



**FLORIDA DEPARTMENT *of*
ECONOMIC OPPORTUNITY**

Division of Community Development Office of Broadband

Workshop Summary March 2021

Table of Contents

Executive Summary 3

Summary of the Florida Office of Broadband Workshops 4

Internet Service Providers 5

Dual Environments 6

Education..... 6

College 7

Digital Literacy/Accessibility for Seniors 7

Telehealth..... 7

Economic Opportunity 8

Multi-Pronged Approach 8

Disaster Resilience 8

Smart Cities 9

Dig Once Policy 9

Summary 9

Next Steps 9

Table 1..... 10

Table 2..... 11

Table 3..... 11

Table 4..... 12

Table 5..... 12

Table 6..... 13

Table 7..... 13

Table 8..... 14

Table 9..... 14

Table 10..... 15

Table 11..... 15

Table 12..... 16

Table 13..... 17

Table 14..... 18

Table 15..... 19

Table 16..... 20

Table 17..... 22

Appendix..... 23

 Survey Instrument Text 23

 Definitions 24

Executive Summary

The Florida Office of Broadband¹ (Office), housed within the Florida Department of Economic Opportunity's (DEO) Division of Community Development, was established in July 2020 to increase the availability and effectiveness of broadband internet throughout the state.

Per Section 364.0135, Florida Statutes (F.S.), the Office is directed to build and facilitate local technology planning teams. To accomplish this, the Office partnered with the Florida Regional Councils Association to host and facilitate ten regional workshops with industry sector leaders and statewide partners. The information gathered from these workshops will help design state programs and resources for broadband adoption, deployment, expansion and resiliency, as well as provide guidance for the Florida Strategic Plan for Broadband.

Attendance

- Approximately 40 regional industry sector leaders were present at each workshop and the workshops averaged one hour in length.
- Regional leaders from education, healthcare, private business, community organizations, agriculture, tourism, parks and recreation, economic development, local governments, and internet service providers were invited and most attended.
- Members of the Florida Legislature or members of their staff also attended the workshops.

Participation

- Conversation was centered around the current status of broadband in each region, plans and projects currently underway, and how to expand broadband for future growth.
- Recordings of all workshops are available for viewing on the Office of Broadband webpage at www.FloridaJobs.org/Broadband.

Feedback

- Most significant barriers to broadband accessibility were identified as cost and reliability within each region.
- No single methodology will be adoptable and implementable to increase broadband accessibility across the state. Every region, urban and rural, agreed that a combination of technologies and innovative solutions would be necessary to fully meet the needs of Florida communities.
- A survey collecting public comments on the availability and accessibility of broadband internet throughout the state was posted to the Office of Broadband's webpage and shared with state and local partners.
- Survey results will be available on the Office of Broadband's webpage at the end of March 2021.

¹ High-speed Internet access that is always on and faster than the traditional dial-up access.

Summary of the Florida Office of Broadband Workshops

DEO hosted the ten regional workshops and each Regional Planning Council (RPC) facilitated their region's workshop where participants discussed broadband internet accessibility. The following RPCs participated in the virtual broadband workshops detailed below:

Virtual Broadband Workshop Details		
Regional Planning Council (RPC)	Counties within the RPC	Workshop Date
Treasure Coast	Indian River, St. Lucie, Martin, Palm Beach	January 27 from 2:00 - 4:00 p.m.
Apalachee	Jackson, Calhoun, Gulf, Gadsden, Liberty, Franklin, Leon, Wakulla, Jefferson	January 28 from 10:00 - 12:00 p.m.
Emerald Coast	Escambia, Santa Rosa, Okaloosa, Walton, Holmes, Washington, Bay	February 1 from 2:00 - 4:00 p.m.
Southwest Florida	Sarasota, Charlotte, Glades, Lee, Hendry, Collier	February 2 from 10:00 - 12:00 p.m.
Central Florida	Polk, Hardee, DeSoto, Highlands, Okeechobee	February 3 from 10:00 - 12:00 p.m.
Northeast Florida	Baker, Nassau, Duval, Clay, Putnam, St. Johns, Flagler	February 4 from 2:00 - 4:00 p.m.
South Florida	Monroe, Broward, Dade	February 9 from 10:30 - 12:30 p.m.
North Central Florida	Madison, Taylor, Hamilton, Suwanee, Lafayette, Dixie, Levy, Gilchrist, Columbia, Union, Bradford, Alachua	February 10 from 10:00 - 12:00 p.m.
East Central Florida	Marion, Sumter, Lake, Volusia, Seminole, Orange, Osceola, Brevard	February 11 from 10:00 - 12:00 p.m.
Tampa Bay	Citrus, Hernando, Pasco, Pinellas, Hillsborough, Manatee	February 12 from 10:00 - 12:00 p.m.

Figure 1

Individuals and organizations invited to participate in the workshops included industry sector and community leaders within each region. These industry sectors include education, healthcare, private business, community organizations, agriculture, tourism, parks and recreation, economic development, local governments, and internet service providers.

Members of the Florida Legislature or their representatives who attended the workshops for the districts they represent are as follows:

- Senator Lorraine Ausley
- Representative Linda Chaney
- Representative Christine Hunschofsky
- Representative Kristen Arrington
- Representative Stan McClain
- Lindsey Cosby for Representative James Buchanan

- Barbara Blasingame for Representative Josie Tomkow
- Michelle Fernandez for Representative Kevin Chambliss
- Yolanda Abrams for Representative Nicholas Duran
- Aline Guy for Representative Keith Truenow
- Jessica Holley for Representative Jason Shoaf
- J. Zachary Myers for Representative David Smith
- Lucile Malone for Representative Fentrice Driskell
- Former State Representative Dave Murzin

Internet Service Providers

Florida's Internet Service Providers (ISP) participated in all ten of the broadband workshops and provided industry knowledge, contributed to discussions, and actively responded to the concerns of participants. ISP expressed support for the development of the Florida Strategic Broadband Plan by the Florida Office of Broadband and the Florida Department of Economic Opportunity. ISP frequently spoke about special programs for low-income customers and noted the workshops have allowed them to identify issues and address concerns regarding the low adoption rates of the private and federally funded programs offered. ISP also discussed the benefit of lowering cost-to-connect fees and communications service taxes could have on expanding broadband service into some areas, and noted that lowering taxes and fees associated with the expansion of internet services would make it more cost effective for the industry to invest in Florida's broadband infrastructure.

During the workshop, ISP mentioned the following programs for which entities and consumers may be eligible in the communities these providers service:

- The ***Stay Connected Program*** through Charter Communications is a partnership with local governments and school districts for bulk services.
- Comcast's ***Internet Essentials*** link provides information on multiple topics to assist consumers during the pandemic.
- CenturyLink's ***Lifeline*** offers low-income families with access to broadband for \$50 a month.
- Mediacom's ***Connect2Compete*** program provides access to a connection in all areas where Mediacom's broadband network is present and is available for students who are on free or reduced lunch.

Common Workshop Themes

The following section identifies the patterns and common themes that emerged from comments made by participants during the regional workshop discussions. The workshops brought together regional leaders in each sector for open discussions and anonymous polling through the survey. The purpose of the workshops was not to make a final decision about the direction to expand broadband throughout the state, but to better understand the regional needs for broadband internet access based on the discussion of

the survey questions. See *'Survey Instrument Text'* in the Appendix for the full list of questions.

During each workshop, the need for a clear definition of accessibility to broadband was expressed by participants. Participants used a combination of the following factors to describe the accessibility to broadband internet service in their regions:

- Overall ability to connect to the internet;
- Obtaining technology needed to connect to the internet (tablets, laptops, etc.);
- Connection to higher speeds for the internet;
- Connection based on the affordability of broadband internet services; and
- Accessibility based on digital literacy, specifically in older populations.

In each workshop, discussions often led to participants speaking to their experiences surrounding the lack of accessibility from living in rural Florida. A common goal identified during each workshop was finding a solution to provide reliable and affordable internet service to residents in rural communities throughout Florida. Participants identified low industry presence in rural areas as a concern commonly aligned with reliability and cost of services. The term 'broadband desert' was frequently used to describe the lack of access to broadband in rural areas. Participants identified that ISP will not expand coverage into their rural areas because of the population density, leading to broadband deserts across the state. Participants that have secured funding or are actively searching for grants to expand broadband services into rural areas have encountered the problem of locating a provider willing to complete their projects. ISP noted areas with a low population density are often not considered economically viable to service with fiber cables; however, funding opportunities at the federal and state level will help incentivize the expansion of broadband into those rural areas. Providers mentioned that fiber will not always be the answer – utilizing a combination of technologies will be necessary to increase internet accessibility in rural Florida.

Participants representing urban communities identified the cost or affordability of internet services as a barrier. Economically challenged populations that cannot afford commercial internet service do not know they potentially qualify for programs to receive free or discounted internet service. Florida's ISP spoke to special programs for low-income customers. Concern was raised for low adoption rates of these programs without structured communication and coordination between ISP and local, county, and state government.

Dual Environments

Participants representing local and county governments raised awareness regarding their dual environment situations, which are areas with both urban and rural communities. Residents in urban areas encounter challenges with affordability, while rural areas have either unreliable service or no internet service.

Education

Participants expressed concern for students living in rural Florida communities following the recent shift to distance or remote learning from the traditional classroom setting.

Participants noted that students living in rural Florida have had to adapt existing practices for remote learning to account for their unreliable and sometimes non-existent access to internet services. When schools moved to distance learning, some rural students did not have the signal strength to fully utilize the hotspots they were provided with to access internet from home. Participants in the education sector noted even when students had a strong connection, the data limits on the hotspot devices often prohibited them from completing work. One participant noted when schools provided mobile hotspots that struggled to connect to the internet, students living in rural areas relied on local businesses to share access to their Wi-Fi, which allowed them to complete schoolwork in parking lots. Discussions about remote learning practices across the state led to a growing concern for not only students' access to broadband, but also their access to technology that is needed to utilize internet services.

Participants representing communities with economically challenged populations discussed their difficulties with low adoption rates of subsidized programs designed to provide free or low-cost internet services to student's families that qualify. One problem identified by participants was the lack of follow-up with families after registration for free and reduced lunch programs to discuss their family's eligibility for free or low-cost internet services. Internet service providers regularly advertise the availability of their subsidized programs; however, follow-up on registration falls into the hands of each school district. ISP noted the broadband workshops have been helpful in allowing them to identify the needs of their education partners and introducing opportunities to collaborate with regional leaders to increase awareness of the free and reduced cost programs.

