2018

Technology Access and Adoption Study

City of Seattle

Dear Seattle Residents,

We know that access to technology is a race and social justice issue. As we work to create more opportunities for youth through major investments in workforce readiness programs and free college for all Seattle public high school graduates, we must also strive to make sure that all our communities have access to high-speed internet and the skills they need to compete in our constantly-connected world.

For the fifth time since 2000, the City of Seattle has conducted a Technology Access and Adoption study to understand how our city's residents are using information and communications technology, and uncover the barriers that prevent true digital equity in Seattle. This year, we heard from 4,315 Seattle residents that reflect our city's broad diversity. Households were randomly selected to participate, and for the first time, we can share their responses both at overall population and City Council district levels.

Here's the good news: Seattle residents are more connected than ever. 95% of households report internet access in the place where they live (an increase of 10% since 2014). Additionally, we have seen growth in internet-connected device ownership, especially smartphones, with 98% of residents owning at least one device in their home.

However, we are also seeing significant gaps in access, particularly in low-income and insecurely-housed populations. People living in these communities are five to seven times more likely to lack adequate access to the internet than the average Seattle resident. Overall, whether it is cost, access or skills, most residents report some level of stress or limitation in using digital technology.
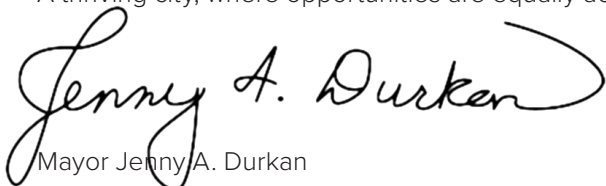
In 2018, we addressed some of these concerns by

- Providing access to free public Wi-Fi, computers and digital skills training at community centers and libraries;
- Funding 12 new projects through the Technology Matching Fund, while 14 additional projects (awarded in 2017) completed their work;
- Circulating internet hotspots to Seattle Public Library cardholders and equipping tiny house villages with internet;
- Awarding laptop computers to residents attending digital skills classes;
- Enrolling over 300 new subscribers to the Wave low-cost internet program;
- Producing 10 digital learning and community engagement events with low-income housing communities, Seattle Public Schools and CISC;
- Facilitating free internet connectivity, via Comcast and Wave, to over 200 non-profit organizations; and
- Convening community-based providers to launch a digital equity network in King County.

More and more, it is becoming difficult to survive in our modern world without high-speed internet access and the skills to navigate the digital world. Applying for jobs, finding healthcare, accessing childcare, even communicating with our loved ones in times of need — all these tasks have moved online, making internet access and digital skills more critical than ever.

That is why I am committed to making sure that Seattle continues to lead the way on digital inclusion. We need the support of the entire community, and I invite both the private and public sectors to join us in this important work. Being the city that invents the future means leaving nobody behind and helping those most impacted by digital inequity catch up and keep up.

A thriving city, where opportunities are equally accessible, depends on it.

Jenny A. Durkan

Mayor Jenny A. Durkan

City of Seattle

Table of Contents

Background and History

The City of Seattle believes that striving for digital equity and increasing access to technology improves the quality of life in our city. The Technology Access and Adoption Study has been commissioned since 2000. The 2018 survey marks the fifth time this research has been conducted. These findings help the City of Seattle understand how Seattle residents use technology and the internet. The study also uncovers barriers that prevent residents from utilizing digital technologies, which then informs the City's work to ensure access, services and resources necessary for all Seattle residents to succeed in life.

The results of this research effort provide a comprehensive view into Seattle residents' access and adoption of internet and technology. Key metrics are compared to the City of Seattle 2014 Information Technology and Adoption in Seattle Report as well as to the 2017 American Community Survey (ACS) for Seattle on digital device ownership and adoption and internet connectivity.

Though this is the fifth time this research has been conducted, 2018 brought about some important changes to the approach as well as the objectives and question lines. Past surveys also examined barriers, but the 2018 survey provides more depth to the analysis of connectivity levels, as well as attitudes, perceptions, frustrations, and skill level when it comes to digital engagement. The goal was to present a holistic view of digital engagement and explore not only adoption of devices and access percentages, but also the reasons for those levels of adoption.

For the purposes of this study, the researchers have chosen to use the term digital engagement to characterize a level of involvement and capacity by individuals and households to use digital information and communication tools to perform daily activities, including civic and community participation.

Research Hypotheses and Objectives

Hypotheses set forth prior to the start of this research effort included:

- Digital connectivity among Seattle residents is not maximized. Though access and device adoption is nearing 100%, an understanding of the reasons why residents are not fully engaging is lacking.
- The lack of engagement may be due to inequitable access to the internet, devices, or skills.
- Increased digital engagement increases the well being of the City of Seattle.

Research objectives included:

- Quantify and describe Seattle's level of digital engagement, digital divide, and level and source of digital inequity.
- Explore the linkages between digital inequity and socioeconomic, demographic, and psychographic factors.
- Determine digital equity and digital connectedness segments within the City of Seattle population. Understand the interrelationships between variables and factors that contribute to the digital divide and explore how these contributory factors have changed since 2014.
- Identify opportunities for targeted and strategic interventions to increase digital engagement levels at a faster pace than that which would occur naturally.

Research hypotheses and objectives were discussed and refined through an iterative set of community leadership meetings, discussions with the City's Community Technology Advisory Board (CTAB), and community partner interviews which took place between January and March of 2018.

Methodology and Sampling

Residents were interviewed in a variety of ways, with the primary methodology being a mail survey of residents randomly selected using a stratified sampling plan based on Council District. The goal of the stratified sampling plan was to obtain a reliable number of responses from each Council District so that analysis could be performed at this level with a high degree of statistical confidence. A total of 19,500 surveys were mailed to the general population. Of those 19,500 surveys, 15,000 were randomly selected, with approximately 2,143 per Council District being delivered. An additional 3,000 surveys were sent to targeted low-income census tract households (census tracts where 60% or more of the households have an income of less than $75K per year according to the 2016 ACS), and 1,500 surveys were delivered to households within Seattle Housing Authority (SHA) owned apartment and multi-dwelling units.

Residents were invited to respond to the survey either online via a web survey, or by filling out a printed questionnaire and returning it via a provided postage paid envelope. For those who required assistance in accessing or completing the questionnaire, a telephone number was provided. The survey was available in both English and Spanish.

Working with the Seattle Public Schools (SPS), a second set of invitations to complete the survey online was sent via email to each parent or guardian where email addresses were available in the Seattle Public School's database.

Finally, several individuals from the City of Seattle Information Technology Department visited two City sanctioned tiny house villages, where they distributed surveys and encouraged/assisted residents of these villages to complete a survey.

A total of 4,315 survey responses were collected and included in the final data set. Response rates varied, with the highest response rate received from the general population of randomly selected residents.

	Invitations (n)	Responses (n)	% Response Rate
General Population	15,000	2,937	20%
Targeted Low-Income Household (60%+ low-income in census tract)	3,000	385	13%
Seattle Housing Authority Household	1,500	274	18%
Seattle Public Schools Parent or Guardian (email only)	29,865	669	2.2%
Tiny House Village Resident	--	50	--
Total	**49,365** Invitations Sent	**4,315** Total Responses	**8.7%** Avg. Response Rate

INTRODUCTION AND OVERVIEW

Analysis was completed on the total sample as well as by key subgroups such as Council District and other populations of interest. The overall confidence interval of the study results is 1.5% (e.g. percentages and proportions cited are accurate within a range of +/- 1.5%). The total sample size and associated confidence interval of each Council District is as follows:

	Number of Responses	Confidence Interval
Council District 1	**632**	±3.9%
Council District 2	**610**	±4.0%
Council District 3	**527**	±4.3%
Council District 4	**582**	±4.1%
Council District 5	**775**	±3.5%
Council District 6	**649**	±3.9%
Council District 7	**476**	±4.5%

To meet the project study mandate of representing all residents, including those that may have unique needs or be under-served or under-connected, responses were collected from a wide range of residents including the following groups:

Weighting

To correct for deliberate over-sampling of certain key subgroups, a sample balancing or weighting algorithm was applied to all data points. This algorithm balances the data back to the demographic proportions that exist in the Seattle population, so that when examining the total population metrics, they are accurate and projectable to the Seattle residency at large.

- The survey instrument sent to households collected data on the **individual** responding to the survey as well as the entire **household**. In the latter case, the individual responding was asked to provide data for their entire household. To account for this difference in perspective, each data point is classified as describing a household characteristic (e.g. household size and income) or an individual characteristic (e.g. age, gender, and ethnicity).

- Two different weights were developed and applied—one based on household characteristics and one based to individual characteristics. All data presented here is weighted. Base sizes/sample size groups are unweighted. A full description of the weighting algorithms can be found in the Technical Report.

