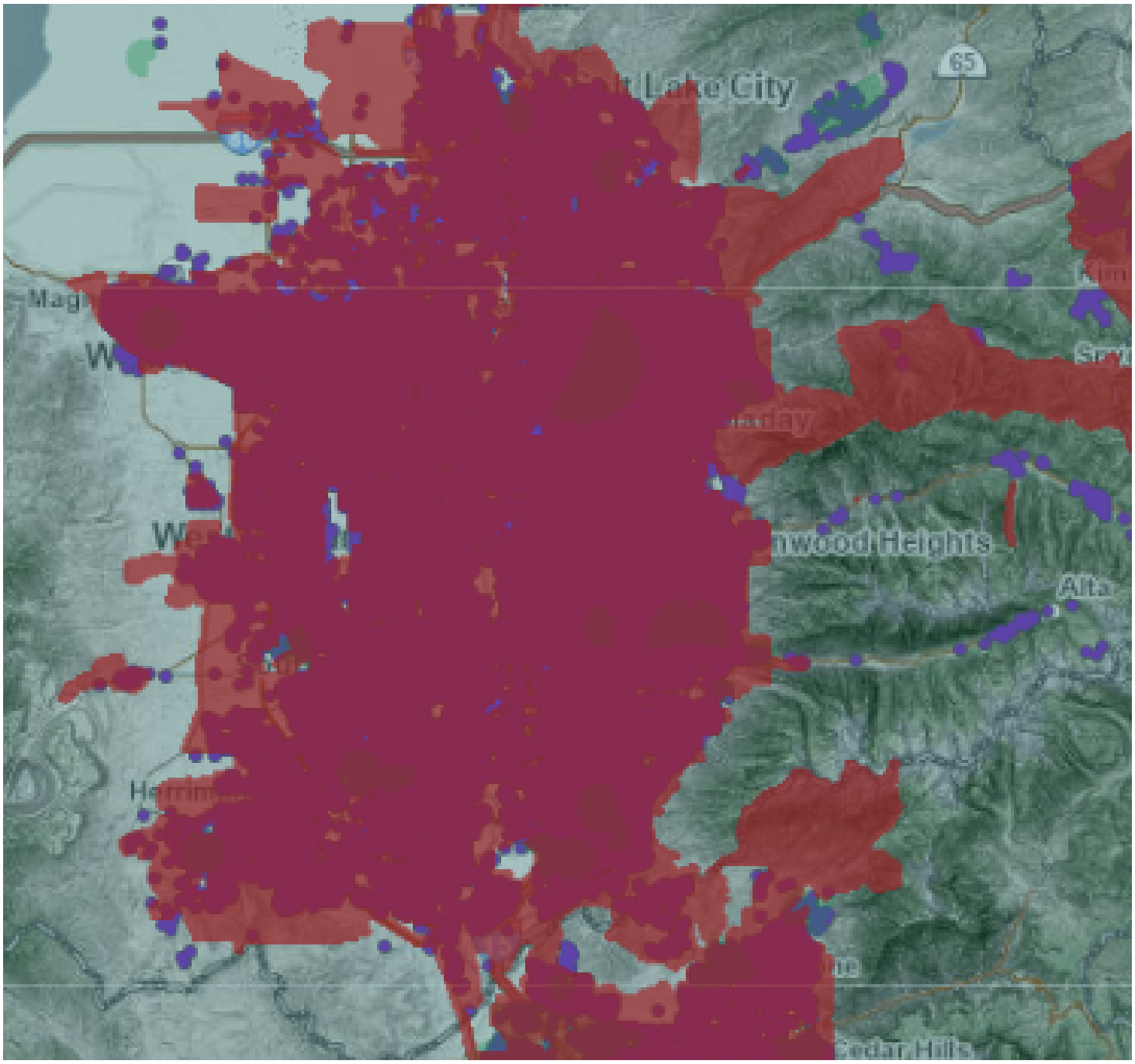
Appendix A

Number of Wireline Internet Service Providers in Salt Lake County (BroadbandNow)