College

Affordability of and accessibility to internet services are a concern for many for college students. College representatives discussed challenges in identifying programs available for students who cannot afford internet services or live in rural areas. College students do not know they might qualify for free or discounted internet service through government subsidized programs. ISP noted that reduced cost internet service programs are available to colleges affected by COVID-19. The program covers 80 percent of the fees if the college can cover the remaining fees for students that qualify.

Digital Literacy/Accessibility for Seniors

Participants mentioned that a barrier for Florida's senior population is their lack of experience using technology to access the internet. Discussions surrounding senior digital literacy brought attention to the need for training resources to provide seniors with skills they can confidently use to operate computers and smart devices. Digital Literacy training can be helpful for seniors seeking to access the internet, utilize online services, or stay connected with family and friends. One participant mentioned the *GetSetUp Digital Literacy Program* as a resource for seniors.

Telehealth

Participants discussed how COVID-19 has revealed the weaknesses of broadband infrastructure in their regions. Participants detailed recent internet reliability issues for residents registering for COVID-19 testing, vaccinations, or telehealth appointments with

their primary care physicians. Increased internet traffic following the shift to teleworking and distance learning was mentioned as a potential cause.

Participants noted many residents across rural Florida communities have been struggling to adapt to the rapid changes to their everyday lives. Many had difficulty adapting to required distance learning practices and telehealth services.

Economic Opportunity

Participants classified broadband as essential infrastructure to economic prosperity in both urban and rural communities. Florida's ability to competitively recruit business and industry relies heavily on access to broadband internet service. Participants from across the state identified unreliable internet services and low provider presence as factors hindering economic development by deterring larger businesses from establishing offices in their regions.

Multi-Pronged Approach

Workshop participants commonly discussed the need for a combination of technologies approach to increase the availability and accessibility of broadband internet services across Florida. This approach includes identifying technologies available in the region and adopting a unique combination to provide broadband internet access to unserved and underserved Florida residents. Many participants admitted they do not know enough about alternative internet services available in Florida to independently explore what might work for their region. Participants felt a partnership with the Florida Office of Broadband is important to implement a combination of technologies approach. Participants discussed the importance of conducting a feasibility study including speed tests to thoroughly understand their area's broadband internet access.

ISP noted in discussions that regions will need to incorporate available technology to extend service to the remaining five percent of residents without access to internet, agreeing the answer will not always be fiber², wireless³, or even satellite⁴. There is no universal solution to increase the availability and accessibility of broadband internet service across Florida. It will take the cooperation and partnership of ISP, the government, and regional leaders to expand reliable broadband infrastructure to unserved and underserved communities.

Disaster Resilience

Participants described broadband internet service as infrastructure essential to disaster resilience in both urban and rural Florida communities. The expansion of broadband internet services has become progressively more vital to increasing the scope of

² Converts to light electrical pulses carrying data and sends the light through transparent glass fibers about the diameter of a human hair. Fiber transmits data at speeds much faster than DSL or cable, typically by tens or even hundreds of Mbps.

³ Internet applications and access using mobile devices such as cell phones and palm devices, or Broadband Internet service provided via wireless connection, such as satellite or tower transmitters.

⁴ Internet access provided through communication satellites.

situational awareness that assists in decision making before, during, and after times of a disaster.

ISP noted they offer free services during natural disasters. During recovery, ISP reduced or cut bills for those who are affected. ISP also mentioned that ensuring connectivity during or immediately after a storm is a challenging task. Both homes and nodes must have power to provide internet services. A home might have power restored to it after a storm, but the node that services that home might not be connected. ISP cannot go into an affected area to diagnose and fix problems until given permission by emergency management officials.

Smart Cities

Participants representing smart cities and urban communities commonly discussed the importance of making changes to existing broadband systems to account for future needs in their areas. With the continuous expansion of urban communities, there will be a need for improvement to existing fiber in order to compensate for the number of residents accessing the internet.

Dig Once Policy

The Dig Once Policy is the installation of accessible, buried conduits during various infrastructure projects to enable providers to affordably install fiber with ease by running it through available conduits at a later time. ISP noted that the Dig Once Policy will save a little money, but most prefer to lay their own lines and conduits. These policies require the inclusion of housing fiber optic cables within conduit during roadway construction projects that receive state and/or federal funding.

Summary

The virtual broadband workshops hosted by DEO provided confirmation for the need to complete a feasibility study to identify the current status of broadband internet in Florida. The Office is utilizing the information gathered in this document to identify the high-level needs of each region across the state and include those findings in the outline of the Florida Strategic Plan for Broadband. The responses gathered from the workshops provide the Office with information about the needs of each region and how to better prepare the regions for the future. The workshops helped to identify the immediate needs and uses of specific technology for broadband expansion, as well as the first adopters of the technology in various industry sectors. Now that the Office has a better understanding of the needs, the state can begin to develop funding opportunities for communities throughout the state needing assistance to expand broadband.

Next Steps

The Florida Office of Broadband will include the information gathered during workshop discussions in the Florida Strategic Plan for Broadband and in the development of possible state funding opportunities for broadband internet expansion. The discussions will also assist the Office in assessing disaster resiliency measures and strategies for

expanding broadband internet access to all underserved and unserved communities throughout Florida.

The following tables provide the polling and discussion questions asked during the workshops and the answers from each participant, their county, and industry sector.