	Number of Responses	Confidence Interval
Primary Language Other than English	**244**	±6.3%
Race/Ethnic Minorities	**931**	±3.2%
Older Adult (65 years old and older)	**879**	±3.3%
Low-Income (At or below 135% of Federal Poverty Level)	**412**	±4.8%
Residents of Multi-Dwelling Units (MDU)	**1,543**	±2.5%
Household Member Living with Disability	**435**	±4.7%
Child Under 18 in Household	**1,454**	±2.6%

In addition, 56 interviews were conducted with residents who characterize their current housing situation as homeless or insecure. The majority of these 56 residents received and filled out surveys at tiny house villages visited by City of Seattle staff for the express purpose of encouraging participation in this research. The sample size (n56) of this population is too small to provide reliable results; however, the data does suggest that homeless and insecurely housed residents are much less likely to have a source of reliable internet. The research team recommends further research with this specific population.

City of Seattle

Rates of Access

Seattle households are significantly more connected than five years ago.

Ninety-five percent (95%) of Seattle households have a way to access the internet in their home through wired or wireless services. This is a significant increase in internet access compared to 2013, when only 85% of Seattle residents reported a way to access the internet.

The 2018 research shows that nearly all (98%) of Seattle households have at least one type of internet capable device in the home. The average household has 3.4 types of internet capable devices in the home (e.g. laptop, desktop, smartphone, internet capable gaming console, tablet, or voice activated device).

Some significant differences in access to the internet and devices continues for certain populations.

Home internet access in Seattle has increased from

85% TO 95%

over the past five years.

The City is mobile.

The adoption of internet capable cellphones and other mobile devices is increasing year over year. At the same time, we do not see any drop off in the presence of laptops/desktops that are connected to the internet in the home.

While 89% of those responding in 2013 had mobile phones, only 58% of those were smartphones (mobile phones that could be connected to the internet). This number has increased significantly in 2018, with 93% reporting the ownership of an internet capable mobile phone.

95%
of Seattle households
have internet access
in their home

98%
of Seattle households
have an internet
capable device
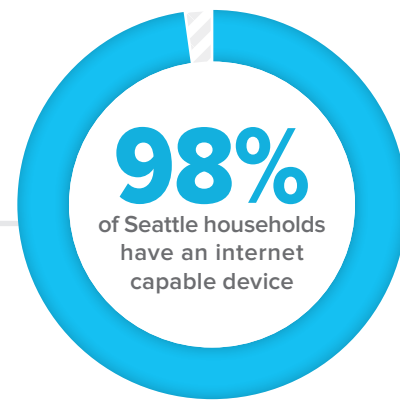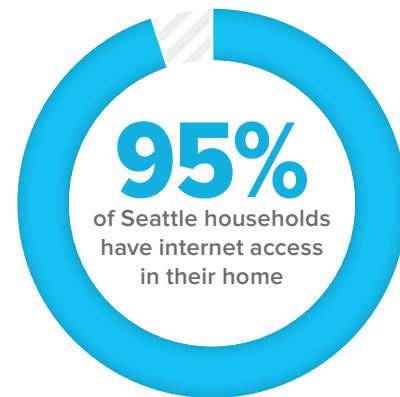
93% Have a mobile or smartphone
(up from 89% in 2013)

92% Have a desktop or laptop
(up from 88% in 2013)

64% Have a tablet or other portable
device (up from 44% in 2013)

26% Have an internet capable
gaming console

23% Have a voice activated device
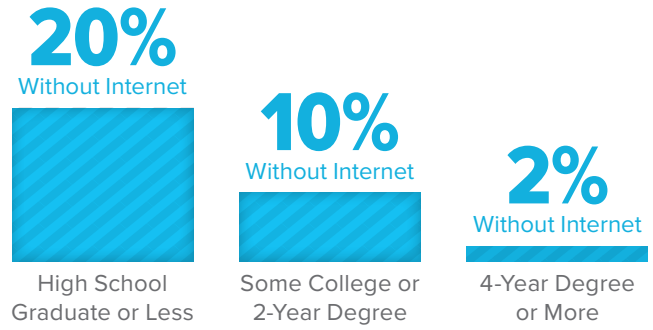
Digital Equity Differences

There are significant differences in access rates across demographic groups. Key risk factors for lack of home internet access include:

- Living in poverty (at or below 135% of the Federal Poverty Level): 5 times more likely not to have internet access.

- Household member living with disability: 3 times more likely not to have internet access.

- Primary language other than English: 2 times more likely not to have internet access.

- Older adults (65 years of age plus): 1.8 times more likely not to have internet access.

- Single adult households (may or may not have children): 1.8 times more likely not to have internet access.

- Non-White residents (members of race or ethnic minorities): 1.6 times more likely not to have internet access.
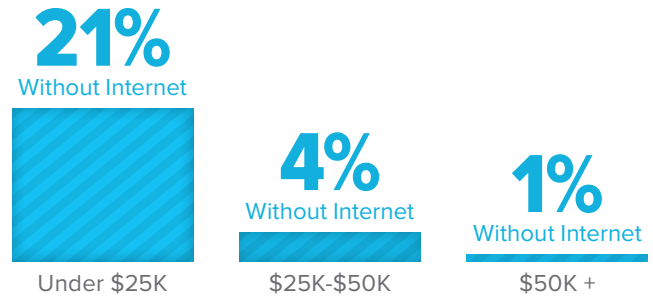
Education level correlates directly with internet access. One out of five residents without any college have no internet access in the home.

Internet access rates are lowest for households with incomes below $25,000. The research also shows that once a household's income reaches $50,000 (still far below the city's median income of $78,816), internet access no longer correlates with income.

Internet Access by Education

20%
Without Internet

High School Graduate or Less

10%
Without Internet

Some College or 2-Year Degree

2%
Without Internet

4-Year Degree or More

Internet Access by Income

21%
Without Internet

Under $25K

4%
Without Internet

$25K-$50K

1%
Without Internet

$50K +

"Access to the internet has become integral to participating in modern society and nobody should feel they can't access it because they lack funds or live in a bad neighborhood."

–Seattle Resident

Internet Access by Demographic

With Internet Access ◄ ► **Without Internet Access**

	With Internet Access	Without Internet Access
Living in Poverty	**75%**	**25%**
Household Member Living with a Disability	**85%**	**15%**
Primary Language Other than English	**90%**	**10%**
Older Adults (65 years +)	**91%**	**9%**
Single Adult Households	**91%**	**9%**
Race/Ethnic Minorities	**92%**	**8%**

City of Seattle
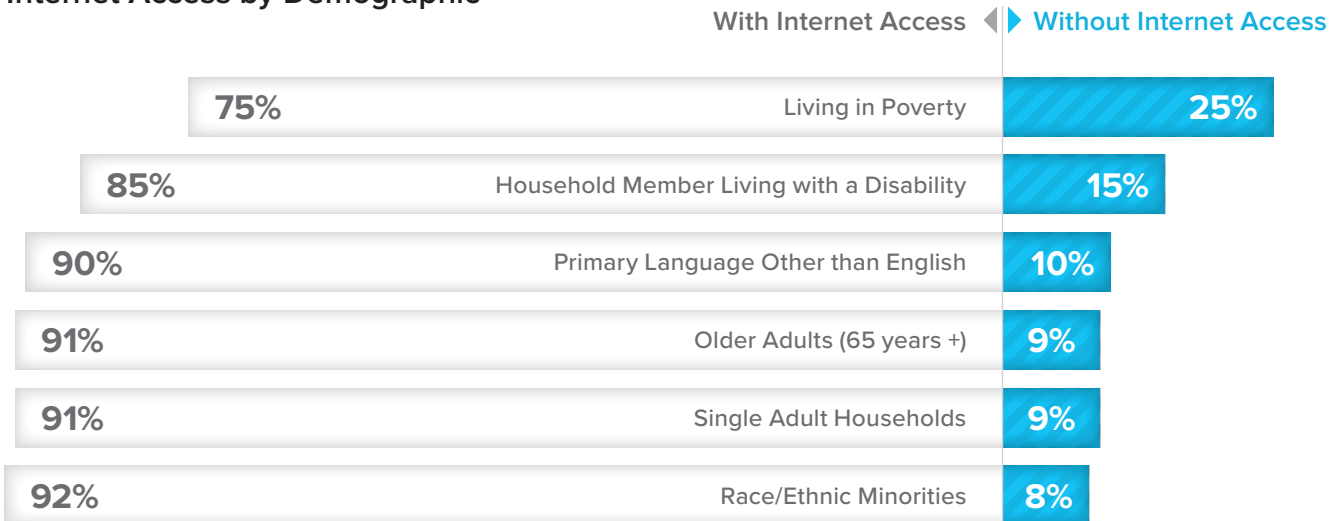
Internet Devices in Household by Income