Appendix B

Access to 100/20+ Mbps Internet in Salt Lake County (Utah Residential Broadband Map)



Key

Wireline Coverage

Fixed Wireless Coverage

Address Point

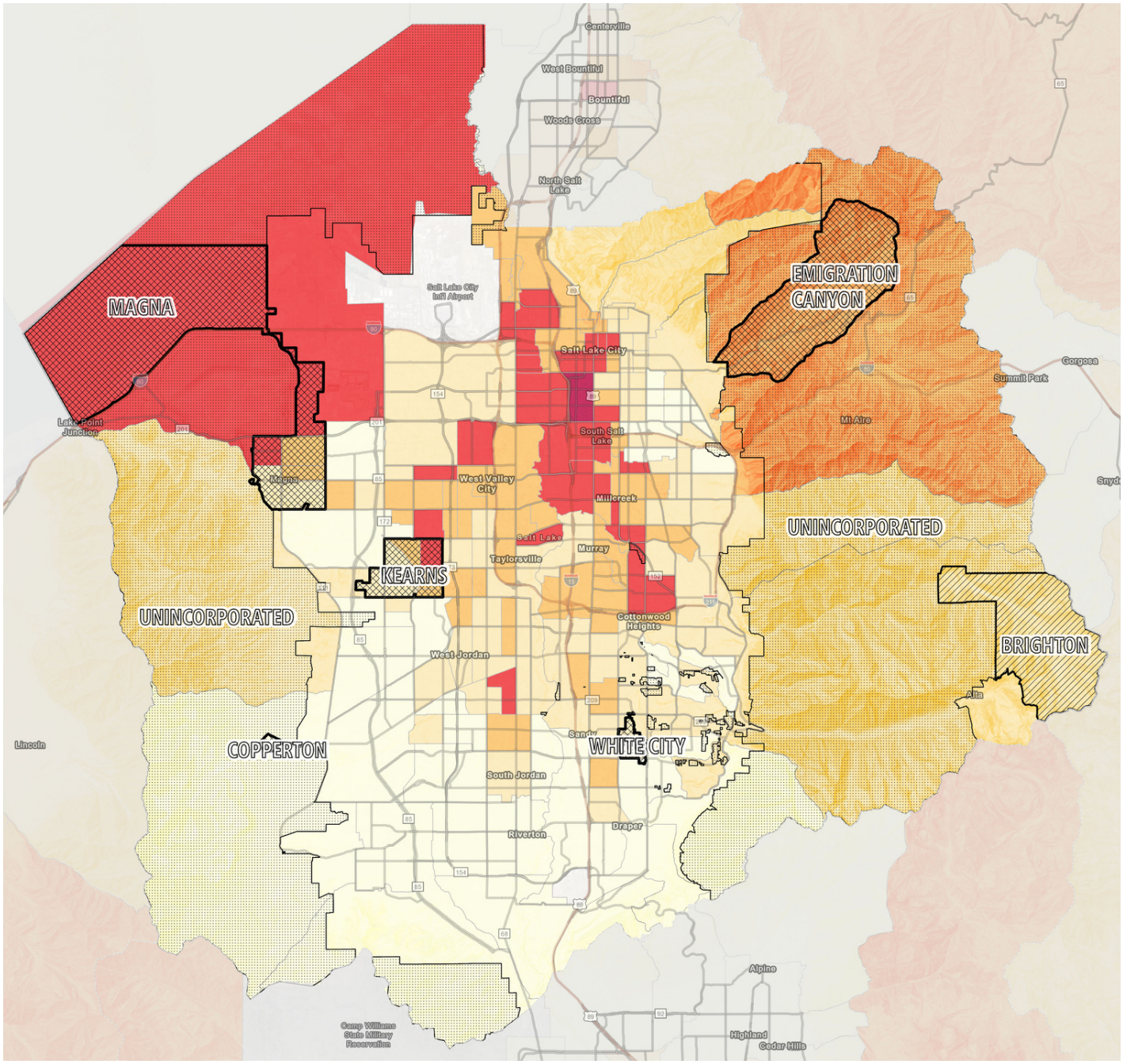
Appendix C

Reasons Individuals Don't Have Subscribe for Home Internet (Horrigan, 2020)