Table 1.
Industry Sector Representation

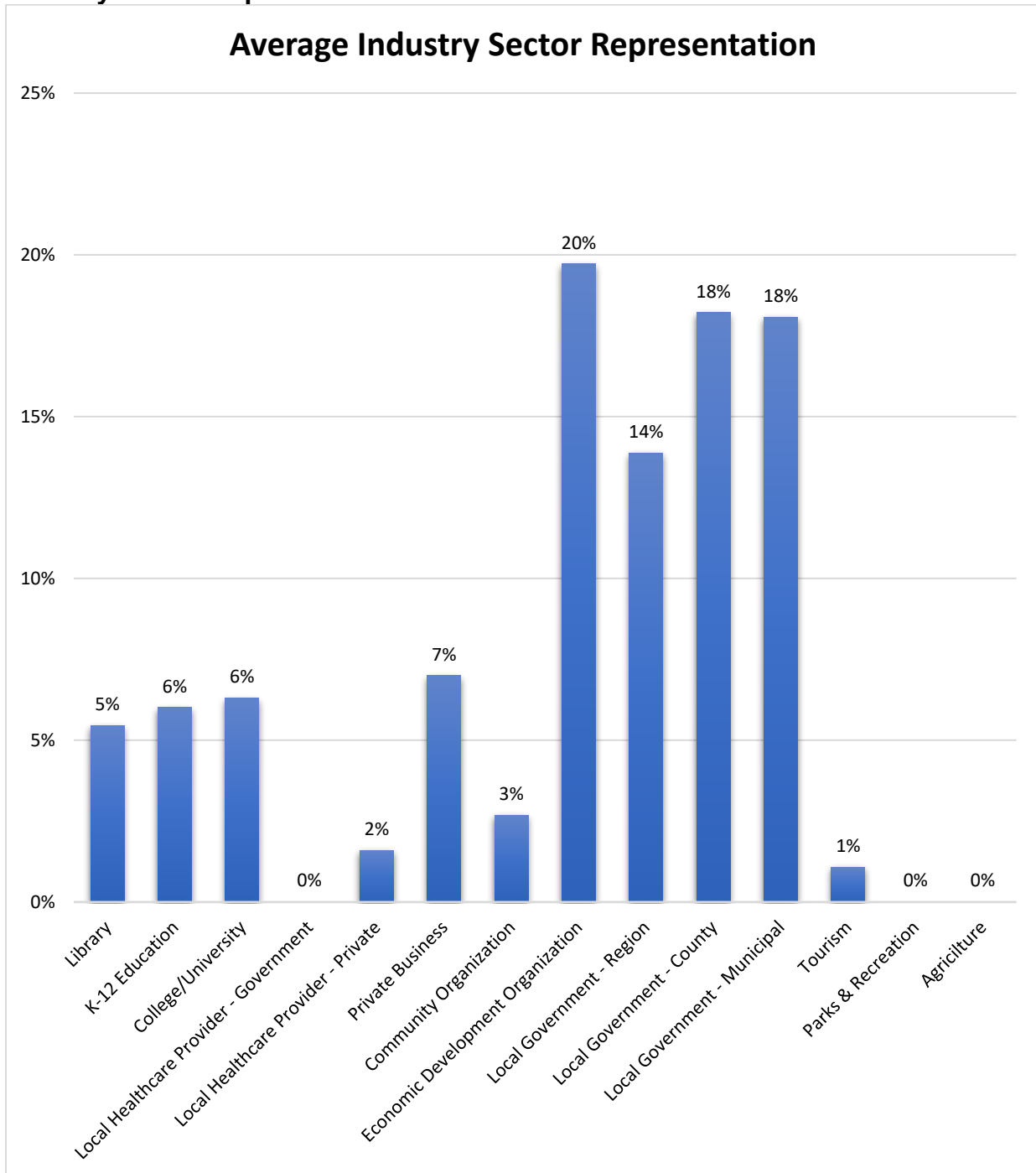


Table 2.
County Representation for Apalachee Regional Planning Council

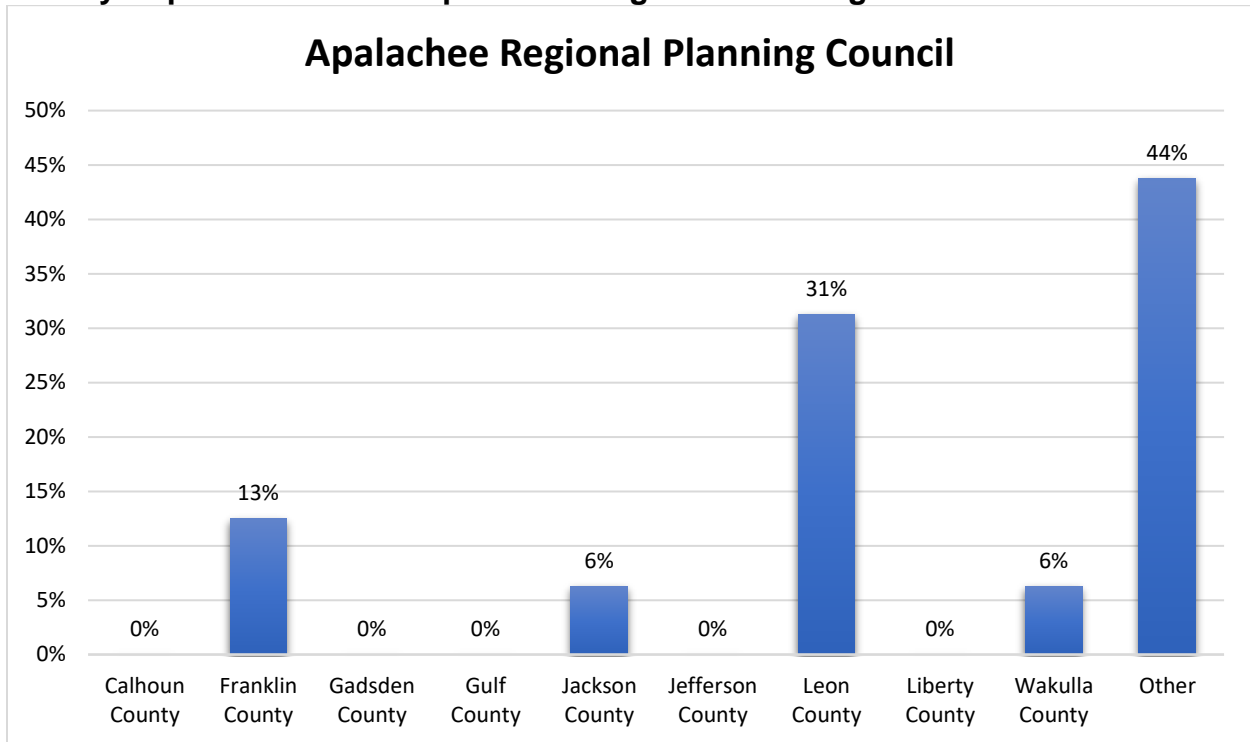


Table 3.
County Representation for Treasure Coast Regional Planning Council

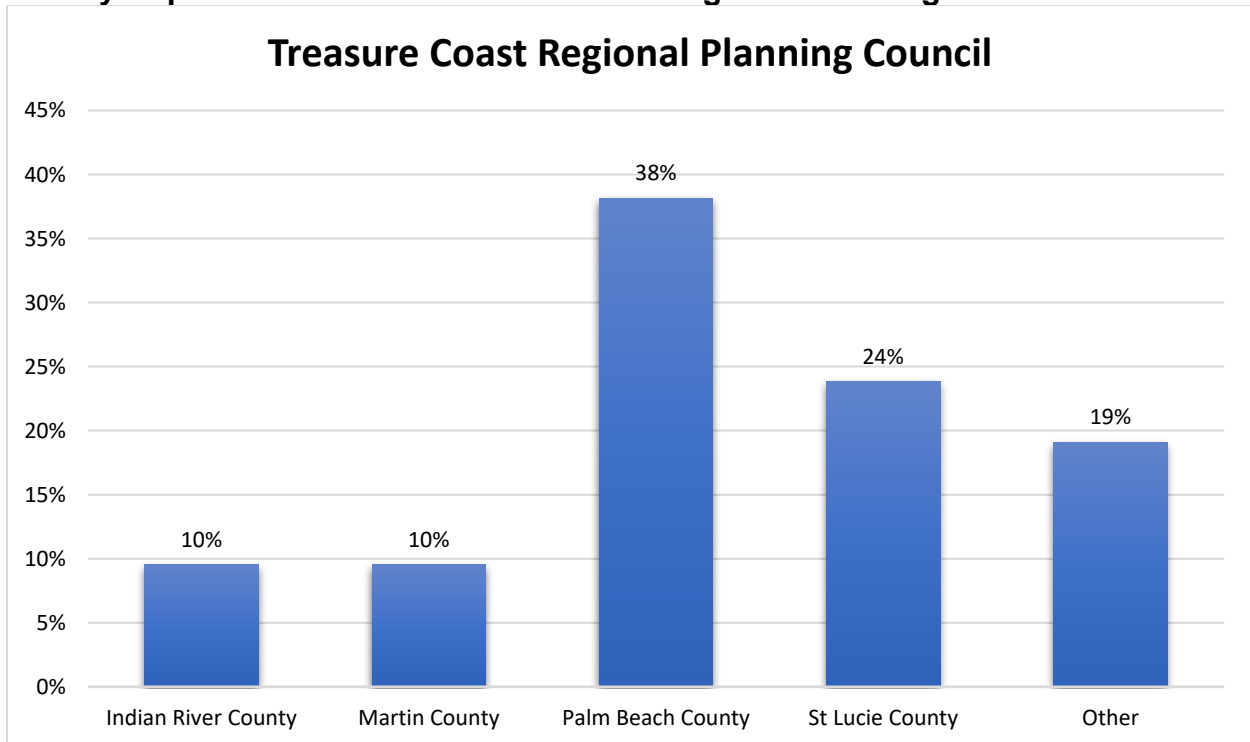


Table 4.
County Representation for Emerald Coast Regional Planning Council

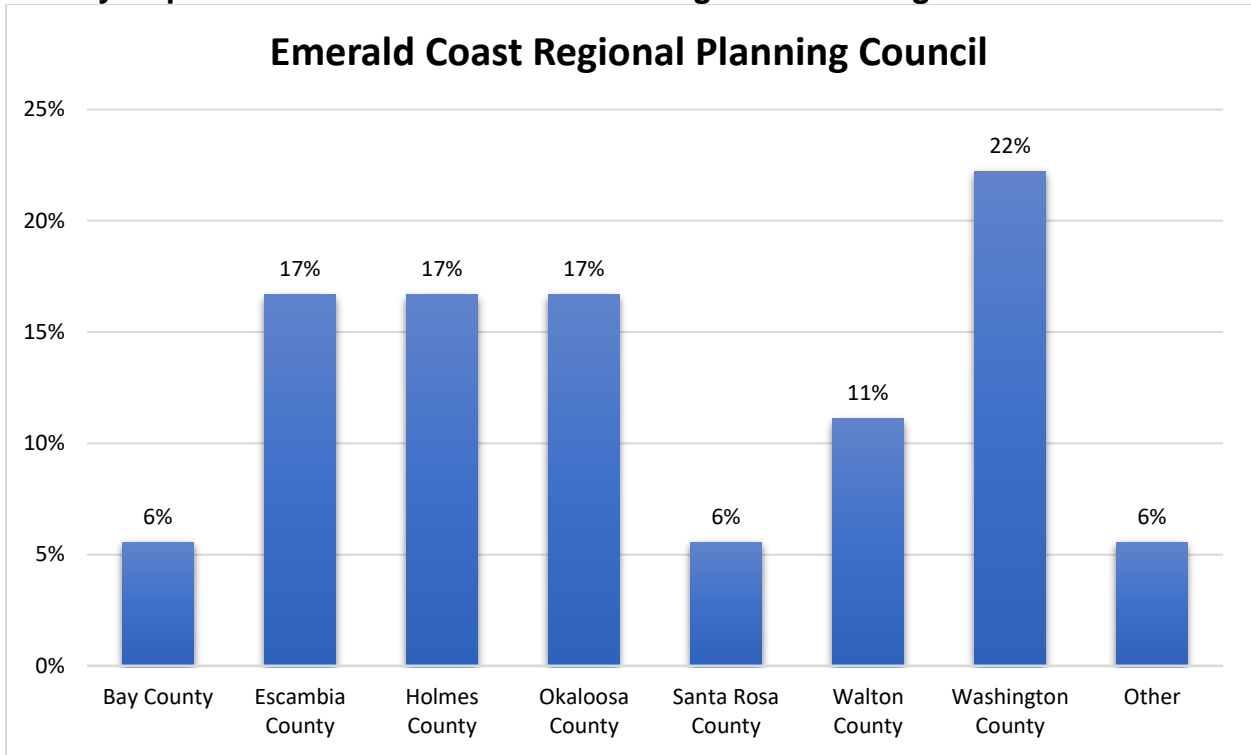


Table 5.
County Representation for Southwest Florida Regional Planning Council