Legend: Smartphone or mobile phone | Computer | Tablet | No Device in Household
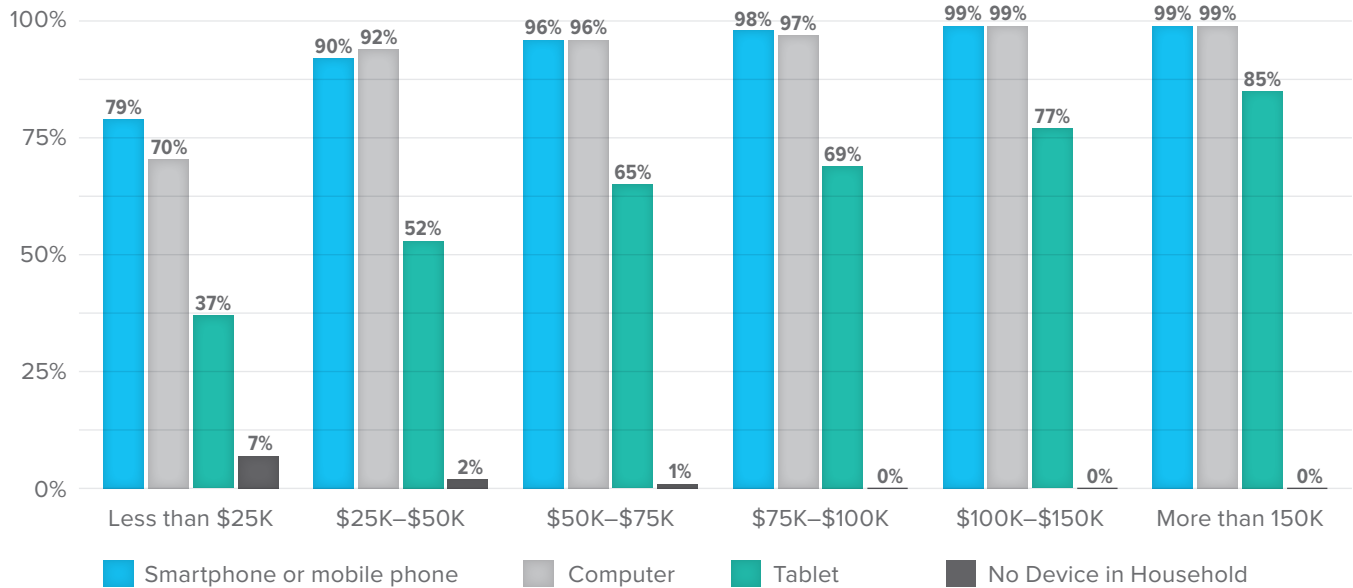
21% of households with incomes under $25K do not have a mobile or smartphone.

10% of households with incomes between $25K and $50K do not have a mobile or smartphone.

In addition to differences in device ownership by income, there are other differences found across demographic groups. Full details on these differences can be found in the Technology Access and Adoption Technical Report.

The research shows particularly high rates of access among households with one child or more. Nearly all Seattle households with school aged children report a way to access the internet in their home.

Fully Served Groups

99% Of households with incomes of $50K or more have internet access

98% Of households with child(ren) aged 17 or younger have internet access

98% Of households with child(ren) who attend Seattle Public Schools have internet access

Income disparity also exists when it comes to access to internet capable devices in the home. The number of types of internet enabled devices in the household increases in step with household income. As with internet access, the gaps occur most notably among households in the two lowest income strata (under $25K and $25-$50K).

Is there a digital equity gender gap?

There is no significant digital equity gender gap in the City of Seattle, with all genders being equally likely to have access to the internet.

96% Of women have access to the internet

97% Of gender non-conforming have access to the internet

95% Of men have access to the internet

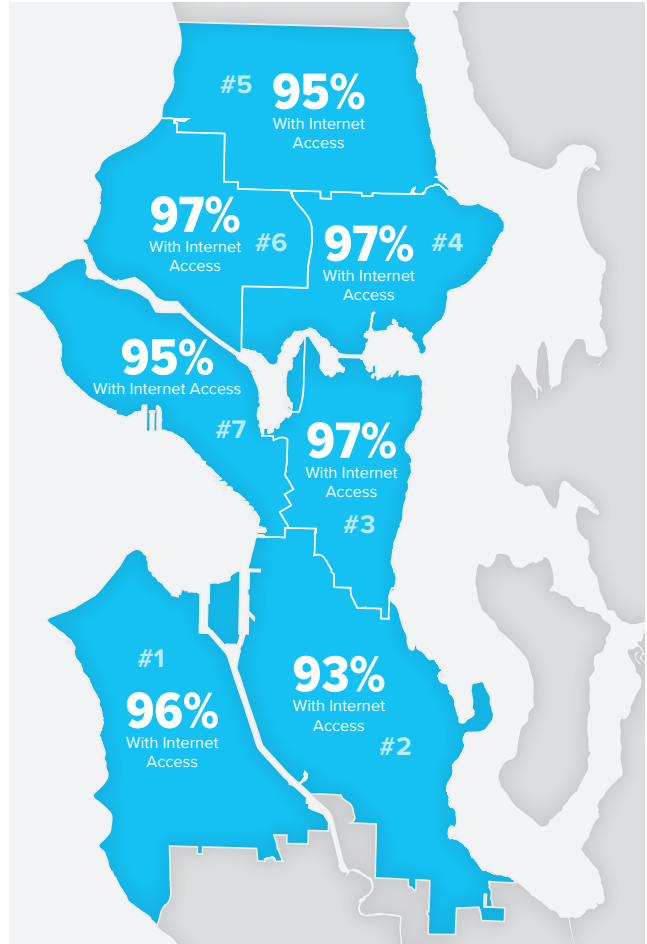## Some areas of Seattle report lower rates of internet access.

The research shows that not all areas of the City have equal access to internet in the home.

- Council District 2 (South Seattle) has the lowest rate of access with only 93% reporting in-home internet access.
- Council District 3 (Central Seattle), Council District 4 (Northeast Seattle), and Council District 6 (Northwest Seattle) have the highest rates of access, with 97% of residents reporting in-home internet access.
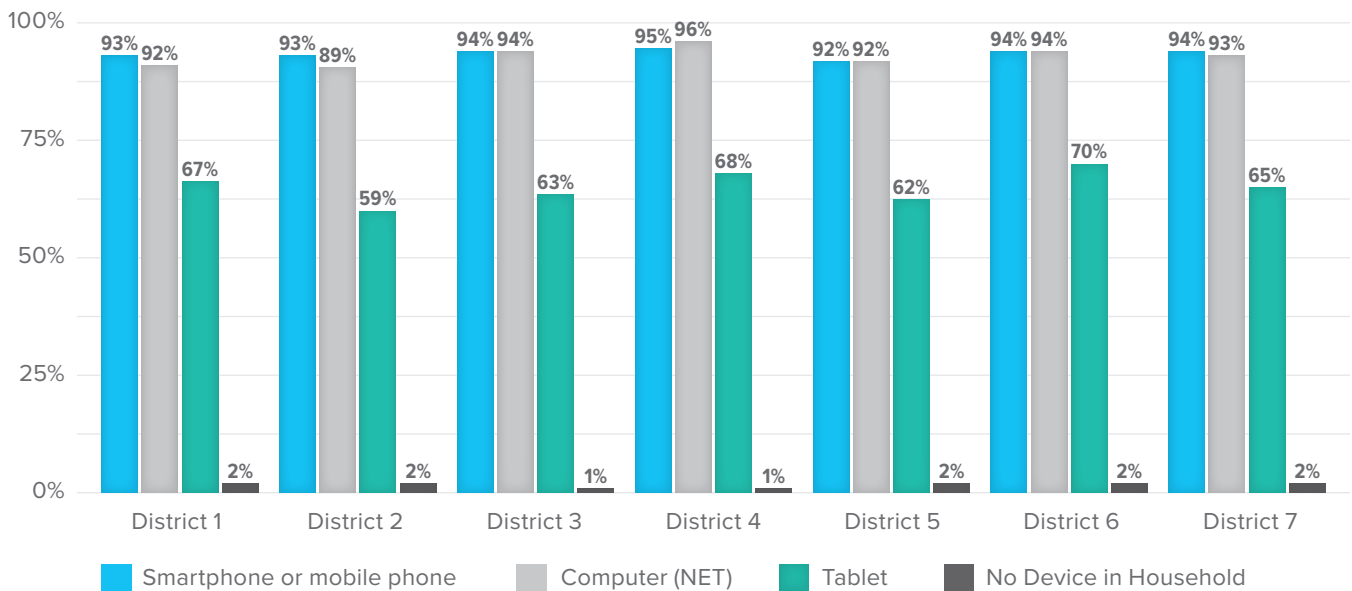
Smartphone/mobile internet capable device penetration is nearly equal across the city and council districts—ranging between 92% and 95%.

The average total number of types of devices is also lower among some areas of the city.

- It is lowest in Council District 2 and highest in Council District 4 and 6.