Survey	National Tele-communications & Information Administration (2015)	Pew Research Center (2019)	California Emerging Technology Fund (2019)
Primary Reason	Don’t need/Not interest (55%)	Cost – either service is too expensive (50%)	Cost – too expensive, no computer or smartphone (51%)
Secondary Reason	Too expensive (24%)	Smartphone does everything they need (45%)	Can connect from another place (31%)
Tertiary Reason	No or inadequate computer (7%)	Other access options outside the home (43%)	Internet is not available where I live (21%)
Fourth Reason		Cost of computer is too expensive (45%)	Not comfortable with a computer or going online (24%)

Appendix D

Digital Divide Index Map for MSD Communities in Salt Lake County (Gallardo, 2020)



Key for Digital Divide Index Scores	0 - 10.8	10.8 - 18.2	18.2 - 27.1	27.1 - 42.7	42.7 - 100

Each census tract has an index value from 0 to 100, where 100 indicates the highest digital divide

Appendix E

Digital Divide Index Map: Infrastructure Scores (Gallardo, 2020)

MSD Communities	Census Tracts	INFA Score* (0-100)	Analysis Limitations
Kearns	1135.26, 1136, 1137.01, 1137.02, 1138.01, 1138.02, 1138.03	6.74	
White City	1126.04, 1128.12	7.09	
Unincorporated SLCo (East)	1101.03, 1101.04, 1101.02, 1128.15	7.60	This area includes unincorporated areas along the Wasatch Range, but also along the eastern edges of Millcreek, Holladay, Cottonwood Heights, Sandy, and Draper. This area also doesn't include all unincorporated islands inside of Sandy, Cottonwood Heights, and Murray.
Brighton	1101.02	7.69	Brighton's census tract includes parts of Sandy, Cottonwood Heights, and Unincorporated East Side where is significantly better broadband infrastructure.
Copperton	1131.05	7.70	
Magna	1139.06, 1139.07, 1139.03, 1139.04, 1139.05	9.12	
Unincorporated SLCo (West)	1139.06, 1139.07, 1131.05, 1151.06	9.20	
Emigration Canyon	1101.03	12.15	

*The infrastructure score, which represents half of Digital Divide Index score, ranges in value from 0 to 100, where 100 indicates the highest digital divide. Data was available and collected at the census tract level. All tract(s) composed of each community were included. Where there was more than one tract within a community, an average of all tracts that contain community boundaries were included.

Appendix F

Digital Divide Index Map: Socioeconomic Scores (Gallardo, 2020)

MSD Communities	Census Tracts	SE Score* (0-100)	Analysis Limitations
Copperton	1131.05	18.74	Copperton's census tract includes part of the Unincorporated West Side and Herriman where there are vastly different demographics.
Emigration Canyon	1101.03	30.08	
Unincorporated SLCo (West)	1139.06, 1139.07, 1131.05, 1151.06	30.49	
Unincorporated SLCo (East)	1101.03, 1101.04, 1101.02, 1128.15	32.53	
Brighton	1101.02	32.84	
White City	1126.04, 1128.12	37.94	
Magna	1139.06, 1139.07, 1139.03, 1139.04, 1139.05	43.14	
Kearns	1135.26, 1136, 1137.01, 1137.02, 1138.01, 1138.02, 1138.03	51.73	

*The socioeconomic score, which represents half of the Digital Divide Index score, ranges in value from 0 to 100, where 100 indicates the highest digital divide. Data was available and collected at the census tract level. All tract(s) composed of each community were included. Where there was more than one tract within a community, an average of all tracts that contain community boundaries were included.