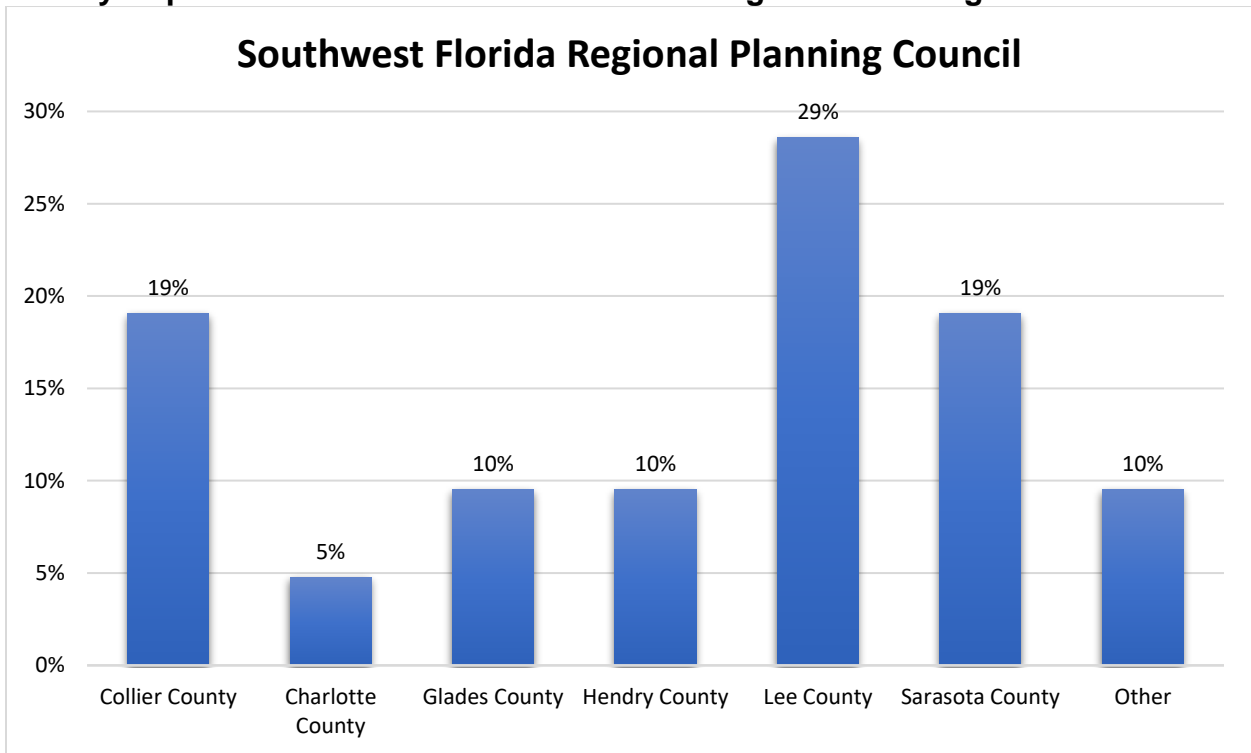


Table 6.
County Representation for Central Florida Regional Planning Council

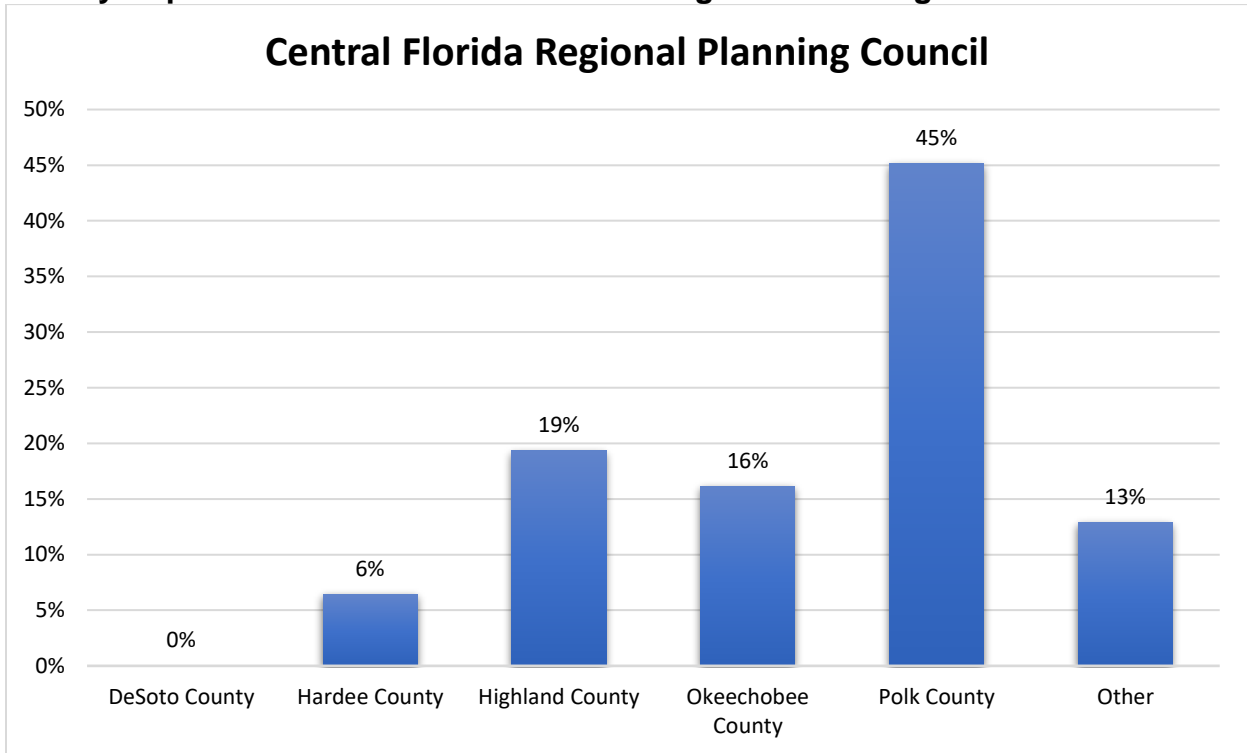


Table 7.
County Representation for Northeast Florida Regional Planning Council

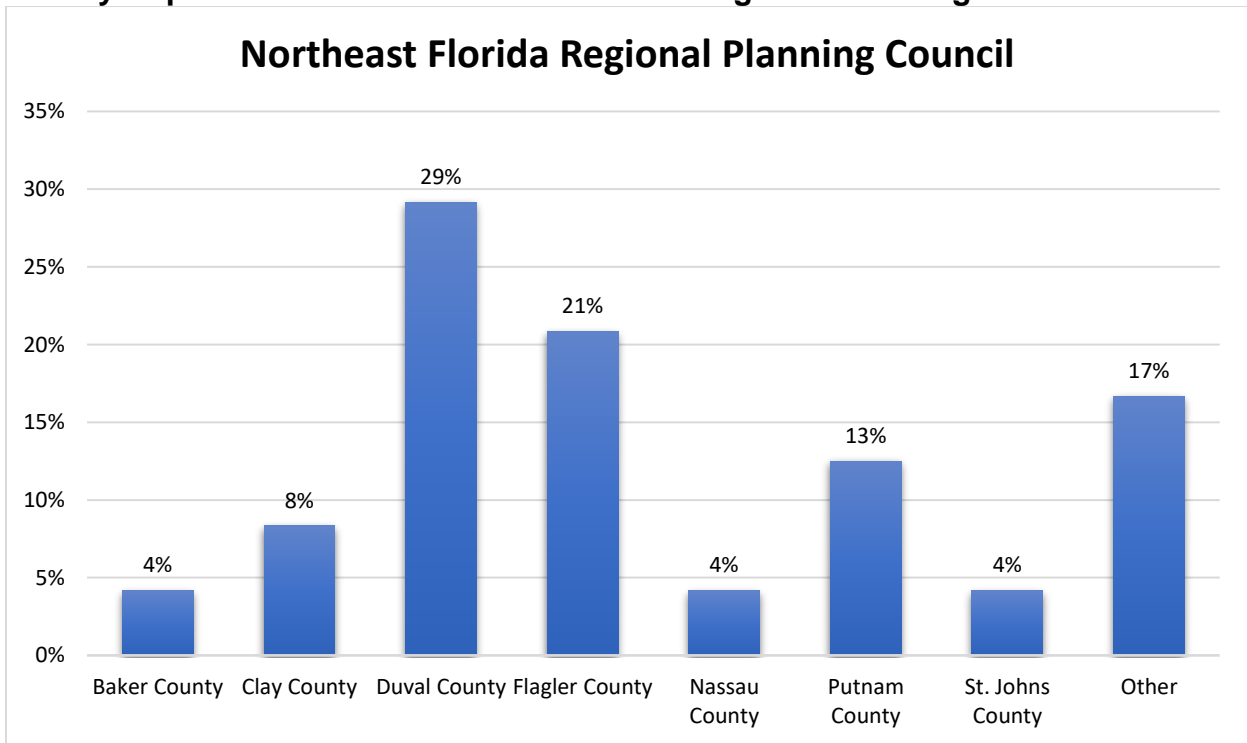


Table 8.
County Representation for South Florida Regional Planning Council

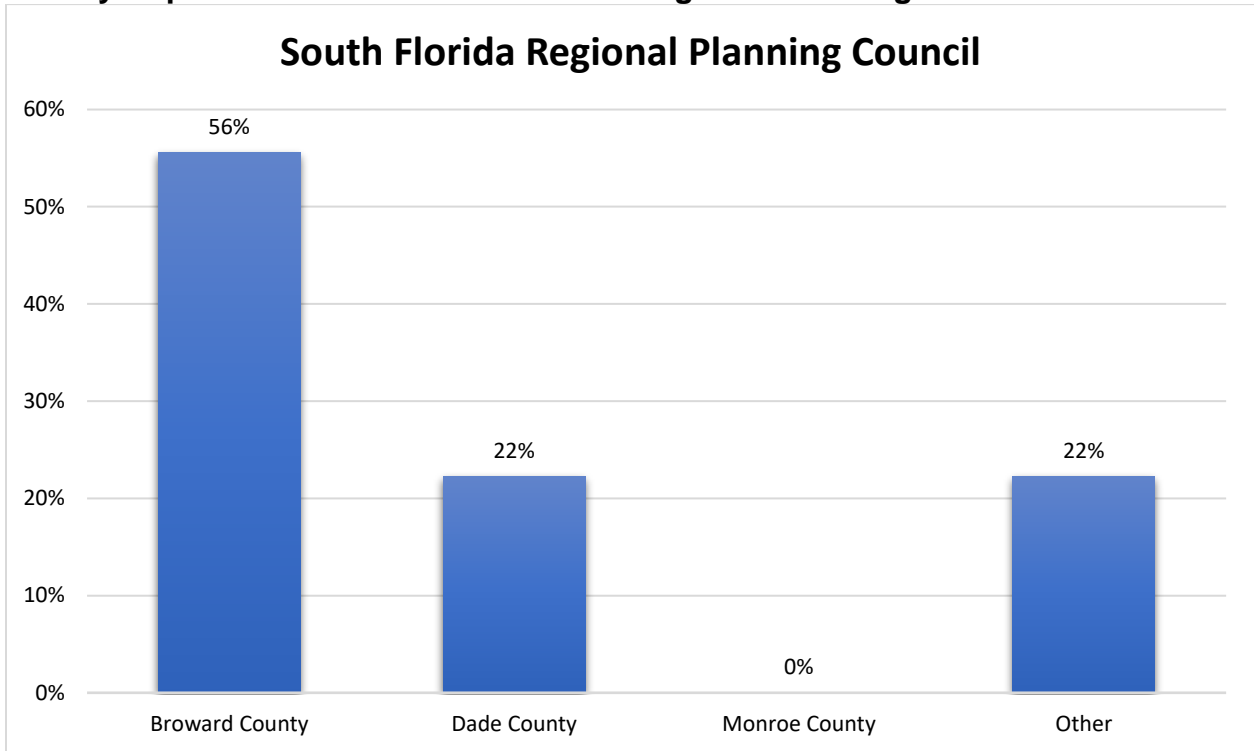


Table 9.
County Representation for North Central Florida Regional Planning Council