#5 95% With Internet Access

97% With Internet Access **#6**

97% With Internet Access **#4**

95% With Internet Access **#7**

97% With Internet Access **#3**

#1 96% With Internet Access

93% With Internet Access **#2**

Internet Devices in Household by Council District

	District 1	District 2	District 3	District 4	District 5	District 6	District 7
Smartphone or mobile phone	93%	93%	94%	95%	92%	94%	94%
Computer (NET)	92%	89%	94%	96%	92%	94%	93%
Tablet	67%	59%	63%	68%	62%	70%	65%
No Device in Household	2%	2%	1%	1%	2%	2%	2%

Council District 4 and 6 are more likely than other areas to have laptops and tablets.
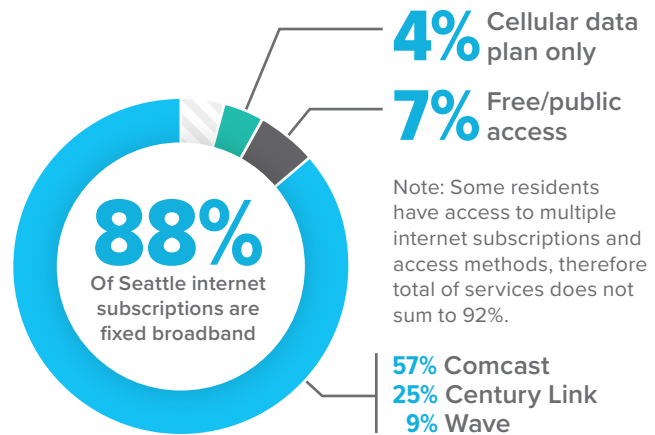
City of Seattle

Source of Internet Service

Purchased fixed broadband subscriptions are the primary source of in-home internet.

For the majority (88%) of Seattle residents, internet access in the home is purchased via subscription from a broadband internet provider. Among those with fixed internet broadband, Comcast and Century Link are the most common providers.

A small percentage (4%) of residents rely solely on a cellular data plan for in-home internet access. The remaining residents with access indicated they obtain the internet through other means such as free hot spots, building or resident recreation centers, or other forms of non-purchased internet.

Those living in lower socio-economic status census tracts and those with household incomes lower than $50,000 per year are significantly more likely to have no fixed broadband subscription and instead rely on cell phone data plans or free/public internet available in the home.

4% Cellular data plan only

7% Free/public access

88%
Of Seattle internet subscriptions are fixed broadband

Note: Some residents have access to multiple internet subscriptions and access methods, therefore total of services does not sum to 92%.

57% Comcast
25% Century Link
9% Wave

Those with incomes less than $25K per year are more than three times as likely to rely on a cell phone data plan for internet service.

- 13% Of those with <$25K incomes rely solely on cell phone data plans to access the internet
- 6% Of those with $25K-$50K incomes rely solely on cell phone data plans to access the internet

Those with incomes less than $25K per year are more than 2.4 times as likely to rely on free/public access points for internet access in the home.

- 17% Of those with <$25K incomes rely on free/public internet access

**Residents who rely on cell phones to access the internet have some distinct differences.
Compared to those with a fixed broadband subscription (FBBS), those with cellular data plans only…**
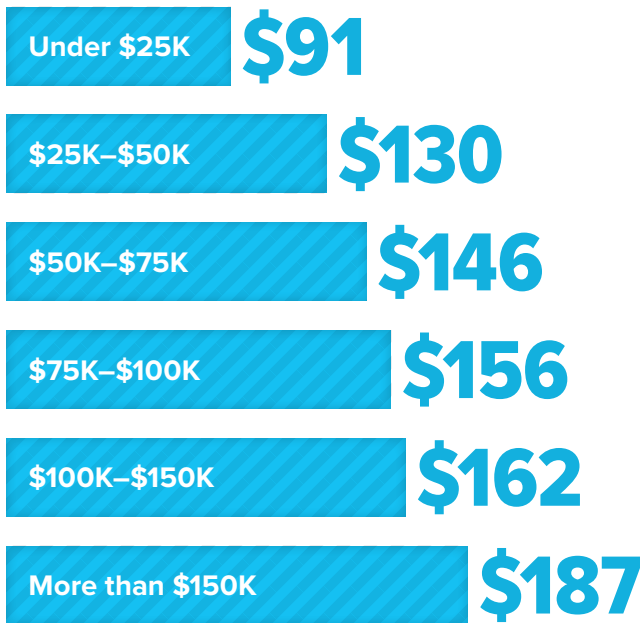
- Are less likely to consider their connection at least mostly adequate (66% vs. 84% with a FBBS)
- Are more likely to want faster speeds (30% vs. 18% with a FBBS)
- Are less likely to have devices, other than their phone, in the home
- Are nearly twice as likely to have household members who visit the library or community center for internet access (48% vs. 24% with a FBBS)
- Are more likely to 'apply for jobs online' at least weekly (speaking to the life stage/situation of these respondents)

- Are more likely to be unemployed (30% vs. 18% with a FBBS), and more likely to be disabled (19% vs. 4% with a FBBS)
- Are more likely to live alone (54% vs. 30% with a FBBS); and to not have children in the home (10% do vs. 26% with a FBBS)
- Are more likely to live at or below 135% of the FPL (34% vs. 7% with a FBBS) and to have lower average incomes ($43K vs. $97K)
- Are more likely to only have a high school level education or some college compared to those with a FBBS
- Are more likely to be a racial or ethnic minority (55% are White vs. 68% with a FBBS; 13% are Black vs. 5% with a FBBS)

Cost of Internet

Households pay on average $150 per month for internet service.

The average monthly amount spent by households in Seattle to access the internet and internet related services in the home is $150. While the amount spent does vary according to income (with higher income residents paying more for the internet), the proportion of a residents' total monthly income spent on internet related services is significantly higher among those with lower incomes.

Total Approx. Monthly Cost: By Income (Bundled or Individual Services)

Under $25K	**$91**
$25K–$50K	**$130**
$50K–$75K	**$146**
$75K–$100K	**$156**
$100K–$150K	**$162**
More than $150K	**$187**

Average Monthly Amount: By Service Provider

Century Link	**$89**
Wave	**$82**
Comcast	**$122**
Cellular Data Plans (NET)	**$98**

Some residents were unable to isolate what they pay for internet services, and responded with a bundled cost for internet and other services such as cable television, landline telephones, and home security systems.

Average Monthly Cost When the Household Pays For:

Internet only (not bundled) from a single provider

$69

Internet as part of a bundle from a single provider

$156

More than one source of internet for the home

$200

"Our household does not have any large barriers to affording or using internet access. However, we completely agree that access to technology and the internet greatly improves an individual's quality of life here in Seattle and are very supportive of efforts to improve access and affordability for others."
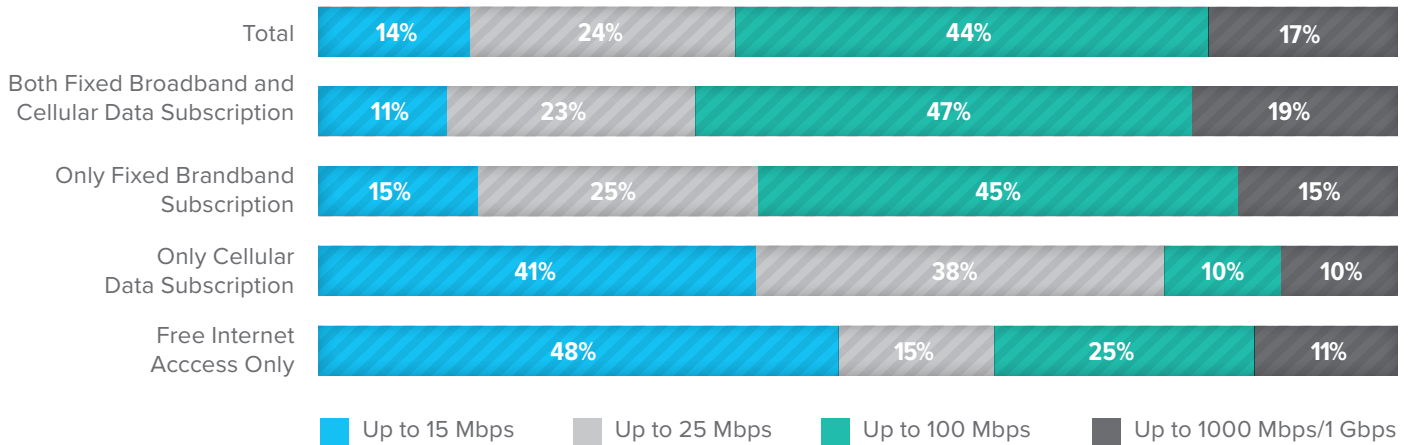
—Seattle Resident

City of Seattle
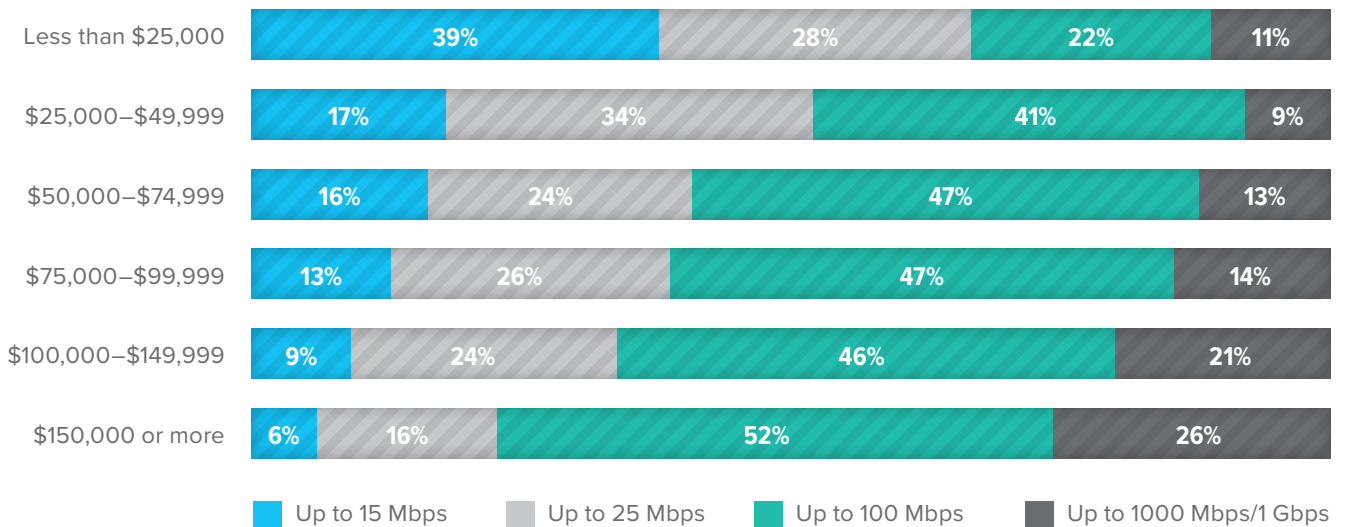
Speed of Internet

While a notable percentage do not know their internet speeds, among those that do, the majority reported speeds of over 100Mbps. Not surprisingly, speed correlates with income; the higher a household income, the more the household spends on internet, and thus the faster the speed.

Those who are relying only on cellular data plans or who have free internet report significantly slower internet speeds than those who are paying for broadband subscriptions.

	Up to 15 Mbps	Up to 25 Mbps	Up to 100 Mbps	Up to 1000 Mbps/1 Gbps
Total	14%	24%	44%	17%
Both Fixed Broadband and Cellular Data Subscription	11%	23%	47%	19%
Only Fixed Brandband Subscription	15%	25%	45%	15%
Only Cellular Data Subscription	41%	38%	10%	10%
Free Internet Acccess Only	48%	15%	25%	11%

- Up to 15 Mbps
- Up to 25 Mbps
- Up to 100 Mbps
- Up to 1000 Mbps/1 Gbps

Subscribed internet speed correlates with income.

	Up to 15 Mbps	Up to 25 Mbps	Up to 100 Mbps	Up to 1000 Mbps/1 Gbps
Less than $25,000	39%	28%	22%	11%
$25,000–$49,999	17%	34%	41%	9%
$50,000–$74,999	16%	24%	47%	13%
$75,000–$99,999	13%	26%	47%	14%
$100,000–$149,999	9%	24%	46%	21%
$150,000 or more	6%	16%	52%	26%

- Up to 15 Mbps
- Up to 25 Mbps
- Up to 100 Mbps
- Up to 1000 Mbps/1 Gbps

Many (43%) residents of Seattle do not know the speed of their in-home internet, indicating a need for education in this area to ensure effective self-advocacy.
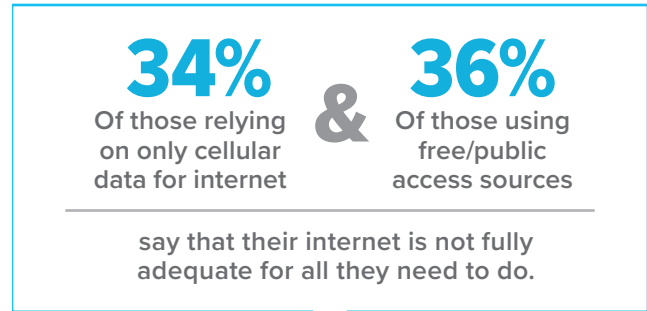
Adequacy of Internet

Perceived adequacy of internet connections in the home also correlates with source of the internet and household income.

Those who are paying for fixed broadband subscriptions are significantly more likely than those using cellular data plans only or those receiving free internet to rate their connections as adequate for all they need to do.
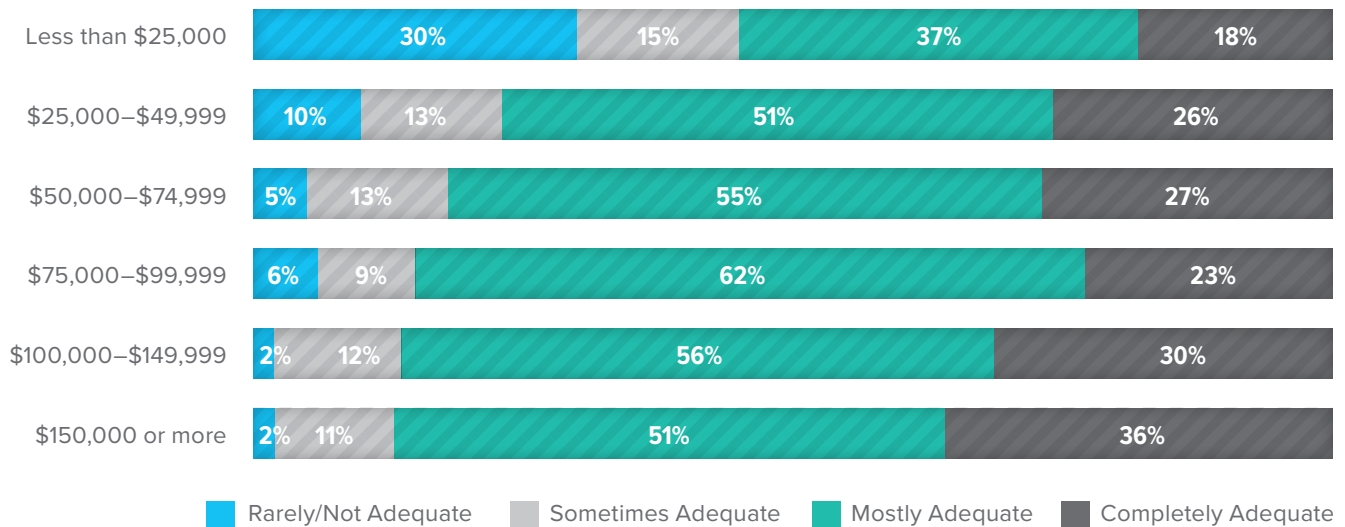
Household income correlates with assessment of adequacy of the internet. The higher the income of the household, the more likely that the internet is adequate for all that needs to be completed.

Internet Adequacy by Type of Service

34%
Of those relying on only cellular data for internet

&

36%
Of those using free/public access sources

say that their internet is not fully adequate for all they need to do.

This compares to only **21%** of those with fixed broadband subscriptions stating the same.

Adequacy of the Internet Access: By Income

Income	Rarely/Not Adequate	Sometimes Adequate	Mostly Adequate	Completely Adequate
Less than $25,000	30%	15%	37%	18%
$25,000–$49,999	10%	13%	51%	26%
$50,000–$74,999	5%	13%	55%	27%
$75,000–$99,999	6%	9%	62%	23%
$100,000–$149,999	2%	12%	56%	30%
$150,000 or more	2%	11%	51%	36%

"Please continue working towards being a national leader in providing fast and affordable internet access to Seattleites in urban and suburban areas at every economic level. Send a message to the rest of the nation and to the people of this great city, that this is the way forward and that Seattle is a model for the future state of access and communications. Thank you for all the work you do."

—*Seattle Resident*

City of Seattle

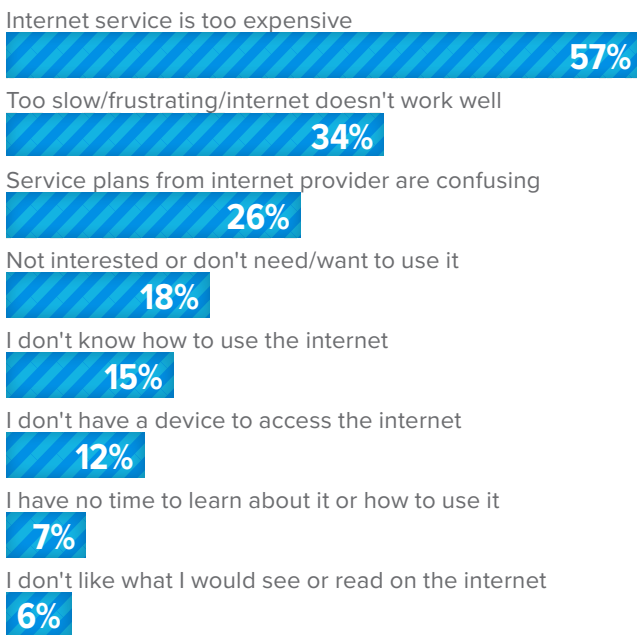# Barriers and Reasons for Not Using the Internet More

Nearly one out of four residents report something that keeps them from using the internet more.