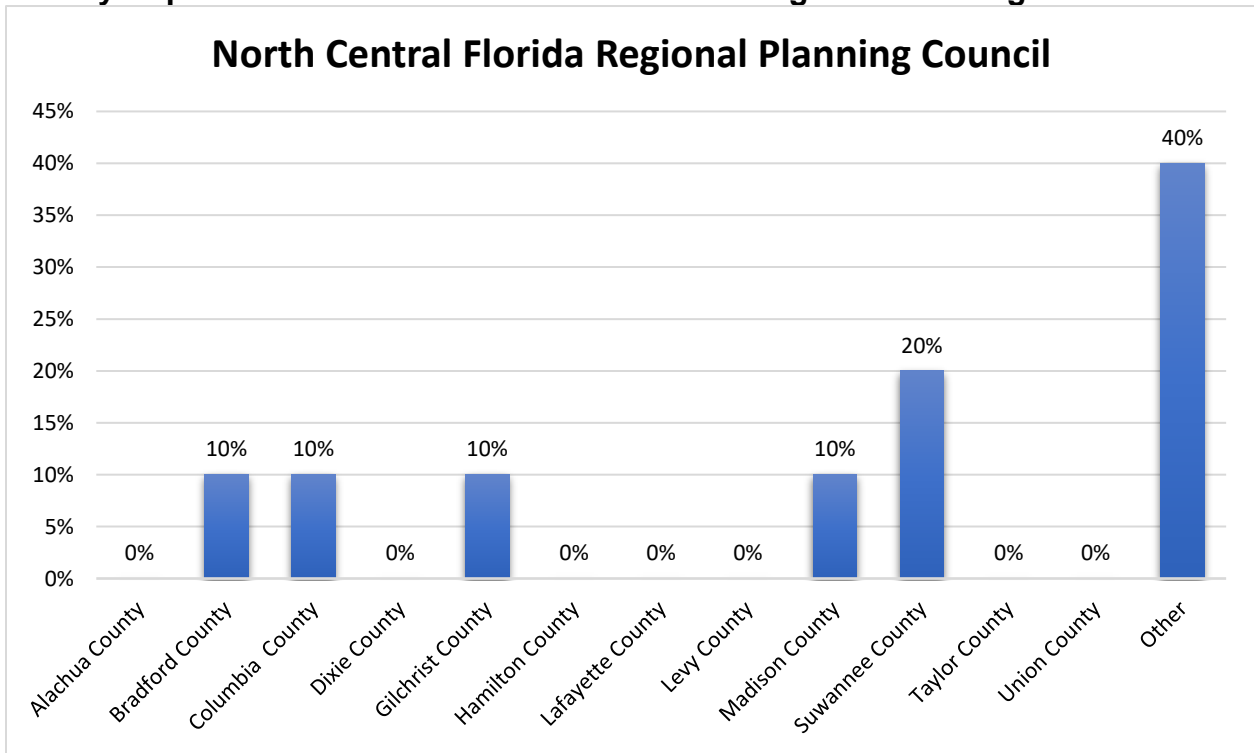


Table 10.
County Representation for East Central Florida Regional Planning Council

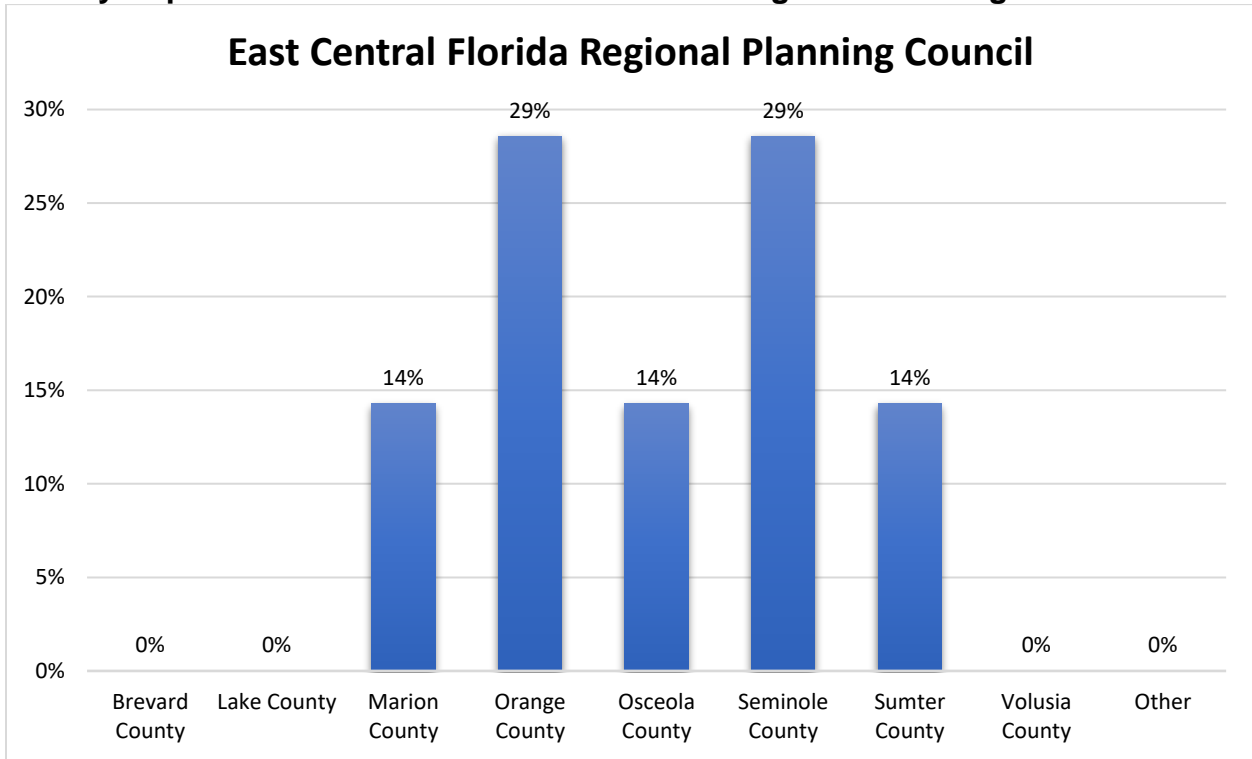


Table 11.
County Representation for Tampa Bay Regional Planning Council

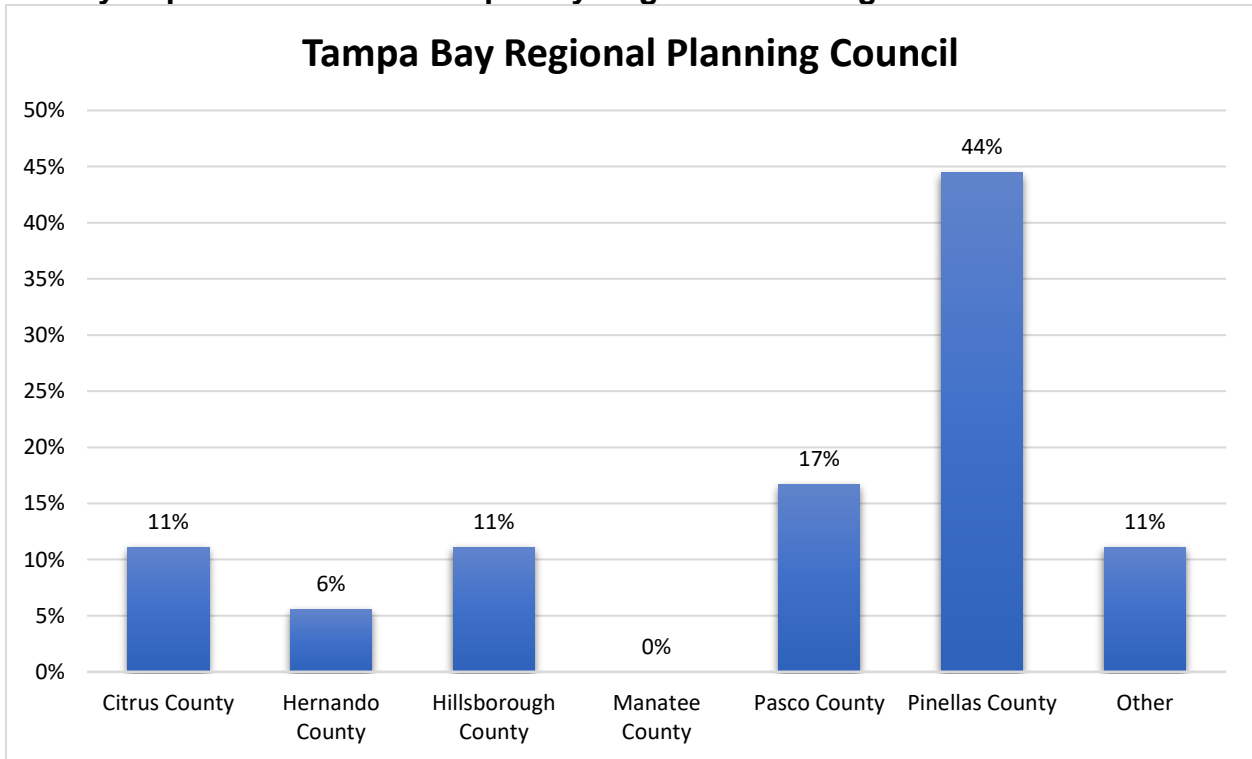
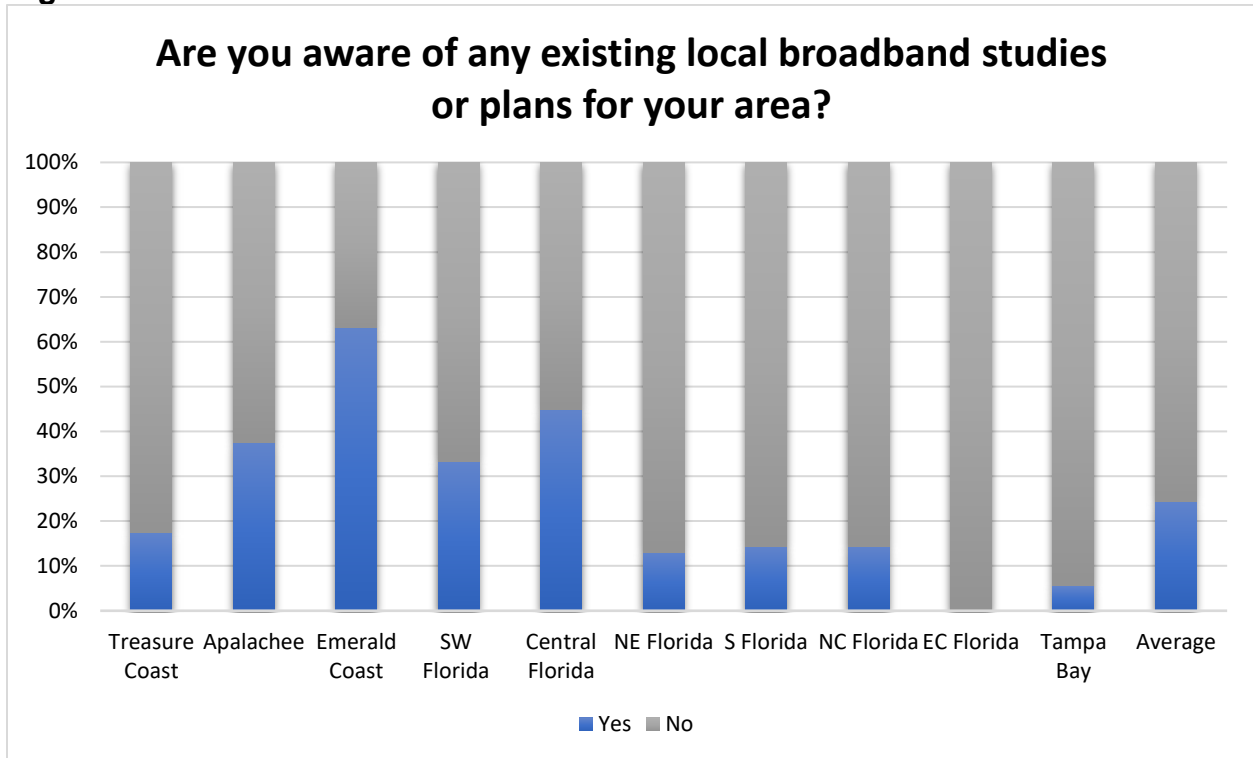