While most Seattle residents report using the internet as much as they want or desire, almost one out of four (23%) cite a factor or limitation that is keeping them from using the internet more.

23% Of Seattle residents have a limiting factor to not using the internet more

The most common barriers are the cost of internet service and that it is too slow and frustrating to meet residents' needs. Complaints about service plans being too confusing were also relatively common.

Top reasons why residents do not use the internet more (among those with ANY concerns)*

Internet service is too expensive
57%

Too slow/frustrating/internet doesn't work well
34%

Service plans from internet provider are confusing
26%

Not interested or don't need/want to use it
18%

I don't know how to use the internet
15%

I don't have a device to access the internet
12%

I have no time to learn about it or how to use it
7%

I don't like what I would see or read on the internet
6%

Base = Among those reporting a barrier or limitation to using the internet more (n=895)

Certain groups are more likely than others to report barriers to using the internet more often.

Percentage of these groups living with a barrier:

54% Of those living at or below 135% of the Federal Poverty Limit

49% Of Black residents of the city

38% Of older adults (65 years of age or older)

33% Of those living in South Seattle (Council District 2)

31% Of Asian residents of the city

30% Of those who live alone

For the five percent of households who do not have internet in their home, overall cost, lack of a device, or lack of credit or money for a deposit are the primary reasons:

61% Say cost is a primary barrier to obtaining internet access

30% Don't have a device to access the internet

20% Don't have the credit or deposit requirements

16% Don't know how to obtain internet access

8% Say the internet is too slow and/or unreliable

8% Don't trust the internet or technology companies

Low-income programs are not well used or known. Despite cost being the number one reason for why residents do not use the internet at all or more often in the home, discount programs developed specifically for low-income populations have low awareness and low usage.

Only **23%** of low-income households that would qualify for these programs are using them:

- **53%** Are unaware of programs
- **24%** Are aware but not using programs

Base = Among those living at or below 135% of Federal Poverty Level (n=412)

Online Activity Levels and Digital Skills

The level of online activity found in a household varies across different demographic groups.

Using a five point scale, the survey measured the frequency in which residents perform common online tasks: daily, weekly, monthly, less often, and never.
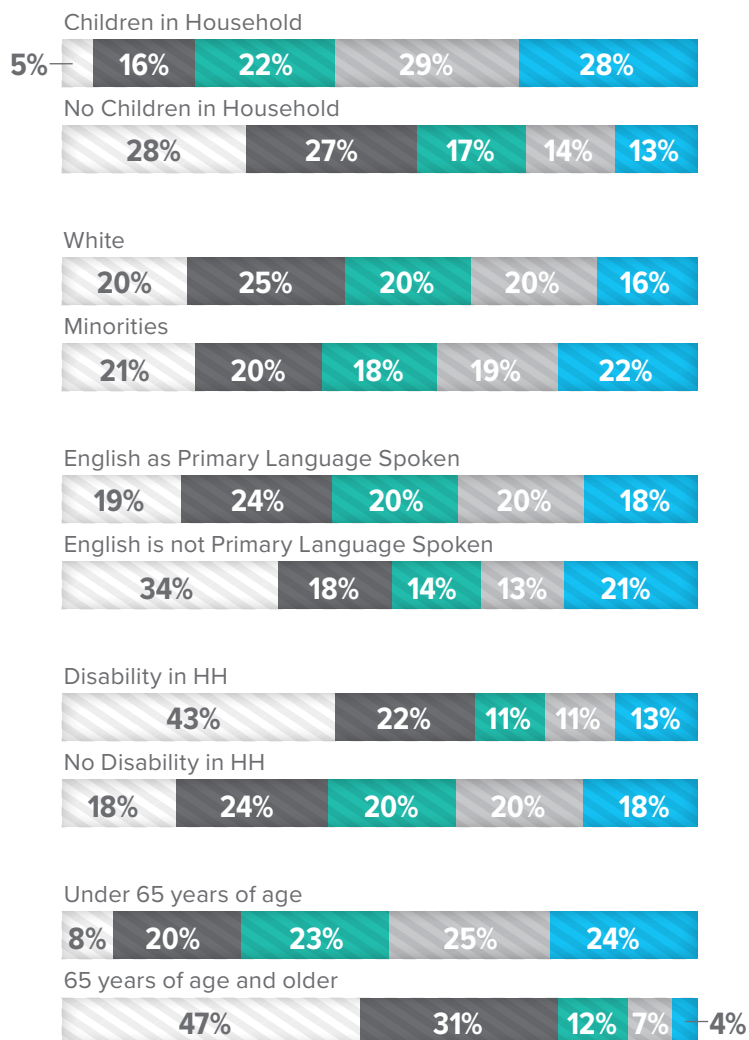
A score from '5' to '0' was assigned for each online task to represent the frequency with which the activity was performed (e.g. a '5' was given for 'daily' and a '0' for 'never'). The individual scores were summed across each responding household and then sorted into five groups: high, medium-high, medium, medium-low, low.

Certain populations have higher overall levels of online activity. This includes households with children and adults under 65 years of age. Groups that have significantly lower online activity include older adults, households with an individual living with a disability, and households that do not speak English as their primary language.

The 22 online activities measured

Go online and get information from or about local government
Access or apply for benefits online (Medicare, VA, Soc. Security, etc.)
Do schoolwork or online research for school
Read or send email
Research and buy a product online
Use online banking services or pay bills online
Create or post original media (writing, art, music, videos) online
Listen to music or radio online
Watch videos or TV online
Access social media (Facebook, Twitter, LinkedIn, Instagram, etc.)
Get health or medical information online
Look for or apply for a job online
Attend an online class, meeting, or webinar
Find legal or consumer rights information online
Stay in touch with friends or family online
Look for answers to computer problems online
Use the internet to work from home
Start or run a business online
Arrange transportation online (check bus schedule, get transportation, order a ride)
Online search for homes / rentals
Research a new skill online
Learning language (programs or watching videos) online

Online Activity Levels: By Impacted Groups

Legend: Low, Med Low, Medium, Med High, High

Children in Household: 5%, 16%, 22%, 29%, 28%
No Children in Household: 28%, 27%, 17%, 14%, 13%

White: 20%, 25%, 20%, 20%, 16%
Minorities: 21%, 20%, 18%, 19%, 22%

English as Primary Language Spoken: 19%, 24%, 20%, 20%, 18%
English is not Primary Language Spoken: 34%, 18%, 14%, 13%, 21%

Disability in HH: 43%, 22%, 11%, 11%, 13%
No Disability in HH: 18%, 24%, 20%, 20%, 18%

Under 65 years of age: 8%, 20%, 23%, 25%, 24%
65 years of age and older: 47%, 31%, 12%, 7%, 4%
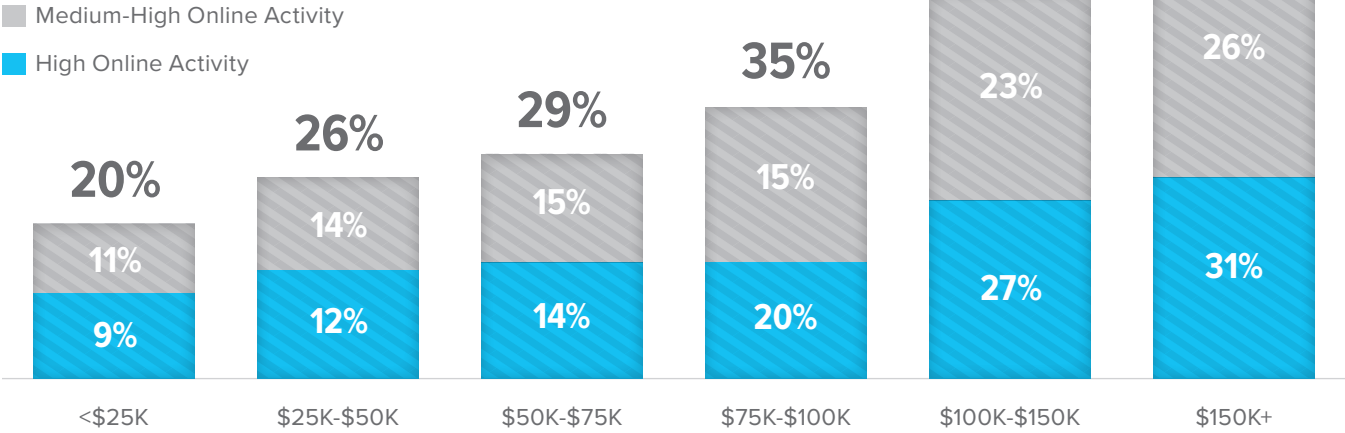
Groups with higher online activity:
1 Children in the household
2 Younger adults (under 65)
3 Racial and ethnic minorities

Groups with lower online activity:
1 Older adults (65+)
2 Households with one or more member living with a disability
3 Households in which primary language is other than English

There is a direct correlation between income and online activity. The higher the income, the more online activities are done on a regular basis.

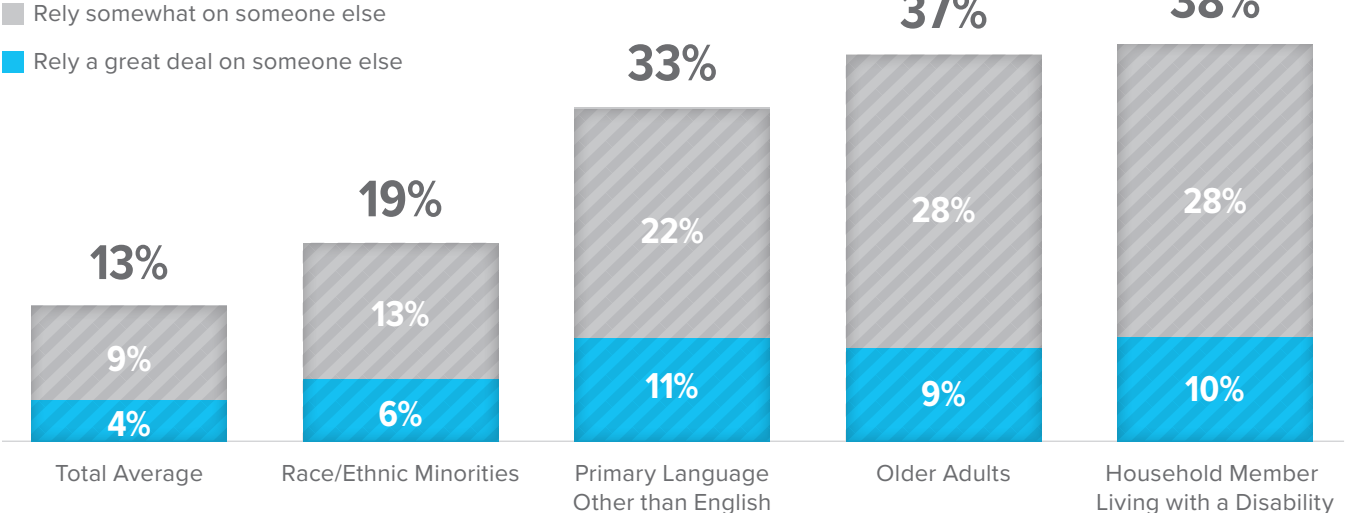### Online Activity Levels: By Household Income

- ▨ Medium-High Online Activity
- ▨ High Online Activity

Income	High	Medium-High	Total
<$25K	9%	11%	20%
$25K-$50K	12%	14%	26%
$50K-$75K	14%	15%	29%
$75K-$100K	20%	15%	35%
$100K-$150K	27%	23%	50%
$150K+	31%	26%	57%

Most residents can access the internet independently.

The majority of Seattle residents have the skills needed to independently access and use the internet, though more than one out of ten (13%) regularly rely on someone else to help them access the internet.

Groups that are more likely to rely on others to help them access the internet include:

- Members of racial or ethnic minorities (19% rely on someone else).
- People who live in households where English is not the primary language (33% rely on someone else).
- Older adults (65+) (37% rely on someone else).
- People who live in households where there is someone living with a disability (38% rely on someone else).

Reliance on Others to Help with Access and Navigation of the Internet: By Impacted Groups

- ▨ Rely somewhat on someone else
- ▨ Rely a great deal on someone else

Group	Rely a great deal	Rely somewhat	Total
Total Average	4%	9%	13%
Race/Ethnic Minorities	6%	13%	19%
Primary Language Other than English	11%	22%	33%
Older Adults	9%	28%	37%
Household Member Living with a Disability	10%	28%	38%

Reliance on Others to Help with Access and Navigation of the Internet: By Income
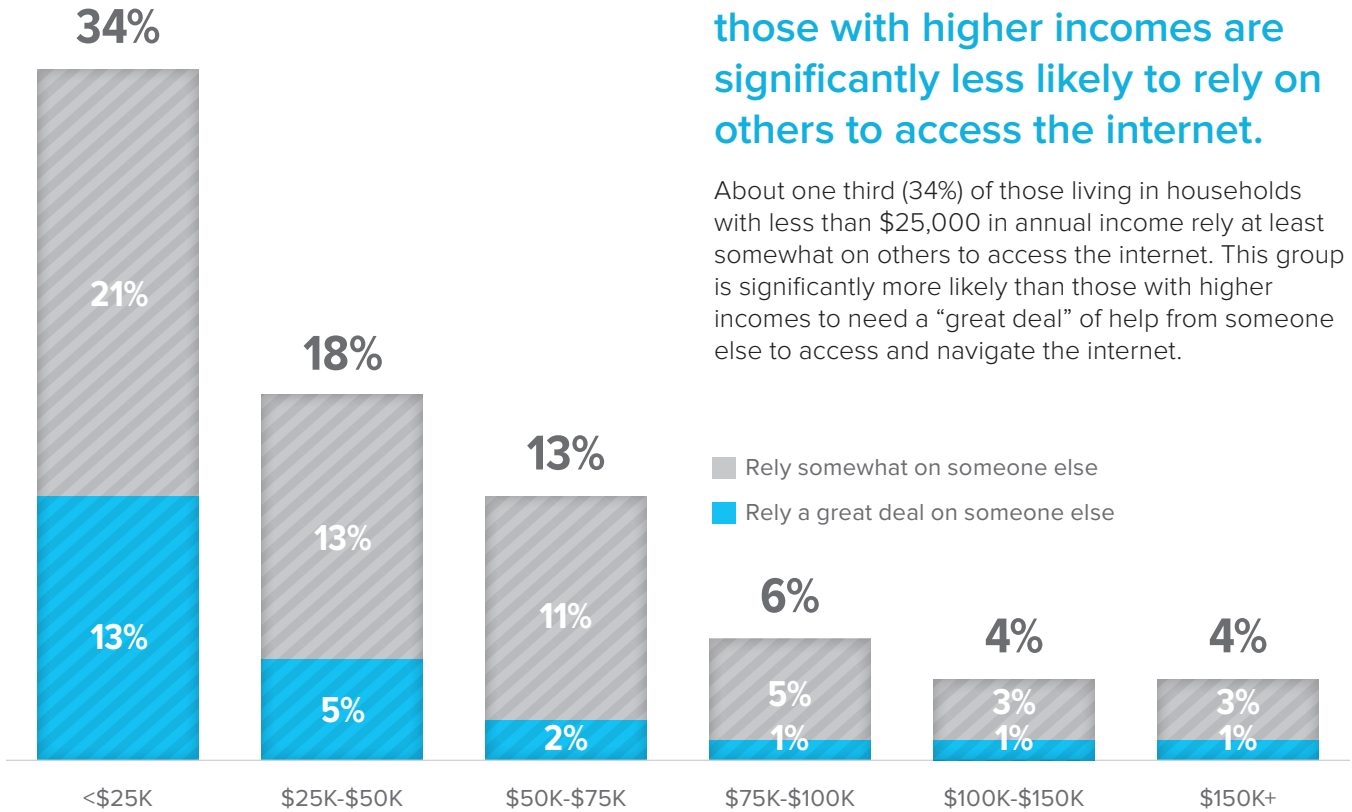
Ability to access the internet independently increases in step with household income—those with higher incomes are significantly less likely to rely on others to access the internet.

About one third (34%) of those living in households with less than $25,000 in annual income rely at least somewhat on others to access the internet. This group is significantly more likely than those with higher incomes to need a "great deal" of help from someone else to access and navigate the internet.

34%

21%

13%

18%

13%

5%

13%

11%

2%

6%

5%
1%

4%

3%
1%

4%

3%
1%

<$25K $25K-$50K $50K-$75K $75K-$100K $100K-$150K $150K+

Rely somewhat on someone else
Rely a great deal on someone else

"I'm glad Seattle cares about this issue and hope you can address race and income divides in technology."

—*Seattle Resident*

City of Seattle

Importance of the Internet to Daily Life

City of Seattle residents agree that technology and the internet are critical to their daily life.

Nearly two out of three (62%) residents say that technology and the internet are **extremely important** to their daily life. Only a small number (4%) of residents say that technology and the internet are **not very** or **not at all important** to them.