Table 12.

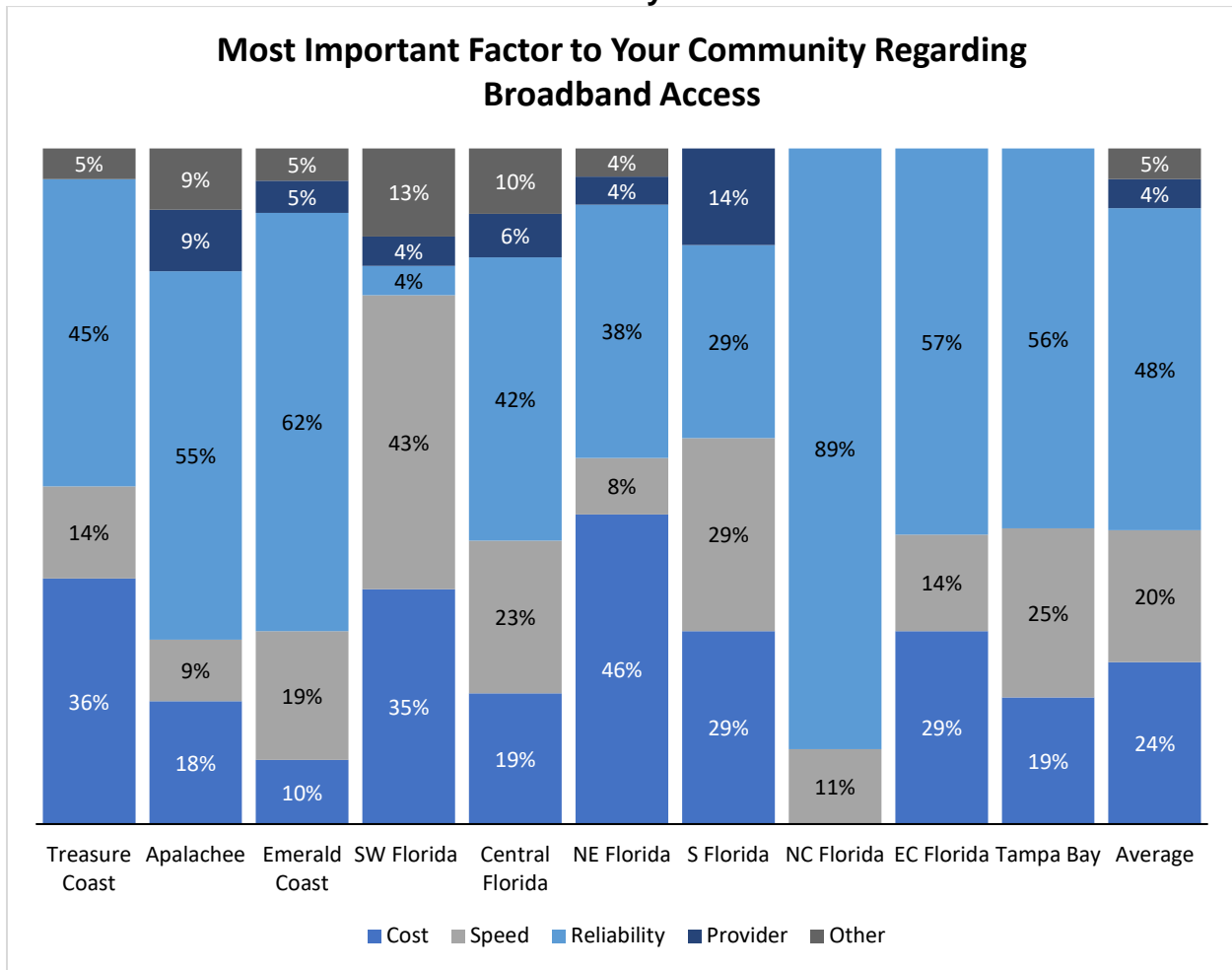
Percentage of participants with knowledge of existing broadband studies in their region.



On average, 76 percent of participants identified they are not aware of any existing local broadband studies or plans in their areas. Participants discussed the need for a feasibility study and broadband speed testing to develop a granular map of their regions and better understand the current status of broadband internet services in their areas. Regional leaders agreed that these studies will provide data necessary to make informed decisions on strategies and technologies needed to increase the availability and accessibility of broadband internet services in their regions. Participants described the shortfalls of using census blocks and noted the census blocks do not provide an accurate representation of an area’s access to broadband. For example, if one address in a census block has access to 25/3 speeds that entire block is considered “served”. Rural areas with larger census blocks are underrepresented when this approach is used. ISP updated participants on the granular mapping the Federal Communications Commission (FCC) will be implementing in 2021 to identify the status of broadband internet services across the United States (U.S.).

During discussions, participants identified internet equity as a concern and noted that some regions are seeing more upgrades in higher income areas while rural and low-income areas are not serviced, or the current systems are not upgraded.

Table 13.
Factors for broadband internet accessibility.

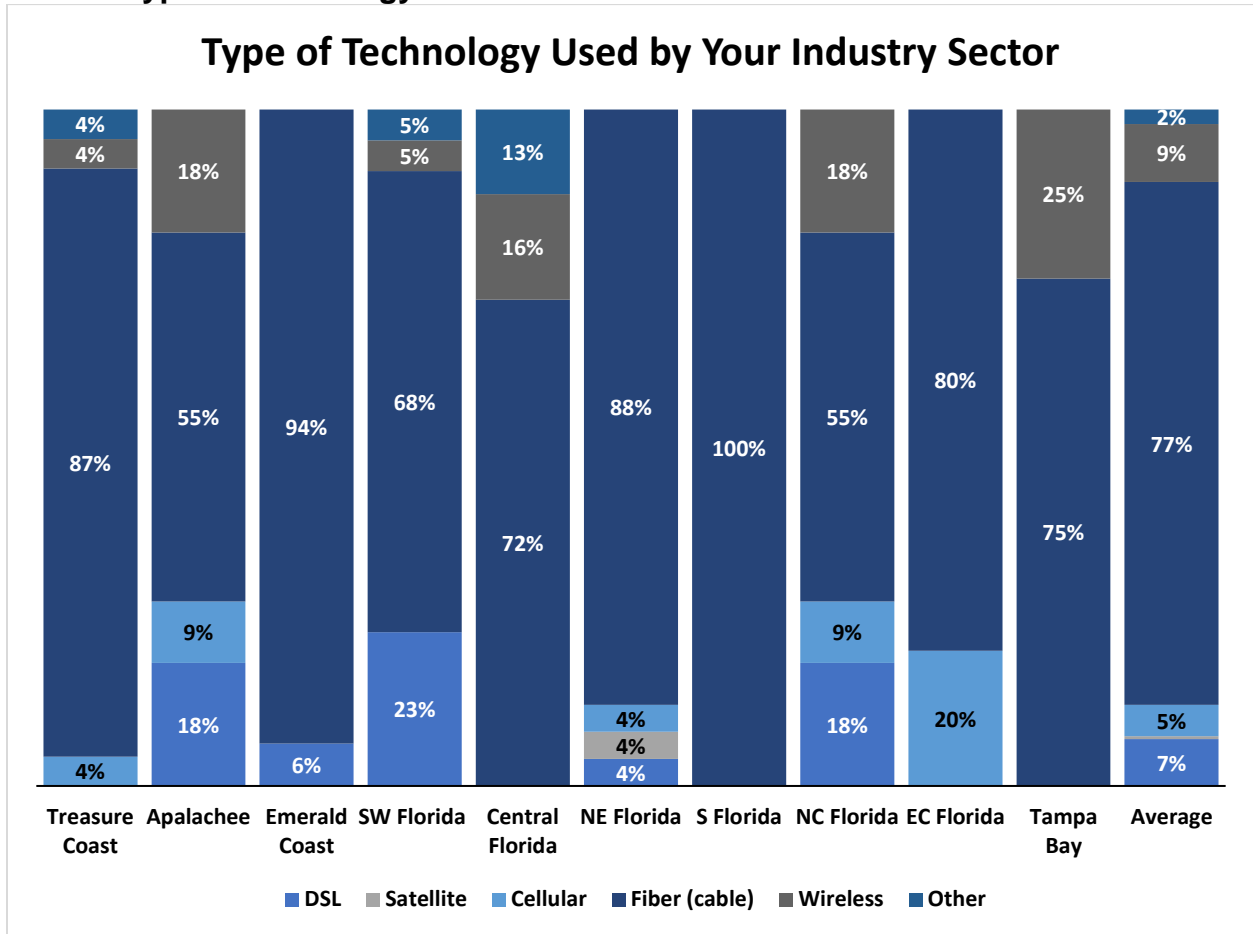


On average, polling showed the most important factor to Florida communities regarding their broadband internet accessibility is reliability, followed by cost, speed, technology, and provider. Participants spoke about issues affecting various areas within their regions and placed importance on the factors that need improvement. In rural areas, important factors discussed were reliability, provider presence technology, and cost. Participants representing urban areas focused on reliability, cost, and speed. Urban areas with economically challenged populations placed more importance on cost and provider presence.

Below is a table ranking the importance of each factor by RPC:

	ARPC	CFRPC	ECFRPC	ECRPC	NCFRPC	NEFRPC	SFRPC	SWFRPC	TBRPC	TCRPC
1	Reliability	Reliability	Reliability	Reliability	Reliability	Cost	Reliability	Speed	Reliability	Reliability
2	Cost	Speed	Cost	Speed	Speed	Reliability	Cost	Cost	Speed	Cost
3	Speed	Cost	Speed	Cost		Speed	Speed	Reliability	Cost	Speed
4	Provider	Technology		Technology		Technology	Provider	Provider		Technology
5	Technology	Provider		Provider		Provider				

Table 14.
Current type of technology used.



On average, 77 percent of participants identified fiber (cable) as the type of internet technology their industry sector currently uses. Participants using wireless internet technology represented an average of nine percent of the participants polled. Representatives from Hardee County spoke to the success of their point-to-point wireless internet system and noted that the county increased their speed from 3 Mbps⁵ to 50 Mbps with plans to reach speeds of 1 Gbps⁶ in 2021. Participants currently using Digital Subscriber Line (DSL)⁷ internet technology represented an average of seven percent polled. Five percent of participants identified cellular⁸ as the technology their regions use. These participants detailed their experiences with cellular service including hotspots and recognized that most of the data is used quickly and signal strength is unreliable in rural areas. Two percent of participants identified they use other forms of internet technology. Participants who use a combination of internet technologies were instructed to select 'other' when completing the poll.

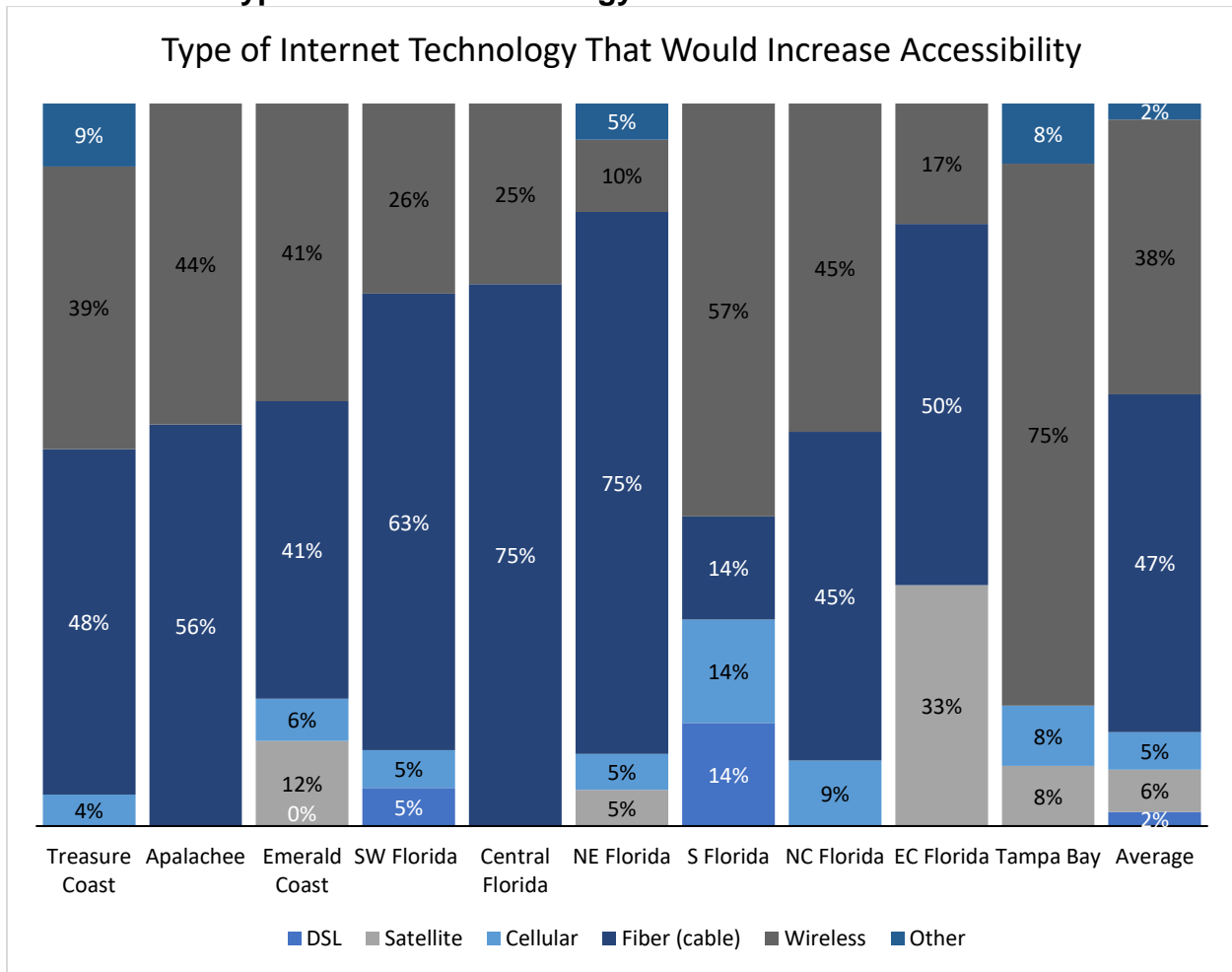
⁵ Megabits per second (1 million bits per second).

⁶ Gigabits per second (1 billion bits per second).

⁷ Transmits data over traditional copper telephone lines already installed to homes and businesses.

⁸ Utilizes multiple mobile networks to create a private connection to the internet where wired technologies are not available.

Table 15.
Desired future type of internet technology.



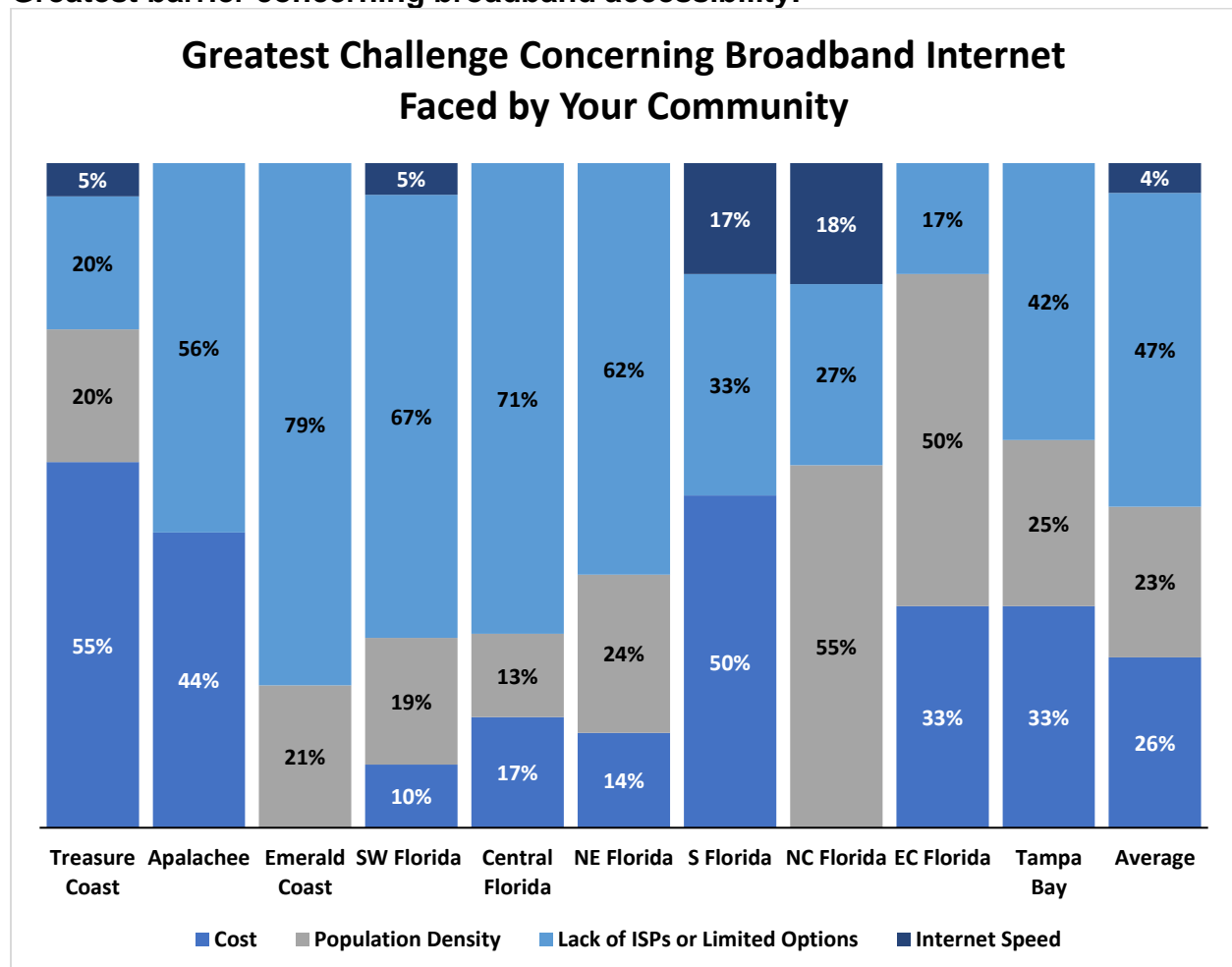
On average, 47 percent of participants chose fiber (cable) as the internet technology that would increase accessibility. Wireless was selected by 38 percent of participants as the internet technology that would increase accessibility in their regions. In discussions, Internet service providers spoke to the importance of a fiber infrastructure or “backbone” to support wireless internet technology. Satellite internet technologies averaged six percent of responses. Participants mentioned satellite is an option that they are interested in exploring, specifically in rural areas with low provider penetration. Finally, five percent of participants selected cellular internet technology, while DSL and ‘other’ technologies averaged two percent each.