Residents agree
that technology and the internet are critical to daily life

4%
12%
22%
62%

- ● Extremely Important
- ● Important
- ● Very Important
- ○ Not Very/Not Important
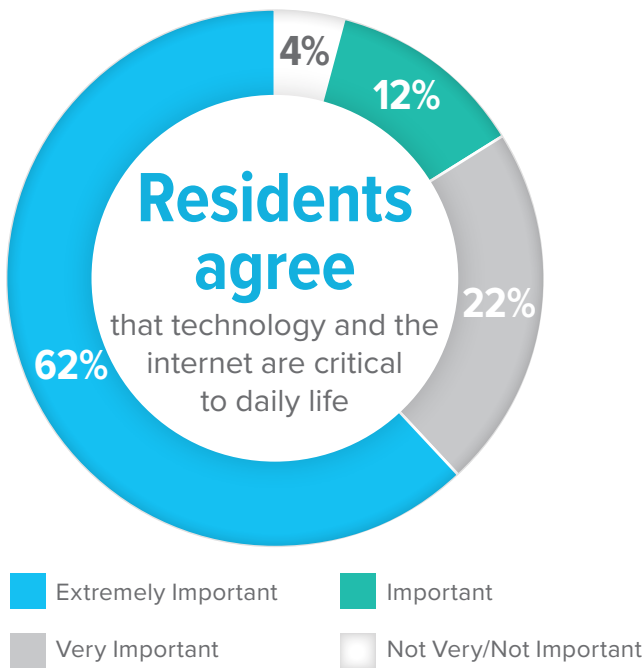
There are some differences found in Seattle residents' attitudes towards the importance of technology and the internet.

Groups that find the internet less important to their daily life (% shown responding not very/not at all important):

- Older adults (65 and older): 15%
- Low-income (under 135% of FPL): 14%
- Households with a member living with a disability: 12%

Households with children are the most likely group to rate the internet as extremely or very important to their daily life:

- Households with children: 98% rate it important/very important/extremely important and only 2% say it is not important.

Residents agree that internet and technology can be both positive and potentially harmful.

Residents are more likely to feel the positive effects in their personal lives (and the lives of their family); however, one out of three (32%) report that the internet and technology has some harmful effects, along with benefits, in their personal life. Moreover, the majority of residents (58%) agree that the internet and technology has had some harmful effects on society.
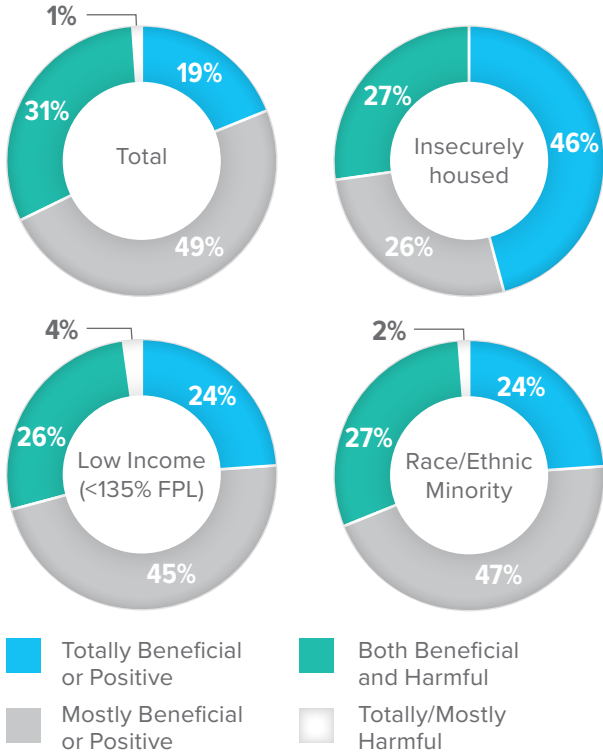
While those with children in the household are less likely than others to say that technology is unimportant, they are significantly more likely to be tempered in their assessment of the positive and negative effects of technology and the internet on themselves and their family.

Effect of the Internet and Technology on You and Your Family

Total
1%
19%
31%
49%

Children In Household
17%
37%
46%

- ● Totally Beneficial or Positive
- ● Both Beneficial and Harmful
- ● Mostly Beneficial or Positive
- ○ Totally/Mostly Harmful
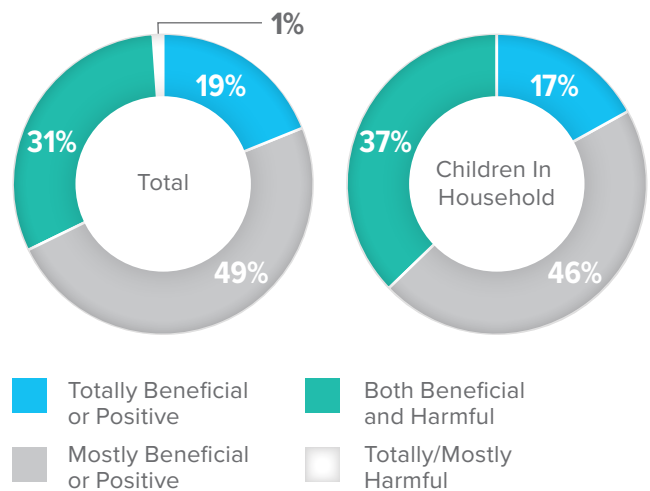
Those in low income households and racial/ethnic minorities are the most likely to rate the effect of the internet and technology as "totally beneficial" to them—even though these groups tend to be less likely to rate technology as extremely or very important to their daily life. This speaks to the fact that those falling on the wrong side of the digital divide are aware of the divide and the inequities that it creates.

Effect of the Internet and Technology on You and Your Family

Total: 1%, 19%, 49%, 31%

Insecurely housed: 27%, 46%, 26%

Low Income (<135% FPL): 4%, 24%, 45%, 26%

Race/Ethnic Minority: 2%, 24%, 47%, 27%

Legend:
- Totally Beneficial or Positive
- Mostly Beneficial or Positive
- Both Beneficial and Harmful
- Totally/Mostly Harmful

Most residents have at least one concern about technology or the internet.

'Ensuring the safety and security of personal information' and 'how their data and information is being used' are primary concerns among Seattle residents. Nine out of ten (91%) residents have at least one concern when it comes to accessing and using the internet.

City residents, regardless of age, are most concerned about the security of their personal information, how their data is used, and protection from viruses.

Percentage of Residents Concerned about Technology and Internet Safety and Security Issues

80% Ensuring the safety and security of my personal information

77% How my data and information is being used (including ways I may not know about)

71% Protecting myself from viruses and malware

39% Protecting myself from others online

24% Protecting my children from others online

Civic Engagement Preferences

When it comes to communicating with a group or the city, electronic communication is more preferred than physical communication, with over three quarters mentioning email as a preferred method.

Some key differences include:

- Those with less than a high school education prefer physical letters (40%) over email (30%).
- Those living in Seattle Housing Authority buildings have an equal preference for physical letters and email (50% physical letters and 49% email).
- While email is still the preferred method, adults under the age of 35 and high income earners are more likely than other groups to prefer the City website or an app (37% for young adults and 39% for high wage earners—$150,000 or more in household income).

An email: 77%
Physical letter: 32%
The City of Seattle website/app: 31%
A text message: 23%
Facebook: 22%
In a community meeting: 21%
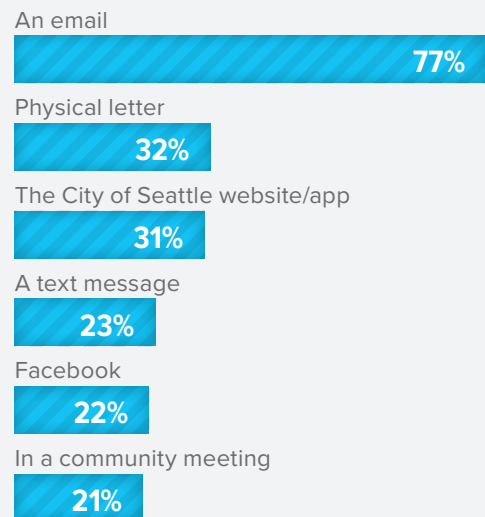
City of Seattle

What's Next?

Equipped with the findings of the 2018 Technology Access and Adoption Study, the City of Seattle will focus its commitment towards these digital inclusion investments over the next two years:

Technology and Internet Access

- Continue to provide access to public computer kiosks and Wi-Fi in many of our City's community centers, libraries, and certain City owned facilities

- Increase City outreach efforts to expand awareness and use of free internet connectivity for non-profit organizations

- Partner with low-income housing providers to promote affordable options for internet connectivity to their residents

- Educate multi-dwelling units (MDU) owners on best practices and encourage them to provide adequate internet choices for their residents

Speed and Adequacy of Internet

- Develop consumer education to enhance understanding of internet provider discounts, cost options, and maximizing internet speed

- Increase public awareness of low-cost internet services offered by local providers

Use of Internet and Technology

- Utilize the Technology Matching Fund to identify promising, neighborhood-based projects that improve access to computer devices, internet connectivity, and digital skills training for our most vulnerable communities

- Administer and act as convener for a digital equity network, a collaboration of government, community, and business to address digital equity issues in the King County region

- Implement a public information campaign focused on digital privacy, security, and online safety

"I think that technology is extremely important in 2018, and easy access to the internet and technology by all income levels will be necessary to slow the income inequity problem. We cannot increase the chasm that the poor must overcome by only allowing access to technology to those who can afford it."

–Seattle Resident

We envision Seattle as a city where technology's opportunities equitably empower all residents and communities—especially those who are historically underserved or underrepresented.

City of Seattle