Following the poll, respondents were asked to identify why they chose each internet technology. Participants mentioned that they chose fiber as the type of internet technology that would increase internet accessibility because they are familiar with the term. Many brought up that they do not know enough about the emerging technologies available in their region to make an informed decision on what will increase accessibility in their underserved and unserved areas. Participants discussed the importance of conducting a feasibility study, including speed tests, to develop a more precise

understanding of their current broadband internet services and noted that this information will assist them in making informed decisions in the future.

Workshop participants commonly discussed the need for a combination of technologies approach to increase the availability and accessibility of broadband internet services across Florida. This approach includes identifying technologies available in the region and adopting a unique combination of them to provide broadband internet access to unserved and underserved residents. For example, an unserved rural community may require a combination of satellite, wireless, and cellular internet technologies to increase availability of broadband internet services. However, to increase accessibility, an underserved urban community in the same region may need to upgrade existing fiber infrastructure to support expanding wireless internet technologies.

Table 16.
Greatest barrier concerning broadband accessibility.



When asked to identify the greatest challenge concerning broadband internet faced by their communities, 47 percent selected the lack of internet service providers and limited options for service. Cost was identified as the greatest challenge by 26 percent of

respondents, 23 percent chose population density, and four percent selected internet speed. Each region faces a different mix of challenges with their broadband internet.

Data collected during the workshop shows a strong correlation between population density and lack of providers in regions representing rural areas of Florida. Following the poll, participants identified low industry saturation as a challenge commonly aligned with low population density in rural areas. Participants recognize the distance between customers is a factor to consider as there is little to no return on investment to incentivize providers to expand into rural areas. Participants that have secured funding or are actively searching for grants to expand broadband services into rural areas have encountered the problem of locating providers willing to complete their projects. ISP acknowledged areas with a low population density are often not considered economically viable to service with fiber cables and mentioned alternative technologies that can be used to access internet in these situations. Alternative technologies may include, but are not limited to: satellite technologies, point-to-point⁹ wireless systems, and cellular hotspots¹⁰.

Regional leaders in underserved areas explained a connection between the cost of internet services and limited service options. The participants explained when providers are limited, cost could become a secondary issue. A lack of competition and affordable providers can leave residents completely without service or paying high costs for limited service.

Participants representing urban communities identified the cost or affordability of internet services as a barrier and noted that economically challenged populations who cannot afford commercial internet service might not know they could potentially qualify for programs to receive free or discounted internet service. Florida's ISP spoke to special programs for low-income customers. Concern was raised for low adoption rates of these programs without structured communication and coordination between ISP and local, county, and state government.

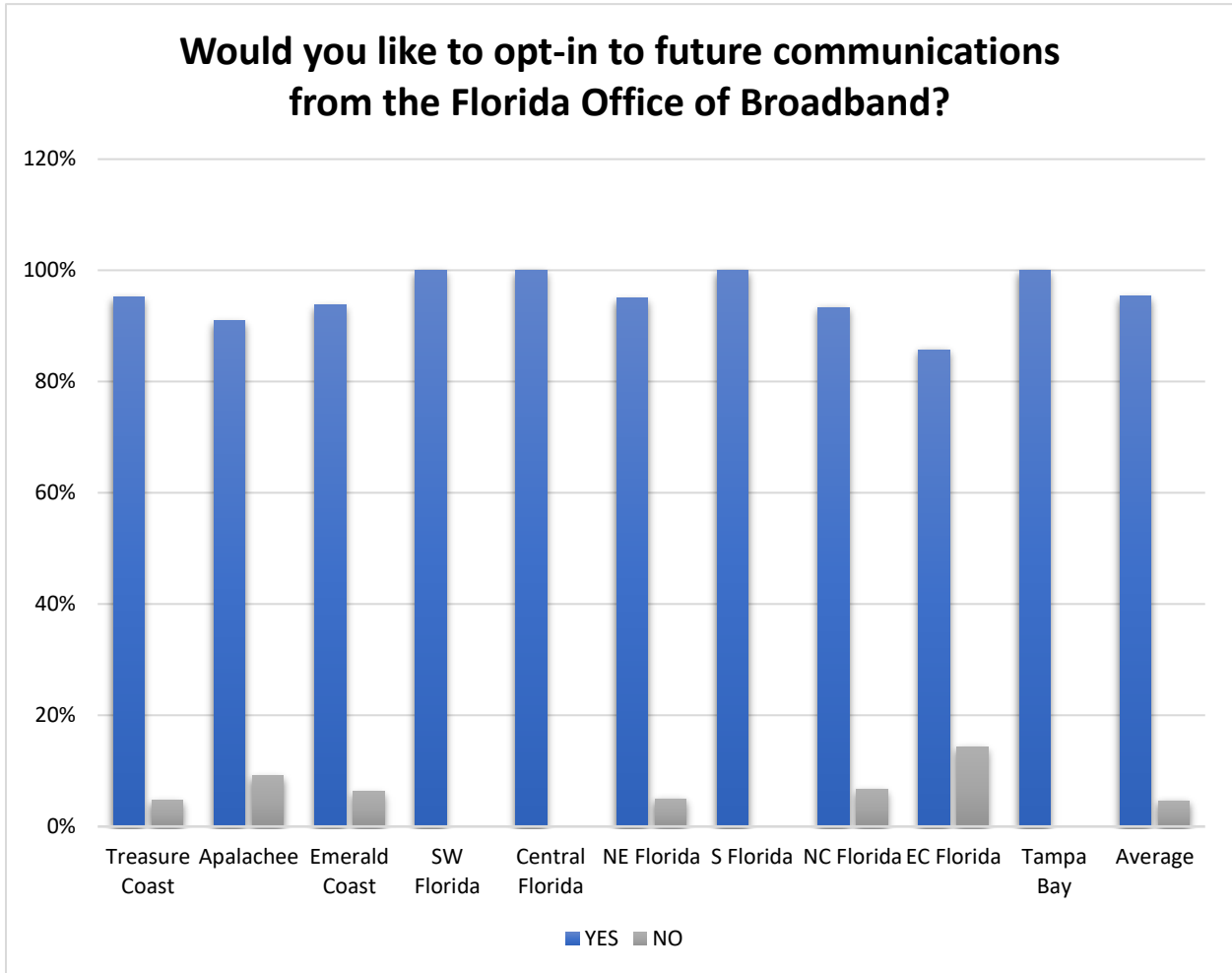
Internet speed and cost were commonly identified as challenges faced by participants from large cities and suburban areas across the state. Participants explained that urban environments have high population densities and high levels of internet traffic that result in diminished internet speed. Residents in these areas are typically charged higher rates to receive access to enhanced services.

⁹ Method of wirelessly connecting locations to provide internet access in areas where fiber infrastructure is not desirable to deploy.

¹⁰ A device that provides Internet access via a wireless network.

Table 17.

Interest in future communications with the Florida Office of Broadband.



On average, 95 percent of participants opted to receive future communications from the Florida Office of Broadband.

Appendix

Survey Instrument Text:

1. You are completing this survey from which sector?
 - a. Library
 - b. K-12 Education
 - c. College/University
 - d. Local Healthcare Provider
 - i. Government
 - ii. Private
 - e. Private Business
 - f. Community Organization
 - g. Economic Development Organization
 - h. Local Government
 - i. Region
 - ii. County
 - iii. Municipal
 - i. Tourism
 - j. Parks & Recreation
 - k. Agriculture
 - l. Internet Service Provider

2. In which county is your place of business/organization located?

3. Are you aware of any existing local broadband studies or plans for your area?
 - a. Yes No

4. Of the following factors, which is the most important to your community regarding broadband internet accessibility?
 - a. *Cost*
 - b. *Speed*
 - c. *Reliability*
 - d. *Provider*
 - e. *Technology (DSL, Satellite, Cellular, Fiber, Wireless, Other)*

5. What type of internet technology does your industry sector currently utilize through its internet service provider?
 - a. *DSL*
 - b. *Satellite*
 - c. *Cellular*
 - d. *Fiber*
 - e. *Wireless*
 - f. *Other*

6. What type of internet technology would increase internet accessibility for those you serve?
 - a. *DSL*
 - b. *Satellite*
 - c. *Cellular*
 - d. *Fiber*
 - e. *Wireless*
 - f. *Other*

7. Please identify the greatest challenge/barrier concerning broadband internet faced by your community or region.
 - a. *Cost*
 - b. *Population Density*
 - c. *Lack of Internet Service Providers or Limited Options*
 - d. *Internet Speed*

Definitions:

Broadband Internet

High-speed Internet access that is always on and faster than the traditional dial-up access.

Cellular Internet

Utilizes multiple mobile networks to create a private connection to the internet where wired technologies are simply not available.

DSL (Digital Subscriber Line)

Transmits data over traditional copper telephone lines already installed to homes and businesses.

Fiber (Fiber Strand)

Converts to light electrical pulses carrying data and sends the light through transparent glass fibers about the diameter of a human hair. Fiber transmits data at speeds much faster than DSL or cable, typically by tens or even hundreds of Mbps.

Gbps

Gigabits per second (1 billion bits per second).

Hotspot

A device that provides Internet access via a wireless network.

Mbps

Megabits per second (1 million bits per second).

Point-to-Point Wireless

Method of wirelessly connecting locations to provide internet access in areas where fiber infrastructure is not desirable to deploy.

Satellite

Internet access provided through communication satellites.

Wireless

Internet applications and access using mobile devices such as cell phones and palm devices, or Broadband Internet service provided via wireless connection, such as satellite or tower transmitters.